

## Contents

Contempt of Court: Revisiting Limits and Freedoms	3
India Crosses 1 Billion Internet Users: Expanding Access Amidst Digital Divide	3
Swachh Survekshan Grameen 2025: Rural Sanitation as Competitive Governance	4
NAKSHA Initiative: Streamlining Land Records Through Panchayat-Tech Integration	5
National Census Delay: Governance Blind Spots in the World's Largest Enumeration Exercise	6
C-CARES 2.0: A Climate Risk Governance Tool for India's Vulnerable Districts	7
Estimates Committee Revamp: Strengthening Outcome-Oriented Parliamentary Oversight	8
ECINET App: Enhancing Electoral Integrity Through Field-Level Digitisation	9
India and the SCO: Balancing Regional Aspirations Amid Geopolitical Shifts	10
RBI's Monetary Policy   Growth vs. Inflation Debate	11
India's GDP Estimates FY 2024–25   Path to the 4th Largest Economy	12
Ubharte Sitaare Programme   Fueling Export-Led Growth through MSMEs	12
National Forensic Infrastructure Enhancement Scheme (NFIES) - Reforming Criminal Justice through Science	13
India's First Astronaut to the ISS   A New Era in Space Diplomacy	14
Financial Inclusion Milestones   The Jan Dhan-Aadhaar-Mobile (JAM) Trinity in 2025	15
India's Renewable Energy Milestone 2025   Greening the Grid for Energy Security	16
Remembering the Emergency and Safeguarding Democracy	17
Census 2027 Planning & the Caste Enumeration Debate	18
FATF Report 2025 – Strengthening India's Financial Security Architecture	19
National Metrology Strategy 2025 – Standardizing India's Scientific Precision	19
Global AI Regulation Talks – India's Balanced Approach to Responsible Innovation	20
Jal Shakti Mission & River Linking – A Blueprint for Water Security	21
Indo-Pacific Maritime Dialogue 2025 – India's Strategic Balancing Act	22
Urban Flooding & Disaster Preparedness – Lessons from Mumbai and Chennai (2025)	22
Agri-Exports and the Global Millet Market – India's 2025 Boost	23
Renewable Energy Milestone – Solar, Wind & Green Hydrogen Updates	24

Digital Personal Data Protection Act – Implementation Insights and Challenges (2025)	25
Women's Reservation Bill – Implementation Roadmap and Challenges (Post-Enactment Analysis)	25
Bharat Semiconductor Mission – July 2025 Progress Report	26
India's Climate Finance Architecture – Progress, Challenges & Global Role (July 2025)	27
India's Defence Tech Revolution – Indigenous UAVs, Quantum R&D & Start-up Integration	28
The India–Africa Partnership 2025 – Strategic Priorities, Development Projects & Global South Agenda	29
Global Tiger Summit 2025 – India's Conservation Leadership and Emerging Challenges	30
India's Digital Trade Negotiations Strategy 2025 – WTO Stand and Data Sovereignty Imperatives	31
National Urban Digital Mission (NUDM) 2025 – Building Smart, Inclusive & Resilient Cities	32
Ayushman Bharat Digital Mission 2025 – Strengthening Health Tech Infrastructure and Insurance Portability	33
National Metrology Strategy 2025 – Precision, Innovation, and India's Quality Revolution	34
Defence Production Boost 2025 – India's Push for Indigenous UAVs, Quantum Tech, and Start-up Integration	35
MSME Credit Revival in India – From Emergency Liquidity to Structural Reform (2025 Update)	36
Women in STEM & Research Funding Equity: Bridging the Gender Gap in Innovation	38
National Policy on Older Persons 2025: Redefining Senior-Centric Welfare	39
GIFT City: India's Global Financial Hub in 2025 – Status Report & Strategic Expansion	40
India–EU Connectivity Partnership: Strategic & Digital Corridors	41
India's Semiconductor Ecosystem 2025: Achievements, Challenges & Global Ties	42
India's Electric Mobility Push: EV Adoption, Charging Infra & Policy Shifts	43
"Kan-Kan Mein Ram": Cultural Diversity Through the Prism of Ramayana Traditions	44
Live Telecast & Festivalization: Maharashtra's Ganeshotsav 2025 Goes Global	44
Harihar National Theatre Festival 2025: Fusion of Monsoon, Tradition & Academia	45
Government Notifies Inter-services Organisations Rules, 2025	45
Andaman & Nicobar Command – India's Forward Post in the Indo-Pacific	46
Fibre Optic Drones – Tactical Technology in Surveillance & Communication	47

▪ SIPRI Annual Report 2025 – India's Defence Standing in the Global Arms Landscape	48	▪ Taiwan Strait – A Geo-strategic Flashpoint in the Indo-Pacific	61
▪ Strategic and Policy Implications	48	▪ Cook Islands – Geopolitical Ripples in the South Pacific	61
▪ Adi Karmyogi Programme – Tribal Talent Meets Administrative Training	49	▪ Luxor – Egypt's Ancient City Back in Global Focus	62
▪ Goa Achieves Full Functional Literacy – A Model for Inclusive Lifelong Learning	50	▪ Enhanced Rock Weathering (ERW) Technique – A Climate Solution from the Soil	62
▪ Sahitya Akademi Yuva and Bal Puraskar 2025 – Nurturing Literary Excellence Among the Young	51	▪ Qatar – India's Energy Ally in the Gulf	63
▪ Adi Karmyogi Programme – A Civil Services Outreach for Tribal Youth	52	▪ Seven Summits – Geographical Milestone with Geopolitical Resonance	63
▪ Goa Achieves Full Functional Literacy – A National Milestone in Inclusive Education	53	▪ Paraguay – Strategic Crossroads of South America	63
▪ Sahitya Akademi Puraskar 2025 – Celebrating Literary Excellence Across India	54	▪ Heat Dome – When the Atmosphere Turns into an Oven	64
▪ Global Tobacco Epidemic Report 2025 – India's Progress and Remaining Gaps	55	▪ Hodeidah Port – Yemen's Lifeline in a Conflict Zone	64
▪ International Day of Yoga 2025 – Global Reach and India's Soft Power	56	▪ Shipki La – A Strategic Mountain Pass on the India-China Border	64
▪ Gwada Negative – informal name for the newly classified EMM-negative blood group system	57	▪ Green Arabia Hypothesis – Was the Arabian Peninsula Once Green?	65
▪ Prime Ministers' Museum and Library – Celebrating India's Democratic Journey	58	▪ Taiwan Strait – Geopolitical Flashpoint in the Indo-Pacific	65
▪ NAVYA Initiative – Nurturing Aspirations through Vocational training for Young Adolescent Girls	59	<b>PHILOSOPHY OF THE MONTH</b>	<b>66</b>
▪ GI Tagged Kolhapuri Chappals – Preserving Craft, Empowering Artisans	60	▪ Kairos: The Philosophy of the Right Moment	66
▪ 'Green Arabia' Hypothesis – Palaeoclimate Lessons from the Arabian Peninsula	61	▪ Ubuntu: I Am Because We Are	66
		<b>ESSAYS FOR JUNE &amp; JULY</b>	<b>67</b>
		▪ AI and the Human Mind: Coexistence or Competition?	67
		▪ Water Security: The Defining Challenge of the 21st Century	68
		<b>ETHICS CASE STUDY</b>	<b>69</b>

## Contempt of Court: Revisiting Limits and Freedoms

### Why in News?

In May 2025, the Supreme Court dismissed a contempt plea against a social media commentator who criticised judicial delays and lack of transparency in certain verdicts. The Court clarified that reasoned and fair criticism of judicial functioning does not amount to contempt of court.

### Background and Core Concept

Contempt of Court refers to any act that defies the authority or dignity of the judiciary and undermines the administration of justice. It is defined under the Constitution and codified in the Contempt of Courts Act, 1971.

- Article 129 confers the Supreme Court with the power to punish for contempt.
- Article 215 provides the same power to High Courts.
- The Act categorises contempt into civil (willful disobedience of court orders) and criminal (acts that scandalise the court, lower its authority, or obstruct judicial proceedings).

### Key Features and Legal Framework

- Criminal contempt includes spoken or written words or conduct that scandalises or tends to scandalise the judiciary, prejudices judicial proceedings, or obstructs the due course of justice.
- Punishable with simple imprisonment up to six months or a fine up to ₹2,000, or both.
- Courts exercise wide discretionary powers in deciding contempt cases, often invoking them to safeguard institutional credibility.

### Significance

- Contempt powers act as a constitutional safeguard to preserve the authority and independence of the judiciary.
- They aim to ensure an environment where judges can function without fear, pressure, or undue influence.
- Contempt jurisdiction also serves as a check against baseless vilification that may erode public confidence in the justice delivery system.

### Concerns and Criticism

- The expression "scandalising the court" remains vague and open to subjective interpretation.
- Critics argue it risks becoming a tool for judicial overreach and may suppress constitutionally guaranteed freedom of speech under Article 19(1)(a).
- The judiciary acting as the complainant, prosecutor, and judge in contempt matters raises concerns about natural justice and institutional accountability.

### Way Forward and Reform Proposals

- The 274th Law Commission Report (2018) recommended reviewing contempt provisions, especially those relating to scandalising the court.
- The UK abolished 'scandalising the court' as a form of contempt in 2013, maintaining only acts that demonstrably disrupt justice.
- India must evolve a jurisprudence of "constitutional tolerance" where criticism is protected unless it causes real and measurable harm to judicial functioning.

### Relevance for UPSC

#### GS Paper II – Polity and Governance

- Judiciary and Judicial Independence
- Fundamental Rights and Reasonable Restrictions
- Separation of Powers and Constitutional Morality

#### Key Concepts for Value Addition

Term	Description
Article 129	Empowers the Supreme Court to punish for contempt of itself
Article 215	Provides similar power to High Courts
Civil Contempt	Disobedience of judicial orders or undertakings
Criminal Contempt	Acts or words that scandalise or lower the authority of the court
S. Mulgaokar Case (1978)	Laid down the principle of restraint and tolerance in exercising contempt powers

### Summary Note

**While the judiciary must remain free from slander and motivated attacks, it must also uphold democratic values by welcoming informed public discourse. Contempt powers must evolve in line with contemporary democratic standards and constitutional liberties.**

## India Crosses 1 Billion Internet Users: Expanding Access Amidst Digital Divide

### Why in News?

In May 2025, the Internet and Mobile Association of India (IAMAI), in collaboration with Kantar, reported that India has crossed the milestone of 1 billion active internet users, making it the second-largest digitally connected nation after China.

### Background and Core Concept

The number of internet users in India has grown exponentially over the last decade, largely driven by low-cost data, digital governance initiatives, and the spread of mobile technology.

Government programs like BharatNet, PMGDISHA, and the Digital India Mission have aimed to bridge the rural-urban

## C.C. JUNE & JULY '25

divide in internet access and enable a Digital Public Infrastructure (DPI) model based on Aadhaar, UPI, and DigiLocker.

### Key Highlights from the Report

- Total internet users: 1.01 billion (as of March 2025)
- Urban penetration: 78%
- Rural penetration: 41%, up from 34% in 2023
- Gender divide: Internet usage among men is twice that of women in rural India
- Youth dominance: 65% of users are between 15–35 years of age

### Significance

- Enhances access to digital services such as banking, e-commerce, telemedicine, and e-governance
- Strengthens the Digital Public Infrastructure (DPI) model as a global example
- Supports economic inclusion of MSMEs through ONDC, UPI, GeM
- Boosts delivery of schemes like PM-KISAN, Ayushman Bharat via DBT and e-verification
- Catalytic for education (DIKSHA), health (eSanjeevani), and employment platforms (NCS)

### Concerns and Limitations

- Persistent digital gender gap in rural areas; women face device access and literacy barriers
- Linguistic exclusion due to lack of regional language content
- Uneven quality of connectivity in hilly and remote areas
- Risk of digital overdependence in public service delivery without ensuring offline alternatives
- Cybersecurity vulnerabilities and misinformation risks with growing digital exposure

### Way Forward

- Accelerate last-mile connectivity through BharatNet, 5G expansion, and satellite internet
- Strengthen digital literacy programs, especially for women and the elderly
- Create more vernacular and localised content to improve accessibility
- Integrate data protection laws and digital rights frameworks to build trust
- Enable multi-modal service delivery, ensuring both online and offline accessibility

### Relevance for UPSC

GS Paper II – Welfare schemes, governance via ICT, digital inclusion

GS Paper III – Infrastructure, economy, science and tech, cybersecurity

### Key Concepts for Value Addition

Term	Explanation
<b>Digital Public Infrastructure (DPI)</b>	Government-enabled digital services stack (e.g., Aadhaar, UPI, DigiLocker)
<b>BharatNet</b>	Optical fibre connectivity to gram panchayats under Digital India Mission
<b>PMGDISHA</b>	Pradhan Mantri Gramin Digital Saksharta Abhiyan – for rural digital literacy
<b>ONDC</b>	Open Network for Digital Commerce – to democratise e-commerce access
<b>Gender Digital Divide</b>	The inequality in digital access and use across genders

### Summary Note

**Crossing one billion internet users is a landmark achievement, but it must be matched with inclusive access, user empowerment, and data ethics. India's future digital journey must balance scale with sensitivity—ensuring that connectivity translates into real capability.**

## Swachh Survekshan Grameen 2025: Rural Sanitation as Competitive Governance

### Why in News?

In May 2025, the Ministry of Jal Shakti launched the latest edition of Swachh Survekshan Grameen (SSG) under Phase II of the Swachh Bharat Mission (Grameen), aimed at assessing sanitation status across over six lakh villages in India.

### Background and Core Concept

Swachh Survekshan Grameen is a nationwide annual rural sanitation ranking exercise that evaluates villages, districts, and states on cleanliness parameters. The initiative was introduced in 2018 as part of the behavioural change strategy under the Swachh Bharat Mission-Grameen. The current edition falls under SBM-G Phase II, which focuses not just on Open Defecation Free (ODF) status, but on ODF-Plus targets like greywater management, solid waste segregation, and plastic waste control.

### Key Features

- The 2025 round of SSG will cover all states and Union Territories, including over 700 districts and 6 lakh+ villages.
- The ranking is based on three major pillars:
  1. Direct Observation by field teams
  2. Service-Level Progress using data from SBM-G dashboards

## C.C. JUNE &amp; JULY '25

3. Citizen Feedback through mobile apps, IVRS, and web portals
- States will be evaluated on innovation, people's participation, and sanitation infrastructure quality.
  - The survey also promotes competition among panchayats to institutionalise Swachhata at the grassroots.

**Significance**

- Reinforces the principle of cooperative and competitive federalism in sanitation governance.
- Enhances data-based policy implementation in rural India.
- Encourages community participation and ownership through real-time feedback systems.
- Integrates sanitation with livelihoods and resource recovery, especially through plastic waste management and composting.

**Challenges and Limitations**

- Disparities remain in sanitation infrastructure across tribal, hilly, and remote regions.
- Behavioural change is not uniform—ODF declarations do not always reflect ground realities.
- Dependence on self-reported or unverifiable data in remote areas may compromise the credibility of rankings.
- Issues like greywater reuse and faecal sludge management remain underdeveloped in most rural blocks.

**Way Forward**

- Strengthen third-party verification systems and AI-based image auditing.
- Link survey results with performance-based grants and state-level sanitation incentives.
- Promote community-led total sanitation (CLTS) and local innovations.
- Enhance convergence with MGNREGS and Jal Jeevan Mission for resource integration.

**Relevance for UPSC**

GS Paper II – Governance, Health, Rural Development

GS Paper III – Environment and Waste Management

**Key Concepts for Value Addition**

Term	Description
SBM-G Phase II	Focuses on sustaining ODF status and solid/liquid waste management
ODF-Plus	Includes waste segregation, plastic management, and greywater reuse
Greywater Management	Treatment and reuse of domestic wastewater from kitchens and baths

**Citizen Feedback Mechanism**

Enables direct rating and complaint submission by rural citizens

**Summary Note**

**Swachh Survekshan Grameen 2025 reflects India's shift from infrastructure creation to outcome-based sanitation governance. By integrating citizen feedback, real-time monitoring, and competitive incentives, the initiative seeks to deepen hygiene practices and rural environmental resilience in the run-up to Viksit Bharat 2047.**

**NAKSHA Initiative: Streamlining Land Records Through Panchayat-Tech Integration****Why in News?**

The Ministry of Panchayati Raj, in collaboration with the National Informatics Centre (NIC), launched the NAKSHA (National Automated Khasra System for Harmonised Administration) initiative to digitise and synchronise land parcel records for panchayat-level governance and development planning.

**Background and Core Concept**

Land records in India have long suffered from fragmentation, duplication, and lack of standardisation across states. This has adversely impacted rural planning, welfare delivery, and dispute resolution.

NAKSHA aims to resolve these gaps by linking geo-referenced khasra maps (land parcels) with Panchayat Asset Registers, enabling real-time visibility, ownership verification, and seamless integration with public welfare and construction projects.

**Key Features**

- **Unified Digital Repository:** Integrates spatial land data with ownership and usage records.
- **Panchayat-Level Mapping:** Enables village-wise cadastral mapping using ISRO's Bhuvan platform.
- **Asset Tracking:** Links public infrastructure and government-funded assets (e.g., schools, anganwadis, roads) to khasra maps.
- **Real-Time Accessibility:** Web-based portal and GIS dashboard for state, district, and block-level officials.
- **Data Interoperability:** Compatible with eGramSwaraj, SVAMITVA, PMAY-G, and Jal Jeevan Mission dashboards.

**Significance**

- Addresses India's chronic issue of land disputes, which account for 66% of all civil litigation cases.
- Enhances transparency in rural development projects, including construction and fund tracking.



## C.C. JUNE & JULY '25

- Strengthens the bottom-up planning process by empowering gram panchayats with real-time spatial tools.
- Supports schemes like SVAMITVA, by improving access to property cards and drone-mapped plots.
- Helps achieve targeted welfare delivery through better household-level identification.

### Challenges and Limitations

- States follow non-uniform land record formats, making integration difficult.
- Need for continuous capacity building of local panchayat officials and revenue staff.
- Concerns around data privacy and ownership, particularly with private land digitisation.
- Resistance in areas with land encroachments or contested ownership claims.

### Way Forward

- Push for common digital land record standards through Model Land Titling Act (DOLA framework).
- Extend training for Gram Rozgar Sevaks and PRI members on GIS and data usage.
- Integrate NAKSHA with legal aid and Lok Adalat platforms to fast-track land dispute resolution.
- Develop open-source grievance redressal interface for land data-related citizen complaints.

### Relevance for UPSC

GS Paper II – Panchayati Raj, e-Governance, Local Governance

GS Paper III – Land reforms, Infrastructure, Use of Technology in Governance

### Key Concepts for Value Addition

Term	Explanation
Khasra Number	Unique land parcel identifier in rural land records
Bhuvan Panchayat	ISRO's geospatial platform for mapping Panchayat-level assets
SVAMITVA	Scheme for drone-mapped property cards in rural India
eGramSwaraj	Online monitoring platform for panchayat-level development and finance
DOLA	Draft Model Land Titling Act promoted by Department of Land Resources

### Summary Note

**NAKSHA represents India's shift toward geo-governance at the grassroots, where land, infrastructure, and welfare assets can be tracked**

**digitally in real time. It aligns with the broader goals of digital rural empowerment, dispute minimisation, and precision planning, especially in the lead-up to India's decentralised development vision under Viksit Bharat@2047.**

## National Census Delay: Governance Blind Spots in the World's Largest Enumeration Exercise

**Category: Polity & Governance | Demographics | Planning**

### Why in News?

As of May 2025, India's decennial population census—originally scheduled for 2021—remains postponed, marking the first such delay since 1871. The absence of updated demographic data is now impacting planning, welfare targeting, and resource allocation across sectors.

### Background and Core Concept

India's Census is the largest administrative data collection exercise in the world, governed by the Census Act of 1948 and conducted every ten years under the supervision of the Registrar General of India (RGI).

While the COVID-19 pandemic initially justified postponement, continued delay now stems from administrative restructuring, concerns over NRC/NIIR linkages, and logistical constraints related to digital integration.

### Key Issues and Implications of Delay

- Outdated Demographic Base: Welfare schemes like PM-Garib Kalyan Anna Yojana, Ayushman Bharat, and urban housing rely on 2011 data, which does not reflect current needs.
- Distortion in SECC-Linked Allocations: Targeting of MGNREGS, PMAY-G, and NSAP depends on socio-economic caste data from 2011, now grossly outdated.
- Planning Paralysis: States lack granular data on migration, ageing, fertility decline, and urban slum expansion, weakening evidence-based policymaking.
- Census-Digital Linkage Conflict: Push to integrate Aadhaar, NPR, and digital census raises privacy concerns and has triggered legal-political resistance.
- Delayed Population Projections: UN, NITI Aayog, and other planning bodies rely on accurate projections for policy forecasting, now compromised.

### Significance

- Census data underpins 14th and 15th Finance Commission transfers, impacting fiscal federalism.
- It is central to evidence-led policymaking in health, education, rural-urban development, and disaster management.
- Essential for parliamentary and state assembly seat delimitation exercises post-2026.

## C.C. JUNE & JULY '25

- Without updated data, inclusion–exclusion errors in welfare schemes may worsen, especially for women, migrants, and tribal groups.

### Concerns and Criticism

- Delay has no precedent; the Census is not constitutionally mandated but forms the statistical foundation of the welfare state.
- Risk of politicisation in integrating National Population Register (NPR) and Aadhaar with Census 2021.
- Concerns over digital exclusion, especially among elderly, remote, and marginalised populations in a tech-enabled census.
- Lack of transparency on revised timelines or alternative data strategies.

### Way Forward

- Finalise a phased digital+physical hybrid census rollout with secure data protocols.
- Issue state-wise provisional population estimates using satellite data and surveys to bridge the data vacuum.
- Build public confidence through transparent SOPs and delinking census from NPR/NRC.
- Set up an inter-ministerial data coordination task force to guide interim planning.

### Relevance for UPSC

GS Paper I – Indian Society, Population and Demographics

GS Paper II – Governance, Welfare Delivery, Policy Planning

GS Paper III – Use of Technology in Administration

### Key Concepts for Value Addition

Term	Description
Census Act, 1948	Empowers the Central Government to conduct census once every 10 years
National Population Register (NPR)	Database of usual residents—linked to Aadhaar and considered controversial
Socio-Economic and Caste Census (SECC)	Last conducted in 2011; used for welfare targeting
Registrar General of India (RGI)	Head of census operations under Ministry of Home Affairs

### Summary Note

**The delay in India's census reflects a deeper challenge in balancing administrative capability, political sensitivity, and digital transition. Without fresh population data, India risks misdirecting development and deepening inequality—highlighting that governance cannot proceed in statistical darkness.**

## C-CARES 2.0: A Climate Risk Governance Tool for India's Vulnerable Districts

### Why in News?

In May 2025, the Ministry of Environment and NITI Aayog jointly launched an upgraded version of the Climate Change Assessment & Risk Evaluation System (C-CARES 2.0). The platform aims to support district-level disaster risk assessment by integrating climate modelling with adaptive planning dashboards.

### Background and Core Concept

C-CARES was first introduced in 2022 as a pilot climate governance platform focused on helping state and local governments plan more effectively for climate-linked disasters.

### Version 2.0 expands its utility by integrating:

- IPCC-based vulnerability indices
- Geo-tagged hazard maps (e.g., for floods, heatwaves, GLOFs)
- Budget-tagging tools to align district plans with National Adaptation Funds (NAFCC)

The platform is hosted on the National Disaster Risk Index portal and linked to the SDG Localisation Dashboard.

### Key Features

- District-Level Climate Risk Scores: Based on exposure, sensitivity, and adaptive capacity.
- Integrated Dashboard: Combines GIS heatmaps, socio-economic data, and hazard projections.
- Budget–Disaster Alignment Tool: Recommends realignment of development expenditure with high-risk areas.
- Real-Time Data Layers: Includes IMD warnings, NDMA preparedness indices, and forest fire forecasts.
- Policy Integration: Aligned with India's National Action Plan on Climate Change (NAPCC) and State Action Plans (SAPCCs).

### Significance

- Helps build anticipatory governance capacity, moving beyond reactive disaster response.
- Enables evidence-based risk-sensitive planning at the district and panchayat levels.
- Supports inter-sectoral convergence—e.g., linking heatwave preparedness to healthcare budgeting or flood zones to MGNREGS water assets.
- Aligns with India's Mission LiFE (Lifestyle for Environment) and SDG Targets 11, 13, and 15.

### Challenges and Limitations

- Many districts lack trained staff to interpret and act on climate dashboards.
- Ground-level infrastructure (e.g., automatic weather stations, hydromet networks) remains patchy.

## C.C. JUNE & JULY '25

- No legal mandate yet to make C-CARES adoption compulsory for state and district planning bodies.
- Needs stronger integration with public finance and accounting systems for impact-based allocations.

### Way Forward

- Introduce a mandatory climate-risk screening clause in district planning templates.
- Launch capacity-building modules for SDMA, DDMA, and PRIs in dashboard usage.
- Integrate with MGNREGA and PMGSY planning portals to build climate-resilient assets.
- Expand into urban municipal bodies, particularly in climate-vulnerable metros.

### Relevance for UPSC

GS Paper II – Governance, e-Governance Tools, Disaster Preparedness

GS Paper III – Climate Change, Environment, Disaster Management, SDGs

### Key Concepts for Value Addition

Term	Description
C-CARES	Tool for evaluating climate-related risks and integrating them into governance
NAFCC	National Adaptation Fund for Climate Change – Funds localised adaptation plans
Mission LIFE	India's climate lifestyle initiative launched at COP27
SDG Target 13.1	Strengthen resilience to climate-related disasters
Risk-Sensitive Planning	Development planning that factors in hazard exposure and vulnerability

### Summary Note

**C-CARES 2.0 marks a shift toward data-driven, decentralised climate governance. By putting risk tools in the hands of district officials and panchayats, India is building the foundations for locally rooted resilience in the face of intensifying climate shocks.**

## Estimates Committee Revamp: Strengthening Outcome-Oriented Parliamentary Oversight

### Why in News?

In May 2025, the Lok Sabha Secretariat announced a structural revamp of the Estimates Committee, India's largest Parliamentary Financial Committee, to introduce a system of "outcome tracking dashboards" for key government schemes. This move aims to make legislative oversight more evidence-driven and performance-based.

### Background and Core Concept

The Estimates Committee, constituted under Rule 310 of Lok Sabha Rules, examines how money is being spent under various ministries and evaluates whether expenditures are in line with the policies approved by Parliament.

It has 30 members (only from Lok Sabha) and functions independently of the Public Accounts Committee and Committee on Public Undertakings. Unlike the PAC, the Estimates Committee focuses on forward-looking analysis, recommending reforms to improve efficiency and effectiveness.

### The 2025 reform seeks to expand this role to include:

- Real-time scheme evaluation
- Public dashboards for transparency
- Ministry-wise outcome reporting formats

### Key Features of the New Framework

- Digital Oversight Portals: Ministry-level dashboards will show fund utilisation, physical targets, and beneficiary feedback.
- Annual Outcome Review: Every scheme selected by the Estimates Committee will now include Measurable Output and Outcome Metrics (MOOMs).
- Collaboration with CAG and NITI Aayog: For data-sharing and third-party impact evaluations.
- Inclusion of States: Selected schemes implemented by states (e.g., Jal Jeevan Mission, PMAY-G) will now be audited for delivery performance.
- Transparency Mechanism: Summary reports will be made public via Parliament Library portal.

### Significance

- Shifts parliamentary review from budget input-based tracking to outcome assessment.
- Promotes evidence-based policymaking and course correction in real-time.
- Reduces dependency on self-certification by ministries; encourages independent audit and citizen feedback loops.
- Increases institutional accountability and strengthens Parliament's role as the "guardian of public funds."

### Concerns and Challenges

- Ministries may resist full disclosure of underperformance or delays.
- Varying quality of data among states and sectors may limit comparability.
- Need for training of committee staff and MPs in digital tools and dashboard interpretation.
- Possibility of "dashboard populism", where quantity overshadows quality or inclusiveness.

### Way Forward

- Institutionalise parliamentary research support units to assist MPs with data analysis.



## C.C. JUNE & JULY '25

- Link Estimates Committee reviews with Outcome Budget and Performance Management Framework.
- Create legislative guidelines for minimum output disclosure standards across schemes.
- Encourage civil society and media to use public dashboards for participatory audit.

### Relevance for UPSC

GS Paper II – Parliamentary Oversight, Transparency and Accountability, Financial Committees

GS Paper IV – Ethics in Public Administration, Public Accountability

### Key Concepts for Value Addition

Term	Description
Estimates Committee	Examines expenditure estimates to suggest improvements in efficiency
Outcome Budget	A document published by ministries that links budgetary allocation to intended outcomes
Measurable Output & Outcome Metrics (MOOMs)	Quantitative tools to track real-time progress of schemes
Performance Management Division (Cabinet Secretariat)	Supervises government scheme performance tracking

### Summary Note

**The digital transformation of the Estimates Committee reflects India's larger movement toward outcome-focused governance. For Parliament to remain a relevant and powerful institution in the age of big data and real-time service delivery, institutional innovation and accountability reform must go hand-in-hand.**

## ECINET App: Enhancing Electoral Integrity Through Field-Level Digitisation

### Why in News?

In May 2025, the Election Commission of India officially launched the ECINET mobile application, a field-level digitisation tool designed to strengthen the integrity, accuracy, and transparency of voter rolls across India. The app has been rolled out nationwide for use by Booth Level Officers (BLOs) ahead of the 2025–26 electoral cycle.

### Background and Core Concept

Maintaining accurate, clean, and inclusive electoral rolls is central to the functioning of a robust electoral democracy.

The ECINET App (Election Commission Integrated Network for Electoral Tracking) enables BLOs to verify, update, and

synchronise electoral data in real time. It is part of a broader effort to modernise voter database management and enhance trust in the electoral process.

The app is also being used to pilot facial authentication and geo-tagging of addresses, in line with the ECI's 2022 Electoral Roll Purification initiative.

### Key Features

- **Real-Time Data Entry:** BLOs can upload photos, documents, and verification status from the field.
- **Geo-Tagging Capability:** Helps locate voter households precisely, preventing duplication and proxy enrolments.
- **Facial Recognition Pilot:** Uses biometric comparison with Aadhaar (with consent) to detect fake or repeat entries.
- **Multilingual Support:** Enables smooth operation across states.
- **Integration with Voter Helpline Portal:** Updates are reflected on NVSP (National Voters' Services Portal).

### Significance

- Aims to address common challenges such as duplicate enrolments, invalid entries, and dead voters remaining on rolls.
- Empowers BLOs with field-ready mobile tools, reducing paperwork and enhancing efficiency.
- Makes voter registration drives more transparent, especially in urban slums, conflict areas, and high-migration zones.
- Supports cleaner elections and greater citizen trust in electoral integrity.

### Concerns and Criticisms

- Use of facial authentication raises privacy concerns, especially in absence of a statutory personal data protection law.
- Risk of exclusion of legitimate voters due to technical errors or over-reliance on geo-verification.
- BLOs in rural and tribal areas may face digital illiteracy or tech-access barriers.
- Legal experts caution against linking Aadhaar with voter ID without a proper legal framework (as flagged in the Puttaswamy verdict).

### Way Forward

- Roll out phased and audited implementation, with opt-in privacy settings and independent reviews.
- Strengthen training of BLOs, especially in under-connected and marginalised regions.
- Enact clear data protection protocols, especially for electoral data access, storage, and sharing.
- Improve grievance redressal mechanisms for voter enrolment and deletion disputes.

### Relevance for UPSC

GS Paper II – Election Commission of India, Electoral Reforms, Right to Privacy, Use of Technology in Governance

## C.C. JUNE & JULY '25

GS Paper IV – Ethics in Public Administration, Data Responsibility, Electoral Accountability

### Key Concepts for Value Addition

Term	Description
BLO (Booth Level Officer)	Field officer responsible for voter enrolment and verification
NVSP	National Voters' Services Portal – citizen platform for voter services
ERONet	Electoral Roll Management software used by ECI
Puttaswamy Judgment (2017)	Recognised the Right to Privacy as a fundamental right
Aadhaar–Voter ID Linkage	Currently optional; proposed for electoral roll cleansing, but legally debated

### Summary Note

**The ECINET app reflects India's broader trend toward real-time, data-driven public administration, even in sensitive democratic functions like elections. While technological progress enhances efficiency, it must be tempered with legal safeguards, privacy guarantees, and human-centric design—especially when the right to vote is at stake.**

## India and the SCO: Balancing Regional Aspirations Amid Geopolitical Shifts

### Why in News?

In May 2025, India participated in the Council of Foreign Ministers (CFM) Meeting of the Shanghai Cooperation Organisation (SCO), held in Astana, Kazakhstan. The meeting gained attention due to growing friction within the group, particularly India–Pakistan–China dynamics, and the question of SCO's relevance in a polarised global order.

### Background and Core Concept

The Shanghai Cooperation Organisation is a Eurasian political, economic, and security alliance, originally formed in 2001. India became a full member in 2017 alongside Pakistan. The SCO currently consists of eight member states, including China, Russia, Central Asian republics, India, and Pakistan.

While the organisation was initially security-centric, it now focuses on multilateral cooperation in trade, counter-terrorism, connectivity, and cultural diplomacy.

### Key Highlights of the 2025 Meeting

- India reiterated its zero-tolerance policy on terrorism, indirectly referencing cross-border threats from Pakistan.
- Refused to endorse China–Pakistan Economic Corridor (CPEC) initiatives promoted under SCO connectivity projects.

- Highlighted the importance of respect for sovereignty and territorial integrity in multilateral cooperation.
- Supported stronger cooperation on energy security, climate adaptation, and digital connectivity.
- Engaged bilaterally with Central Asian nations on Chabahar Port access and INSTC revival.

### Significance for India

- SCO remains one of the few multilateral platforms where India engages directly with China and Pakistan.
- A gateway to resource-rich Central Asia, where India lacks physical connectivity but enjoys soft-power influence.
- Helps counterbalance China's dominance in regional forums, though asymmetries persist.
- Opportunity for anti-terror intelligence sharing via the Regional Anti-Terrorist Structure (RATS).
- Enhances India's strategic visibility in Eurasia, complementing its Act East + Connect Central Asia policies.

### Concerns and Limitations

- Increasing polarisation within SCO between pro-China, pro-Russia blocs and India's strategic autonomy.
- Presence of Pakistan limits full-spectrum regional cooperation.
- China's promotion of BRI and CPEC under SCO umbrellas raises sovereignty concerns for India.
- Overlap with other regional blocs (EAEU, BRICS, Quad) dilutes focus and efficiency.

### Way Forward

- Push for issue-based alignment rather than structural convergence—focus on energy, climate, and anti-terror.
- Deepen bilateral cooperation with Central Asian countries within and outside SCO framework.
- Promote Chabahar–INSTC–Eurasian integration to reduce dependence on Chinese connectivity initiatives.
- Support SCO reform for consensus-based decision-making and greater institutional transparency.

### Relevance for UPSC

GS Paper II – International Institutions, Effect of Policies of Neighboring Countries, India and its Neighborhood  
Essay/GS Paper IV – Ethics in International Diplomacy

### Key Concepts for Value Addition

Term	Description
SCO	Eurasian regional organisation focused on security, economy, and culture
RATS	Regional Anti-Terrorist Structure under SCO
CPEC	China–Pakistan Economic Corridor – India opposes it as it passes through PoK

<b>INSTC</b>	International North–South Transport Corridor – India–Iran–Russia initiative
<b>Central Asia Dialogue</b>	India's parallel engagement track with Central Asian nations

**Summary Note**

**India's engagement with the SCO reflects its pragmatic multilateralism—leveraging platforms for strategic dialogue while preserving sovereignty and autonomy. In an era of fractured geopolitics, India must remain engaged but discerning in how regional blocs align with its core interests and values.**

**RBI's Monetary Policy | Growth vs. Inflation Debate****Pre-Shots**

- On June 6, 2025, the Monetary Policy Committee (MPC) of RBI reduced the repo rate by 50 basis points, bringing it down to 5.50%, citing growth concerns and easing inflation.
- RBI retained a "neutral stance," balancing the twin challenges of reviving private investment and anchoring inflationary expectations.
- Liquidity adjustment measures were announced to support NBFCs and MSMEs, particularly in semi-urban and rural areas.

**Mains Connect**

In June 2025, the Reserve Bank of India (RBI) undertook a critical policy shift by cutting the repo rate—the key policy interest rate—by 50 basis points, reducing it from 6.00% to 5.50%. The move came against the backdrop of sluggish private investment, low capacity utilization, and cooling core inflation, which stood at 4.3% in May 2025. As per the official RBI press release (June 6), the Monetary Policy Committee (MPC) cited the need to support economic revival without compromising inflation management.

Balancing Growth and Inflation:

India's monetary policy faces the classic dilemma of growth vs. inflation. In this case, inflation showed signs of moderation due to:

- A record rabi harvest, easing food prices
- A fall in international crude oil prices
- A slowdown in discretionary spending

However, the GDP growth forecast for FY 2025–26 was revised marginally downward from 6.7% to 6.5%, hinting at investment stagnation and a lack of demand momentum. With manufacturing GVA growth still hovering around 4%, the MPC chose to loosen the monetary stance to stimulate credit and capital formation, especially in the MSME and informal sectors.

Policy Announcements:

- Repo Rate: Reduced by 50 bps to 5.50%
- Reverse Repo Rate: Adjusted to 3.75%
- CRR (Cash Reserve Ratio): Unchanged at 4.5%
- Liquidity Support Measures:
  - ₹50,000 crore refinance window for NBFCs and cooperative banks
  - Special dispensation to extend Emergency Credit Line Guarantee Scheme (ECLGS) to drought-affected areas

**Sectoral Impact:**

- Banking & NBFCs: Increased credit off-take expected, especially in priority sectors
- Real Estate & Infrastructure: Lower cost of capital may revive stalled projects
- MSMEs: Likely to benefit from easier credit conditions, especially for working capital

**Data Crunch**

Indicator	May Value	2025	June Value	2024
Repo Rate	5.50%		6.25%	
Retail Inflation (CPI)	4.3%		5.7%	
GDP Growth Forecast (2025–26)	6.5%		6.7%	
Industrial Production Growth	3.8%		5.0%	

**Ethics Angle (GS-IV)**

You are the RBI Governor facing political pressure to cut rates further to appease industries. However, internal data shows inflation might rebound due to potential El Niño effects.

How would you balance economic and ethical responsibilities to various stakeholders—consumers, industries, and fiscal authorities?

**Prelims MCQs**

- Q1. Which of the following instruments is used by the RBI to control short-term liquidity in the market?
- Statutory Liquidity Ratio
  - Repo Rate
  - Fiscal Deficit
  - Capital Gains Tax

**Answer: B**

- Q2. The MPC of India is responsible for:
- Deciding the repo rate
  - Controlling inflation targeting under flexible inflation regime
  - Determining fiscal deficit
- Select the correct code:
- 1 and 2 only
  - 2 and 3 only
  - 1 and 3 only
  - 1, 2 and 3

**Answer: A**

## India's GDP Estimates FY 2024–25 | Path to the 4th Largest Economy

### Pre-Shots

- India's real GDP growth for FY 2024–25 stood at 6.5% as per provisional estimates released by NSO and validated via PIB.
- India surpassed Germany to become the 4th largest global economy in terms of nominal GDP.
- Growth was primarily driven by strong performance in the services sector, resilient domestic demand, and increased capital formation.

### Mains Connect

On May 30, 2025, the National Statistical Office (NSO) released provisional estimates of national income for FY 2024–25. According to these figures, India's real GDP grew at 6.5%, while nominal GDP crossed ₹331 lakh crore, marking a significant milestone in India's economic trajectory. These numbers were later emphasized in PIB releases and speeches by the Ministry of Finance.

India's ascent to the position of the 4th largest global economy — ahead of Germany — comes amid global economic uncertainty, showcasing the resilience of India's domestic economic architecture.

### Key Contributors to Growth:

- Services Sector:
  - Recorded a 7.9% growth, especially in IT, digital services, and banking.
  - Strong recovery in tourism and hospitality post-pandemic.
- Industry & Manufacturing:
  - Moderate recovery at 5.3%, with capital goods output and infrastructure sectors showing positive trends.
  - PLI (Production-Linked Incentive) schemes played a critical role in reviving investor sentiment.
- Agriculture & Allied Sectors:
  - Registered 3.7% growth due to robust rabi harvests, though vulnerabilities to climate events remain.

### Investment and Consumption Dynamics:

- Gross Fixed Capital Formation (GFCF) stood at 33.2% of GDP, driven by infrastructure push and housing.
- Private Final Consumption Expenditure (PFCE) accounted for over 58% of GDP, reflecting a recovery in rural and urban spending.
- Government capital expenditure rose 17.6%, helping crowd-in private investment in core sectors.

### Challenges Identified:

- High youth unemployment and labour underutilization.
- Regional disparities in growth, particularly rural-urban consumption gaps.
- External vulnerability due to high import dependence for energy and electronics.

### Data Crunch

Indicator	FY 2023–24	FY 2024–25 (Provisional)
Real GDP Growth	7.2%	6.5%
Nominal GDP	₹296 lakh crore	₹331 lakh crore
Per Capita Income	₹1.97 lakh	₹2.15 lakh
Services Sector Growth	9.1%	7.9%
Manufacturing Sector Growth	4.5%	5.3%
Agriculture Sector Growth	4.0%	3.7%

### Ethics Angle (GS-IV)

#### Case Study Prompt:

A government economist is tasked with drafting a policy paper highlighting India's global rise. However, internal data shows regional inequalities and social spending gaps.

Should they present only the macro growth narrative or include grassroots disparities? What values should guide such reporting?

### Prelims MCQs

- Q1. As per provisional estimates for FY 2024–25, which of the following contributed the most to India's GDP growth?
- Agriculture
  - Services
  - Manufacturing
  - Mining

**Answer: B**

- Q2. Consider the following statements:
- Gross Fixed Capital Formation refers to investment in physical assets like infrastructure.
  - Private Final Consumption is the largest component of India's GDP.

Which of the above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

**Answer: C**

## Ubharte Sitaare Programme | Fueling Export-Led Growth through MSMEs

### Pre-Shots

- The "Ubharte Sitaare" scheme, jointly launched by EXIM Bank and the SIDBI, aims to support export-ready MSMEs.
- In June 2025, new credit sanctions were announced under the scheme at the EXIM Bank Trade Conclave.
- It aligns with India's broader vision of becoming a global manufacturing hub and deepening export diversification.

**Mains Connect**

India's MSME sector contributes nearly 45% to total exports and remains the backbone of the economy in terms of employment and innovation. However, MSMEs often face barriers in scaling up for global markets, including lack of access to credit, market intelligence, and technology. To address this, the Ubharte Sitaare Programme (USP) was initiated in 2021 and scaled up in 2025 with a renewed focus on "Champion Sectors".

At the June 24, 2025 Trade Conclave, Finance Minister Nirmala Sitharaman handed over credit sanction letters under the USP. The move signals India's intention to support niche sectors and firms with high export potential.

Salient Features of the Scheme:

- Joint Initiative: Export-Import Bank of India (EXIM) + Small Industries Development Bank of India (SIDBI)
- Objective: Identify and support Indian companies that are:
  - Underperforming but export-capable
  - Exporting but under-leveraged for global expansion
- Support Mechanism:
  - Equity + Debt + Technical Support
  - Hand-holding in market access, regulatory compliance, and branding
- Target Sectors: Engineering goods, pharmaceuticals, textiles, food processing, green energy, defence components

**June 2025 Highlights:**

- ₹1,200 crore sanctioned to 87 companies across 15 states
- 65% of beneficiaries are from Tier-2 and Tier-3 towns
- Special cluster support for exporters in Moradabad (brass), Tiruppur (knitwear), and Surat (diamonds)

**Strategic Importance:**

1. Bridging the Credit Gap: MSMEs face a formal credit deficit of ₹25 lakh crore, as per IFC estimates. USP helps de-risk lending via blended finance.
2. Boosting Export Competitiveness: Supports India's integration into global value chains and enhances product sophistication.
3. Employment Generation: Encourages non-metro job growth and women-led enterprises—aligning with PM's vision of "Vocal for Local, Global Outreach."

**Data Crunch**

Component	Value / Update (June 2025)
Total MSME Export Contribution	45% of total exports
USP Companies Supported So Far	230+
Total Sanctions in June 2025	₹1,200 crore

Tier 2/3 Representation	65% of sanctioned firms
Export Credit Gap (IFC Est.)	₹25 lakh crore

**Ethics Angle (GS-IV)****Case Study Prompt:**

You are a senior bank officer evaluating MSMEs for funding under USP. One application comes from a politically connected firm with weak performance metrics.

Would you approve the loan under pressure? Discuss how impartiality, integrity, and objectivity should be maintained in public financial institutions.

**Prelims MCQs**

Q1. The Ubharte Sitaare Programme is a joint initiative of:

- (a) EXIM Bank and NITI Aayog
- (b) SIDBI and Ministry of Commerce
- (c) EXIM Bank and SIDBI
- (d) RBI and Ministry of MSME

**Answer: C**

Q2. The primary aim of the Ubharte Sitaare scheme is to:

- (a) Provide subsidies for export insurance
- (b) Identify and support underperforming Indian exporters with global potential
- (c) Offer one-time tax exemptions to MSMEs
- (d) Provide skill training for IT workers

**Answer: B**

### National Forensic Infrastructure Enhancement Scheme (NFIES) - Reforming Criminal Justice through Science

**Pre-Shots**

- The National Forensic Infrastructure Enhancement Scheme (NFIES) was approved in June 2025 by the Cabinet Committee on Security with an allocation of ₹2,254 crore.
- The scheme aims to build a robust forensic ecosystem to support scientific, timely, and ethical investigation processes.
- NFIES is a core pillar of India's criminal justice reform agenda, particularly after the enactment of three new criminal laws in 2023–24.

**Mains Connect**

With over 4.9 crore cases pending in Indian courts and less than 3% conviction rates in heinous crimes in some states, the need for scientific and technology-driven investigation mechanisms is urgent. Recognizing this, the Union Cabinet in June 2025 approved the National Forensic Infrastructure Enhancement Scheme (NFIES) to develop state-of-the-art forensic institutions across the country.



## C.C. JUNE & JULY '25

This decision follows the shift to new criminal laws—Bharatiya Nyaya Sanhita (BNS), Bharatiya Nagarik Suraksha Sanhita (BNSS), and Bharatiya Sakshya Adhiniyam (BSA)—which emphasize the role of forensic evidence in investigations, especially for serious crimes like rape, homicide, and organized crime.

### Objectives of NFIES:

1. Expansion of Infrastructure:
  - Build and upgrade Central Forensic Science Laboratories (CFSLS) in 8 regions
  - Develop one National Forensic Research & Training Centre
  - Set up State Forensic Labs (SFLs) in under-served states
2. Capacity Building:
  - Train 25,000 forensic professionals including crime scene examiners, DNA experts, and cybercrime specialists
  - Collaborate with universities and AIIMS-like institutions for forensic education
3. Technology Adoption:
  - Promote AI-driven crime scene reconstruction, 3D facial mapping, and blockchain-based evidence tracking
  - Encourage use of drones and mobile forensic units in remote districts

### Significance:

- Criminal Justice Reform: Forensic evidence will be made mandatory in cases with  $\geq 7$  years of imprisonment under BNSS.
- Speedy Justice: Reduces reliance on eyewitness testimony and police confessions, improving objectivity.
- Women and Child Safety: Helps strengthen investigations under POCSO, Domestic Violence Act, and IPC sections related to sexual crimes.
- Counterterrorism & Cybercrime: NFIES labs will include dedicated divisions for digital forensics, narco-analysis, and bomb residue analysis.

### Data Crunch

Component	Details
Total Outlay	₹2,254 crore (2025–2030)
National-Level Labs to be Set Up	8 CFSLS + 1 National Centre
Forensic Experts to be Trained	25,000+
Mandatory Forensic Role	For crimes > 7 years' sentence
Related Laws	BNSS, BNS, BSA (Effective July 2024)

### Ethics Angle (GS-IV)

You are a forensic examiner handling DNA evidence in a high-profile rape case. Media and political figures are pressuring you to speed up the results.

How will you maintain professional integrity, ensure scientific neutrality, and resist undue influence in the justice process?

### Prelims MCQs

- Q1. The National Forensic Infrastructure Enhancement Scheme (NFIES) is implemented by:
- (a) Ministry of Education
  - (b) Ministry of Home Affairs
  - (c) NITI Aayog
  - (d) Ministry of Science & Technology

**Answer: B**

- Q2. Under the Bharatiya Nagarik Suraksha Sanhita (BNSS), forensic evidence is mandatory in which of the following cases?
- (a) Civil contract violations
  - (b) Crimes punishable with 7 years or more imprisonment
  - (c) Tax evasion
  - (d) Electoral malpractice

**Answer: B**

## India's First Astronaut to the ISS | A New Era in Space Diplomacy

### Pre-Shots

- On 25 June 2025, Group Captain Shubhanshu Shukla became the first Indian astronaut to reach the International Space Station (ISS).
- This marks a milestone for India's human spaceflight capability, aligning with ISRO's broader goals under the Gaganyaan Mission.
- The mission represents a major leap in India's space diplomacy, enabled through collaboration with NASA.

### Mains Connect

India's presence in the global space arena saw a historic breakthrough when Group Captain Shubhanshu Shukla, a test pilot of the Indian Air Force, was launched aboard NASA's Crew Dragon capsule to the International Space Station (ISS). The mission was part of India-US joint cooperation under the US-India Initiative on Critical and Emerging Technologies (iCET).

India has now joined the elite league of countries whose astronauts have participated in ISS expeditions — a major symbolic and strategic success that follows Prime Minister Modi's 2023 US visit, during which the collaboration was finalized.

### Key Objectives of the Mission:

1. Human Spaceflight Training:

## C.C. JUNE &amp; JULY '25

- Indian astronaut trained at NASA's Johnson Space Center in Houston since mid-2024.
  - Prepares ISRO for Gaganyaan 2026, where India will independently send humans to Low Earth Orbit (LEO).
2. Microgravity Experiments:
- Experiments focused on material science, biological systems, and fluid dynamics in space.
  - India contributed experimental modules developed by ISRO and DRDO.
3. Technology Transfer & Diplomacy:
- Strengthens India's presence in global space governance frameworks.
  - Enhances India-US collaboration in satellite navigation, deep space exploration, and planetary defense.

**Strategic and Scientific Significance:**

- Strengthening India's Soft Power: Reinforces India's rise in high-tech sectors and aligns with India@2047 vision for global leadership.
- Foundation for Gaganyaan & Beyond: Validates life-support systems, telemetry, and astronautic protocols for future independent missions.
- Space as a Strategic Domain: Boosts India's credentials in the dual-use (civil-military) space applications and long-term exploration capacity.

**Data Crunch**

Parameter	Details
Astronaut Name	Group Captain Shubhanshu Shukla
Mission Type	ISS Scientific Expedition (joint with NASA)
Launch Vehicle	SpaceX Crew Dragon
Training Location	NASA Johnson Space Center, Houston
Indian Contribution	Onboard science experiments + funding
Future Goal	Gaganyaan human flight (ISRO-led, by 2026)

**Ethics Angle (GS-IV)****Case Study Prompt:**

You are an ISRO mission controller and encounter telemetry failures in mid-mission. Protocol allows delayed public disclosure. However, media leaks are spreading panic.

How do you balance transparency, public confidence, and national interest while maintaining mission confidentiality?

**Prelims MCQs**

- Q1. India's first astronaut to travel to the ISS in 2025 was:
- (a) Rakesh Sharma

- (b) Shubhanshu Shukla  
(c) Sunita Williams  
(d) Rajeev Sharma

**Answer: B**

- Q2. The 2025 astronaut mission to ISS was part of a collaborative program between:

- (a) ISRO and ESA  
(b) ISRO and DRDO  
(c) NASA and ISRO under iCET  
(d) Roscosmos and ISRO

**Answer: C****Financial Inclusion Milestones | The Jan Dhan-Aadhaar-Mobile (JAM) Trinity in 2025****Pre-Shots**

- Over 55.69 crore Jan Dhan accounts have been opened as of June 2025, with more than 66% belonging to rural/semi-urban populations.
- Aadhaar coverage has surpassed 142 crore, enabling seamless Direct Benefit Transfers (DBT) across 450+ government schemes.
- Ayushman Bharat cards crossed 41 crore, with more than 32,000 empanelled hospitals.

**Mains Connect**

In the context of India's socio-economic inclusion, the JAM Trinity—Jan Dhan, Aadhaar, Mobile—continues to redefine citizen–state interaction. The 2025 updates from the Ministry of Finance and the Ministry of Health & Family Welfare confirm that financial inclusion is no longer a theoretical ideal but a functioning architecture delivering real-time benefits.

The Jan Dhan Yojana, launched in 2014, has now evolved into a comprehensive financial security net. It serves as the foundation for several welfare schemes including PM-KISAN, PMAY, PMGKY, and MGNREGA payments, promoting efficiency, accountability, and leakage-free disbursements.

Latest Milestones as per PIB (June 2025):

- 55.69 crore Jan Dhan accounts, with women holding 56% of them
- ₹2.12 lakh crore total balance in Jan Dhan accounts
- Over 38 crore RuPay cards issued
- 142 crore Aadhaar enrollments, covering 99% of adults
- 41.34 crore Ayushman Bharat Health Cards issued

**Achievements Enabled by JAM Architecture:**

1. Direct Benefit Transfers (DBT):
  - Eliminates middlemen, reduces corruption
  - Total DBT disbursement crossed ₹32 lakh crore (2025)
2. Digital Empowerment:
  - Rural India accounts for 58% of UPI transactions
  - Aadhaar-enabled Payment Systems (AePS) used for last-mile cash withdrawal in gram panchayats

**C.C. JUNE & JULY '25****3. Health Integration:**

- Linkage of ABHA (Ayushman Bharat Health Account) with Jan Dhan and Aadhaar for seamless hospital access
- Telemedicine and AI diagnostics scaled up in 156 aspirational districts

**4. Women's Financial Agency:**

- PMJDY-led Self Help Group (SHG) lending crossed ₹1.5 lakh crore
- Integration with Mission Shakti to build economic resilience

**Data Crunch**

Component	Value (as of June 2025)
Jan Dhan Accounts	55.69 crore
Women Account Holders	56%
Aadhaar Coverage	142 crore+
Ayushman Bharat Cards	41.34 crore
DBT Total Disbursed	₹32 lakh crore
Rural UPI Share	58%

**Ethics Angle (GS-IV)****Case Study Prompt:**

You are a district-level officer overseeing DBT implementation. A private bank delays payments in tribal areas due to low profit margins.

How will you ensure equity, access, and ethical financial inclusion without affecting institutional partnerships?

**Prelims MCQs**

Q1. Which of the following correctly defines the JAM Trinity?

- Jan Suraksha, Aadhaar, and Mobile
- Jan Dhan, Aadhaar, and Mobile
- Jan Arogya, Aadhaar, and Mutual Funds
- Jan Kranti, Aadhaar, and Mobile

**Answer: B**

Q2. As of June 2025, what percentage of Jan Dhan account holders are women?

- 33%
- 42%
- 56%
- 68%

**Answer: C****India's Renewable Energy Milestone 2025 | Greening the Grid for Energy Security****Pre-Shots**

- As of June 2025, India's total installed power capacity stands at 476 GW, with 49% from non-fossil sources.
- Solar power now contributes over 110.9 GW, compared to just 2.8 GW in 2014.

- India is on track to meet its updated Nationally Determined Contributions (NDCs) under the Paris Agreement.

**Mains Connect****Context & Background:**

India's energy transition is one of the most ambitious globally. In June 2025, the Ministry of Power and Ministry of New and Renewable Energy (MNRE) released consolidated figures showing a sustained shift towards renewable sources—especially solar and wind—alongside cleaner thermal and hydro capacity.

With growing urbanization, rising peak loads, and commitments under COP27 and the G20 Delhi Declaration, India is targeting a non-fossil capacity of 500 GW by 2030, and a net-zero goal by 2070.

**Installed Power Capacity Breakdown (June 2025):**

- Thermal (Coal, Gas, Diesel): 240 GW
- Solar Energy: 110.9 GW
- Wind Energy: 51.3 GW
- Hydropower: 46.8 GW
- Nuclear: 7.5 GW
- Total Non-Fossil: ~233 GW (~49%)

**Major Policy Anchors:**

- PM-Surya Ghar Yojana:
  - Rooftop solar scheme targeting 1 crore households
  - ₹75,000 subsidy for 3 kW installations, simplified net metering
- Solar Park Scheme:
  - Enabled 50+ solar parks across 15 states
  - De-risked solar investment via plug-and-play infrastructure
- Green Open Access Rules, 2022 (Expanded in 2025):
  - Allowed C&I consumers to source renewable energy directly
  - Facilitated decarbonisation in steel, cement, textile sectors
- National Green Hydrogen Mission (2023):
  - Targets 5 MMT of green hydrogen by 2030
  - Key for export competitiveness and industrial decarbonisation

**Challenges:**

- Grid integration issues and variability
- Land acquisition and biodiversity conflicts
- Need for better storage solutions and hybrid technologies
- Inter-state transmission congestion (Green Energy Corridors II)

**Data Crunch**

Energy Type	Installed Capacity (GW)	Share (%)
Solar	110.9	23.3%

## C.C. JUNE &amp; JULY '25

Wind	51.3	10.8%
Hydro	46.8	9.8%
Nuclear	7.5	1.6%
Thermal	240	50.4%
Total	476	100%

**Ethics Angle (GS-IV)****Dilemma Prompt:**

A solar park project in a tribal belt faces protests due to forest clearance and livelihood loss.

As an IAS officer, how would you balance development, environmental justice, and tribal rights?

**Prelims MCQs**

Q1. As per June 2025 data, the share of non-fossil fuel in India's installed capacity is closest to:

- (a) 35% (b) 42%  
(c) 49% (d) 56%

**Answer: C**

Q2. Which of the following is NOT a part of India's renewable energy targets?

- (a) 500 GW non-fossil fuel capacity by 2030  
(b) Net zero by 2070  
(c) 50% RE share in total generation by 2025  
(d) 5 MMT green hydrogen production

**Remembering the Emergency and Safeguarding Democracy****Pre-Shots**

- 25 June 2025 marked the 50th anniversary of the declaration of Emergency in India (1975–77).
- The day was commemorated as 'Samvidhan Hatya Diwas' (Constitutional Murder Day) to reaffirm India's commitment to democracy and constitutional morality.
- Events held across Delhi and major cities focused on rights, dissent, and the 44th Constitutional Amendment.

**Mains Connect****Historical Context:**

On the night of 25 June 1975, then Prime Minister Indira Gandhi declared a National Emergency under Article 352, citing "internal disturbances." It resulted in widespread suspension of Fundamental Rights, mass arrests of opposition leaders, censorship of the press, and the extension of Parliament without election.

As a response to this authoritarian episode, the 44th Constitutional Amendment (1978) was introduced under the Morarji Desai government to prevent similar misuse of emergency provisions in the future.

**2025 Commemoration Events:**

The Ministry of Information & Broadcasting and Law & Justice jointly organized public talks, exhibitions, and panel discussions on constitutional values and democratic resilience. Civil society also held protests, lectures, and marches with calls to protect India's pluralism.

**Significance of the Emergency in India's Constitutional Development:**

- Curtailment of Fundamental Rights:**
  - Article 19 (freedom of speech) was suspended.
  - Mass preventive detentions under Maintenance of Internal Security Act (MISA).
- Judicial Capitulation:**
  - ADM Jabalpur vs Shivkant Shukla (1976): SC upheld denial of habeas corpus rights — later overruled.
- Rise of Constitutional Safeguards:**
  - 44th Amendment introduced safeguards like:
    - Emergency only under armed rebellion (not internal disturbance)
    - Art. 21 (Right to life) made non-suspendable even during Emergency
    - Parliamentary approval needed for continued Emergency beyond 1 month
- Lessons for Contemporary Governance:**
  - Importance of judicial independence, media freedom, and public protest
  - Role of civil society and opposition as institutional correctives

**Data Crunch**

Provision	Pre-Emergency (Before 1975)	Post-44th Amendment (After 1978)
Emergency Trigger	"Internal Disturbance"	"Armed Rebellion"
Duration Without Approval	2 months	1 month
Right to Life (Art. 21)	Suspended during Emergency	Cannot be suspended even in Emergency
Judicial Review	Not explicitly protected	Strengthened after ADM Jabalpur case

**Ethics Angle (GS-IV)**

As a bureaucrat, you are asked to execute a government directive during an Emergency that restricts the media. How will you uphold the spirit of the Constitution, balance duty to the state, and ensure ethical responsibility to the public?

**Prelims MCQs**

Q1. The 44th Constitutional Amendment removed the term "internal disturbance" from Article 352 and replaced it with:

- |                     |                         |
|---------------------|-------------------------|
| (a) Armed conflict  | (b) Civil war           |
| (c) Armed rebellion | (d) External aggression |

**Answer: C**

Q2. Which Fundamental Right cannot be suspended even during a declared Emergency?

- |                |                |
|----------------|----------------|
| (a) Article 19 | (b) Article 21 |
| (c) Article 25 | (d) Article 32 |

**Answer: B**

## Census 2027 Planning & the Caste Enumeration Debate

**Pre-Shots**

- The Government of India approved Census 2027 to be conducted in two phases using a digital-first approach.
- It will include a caste-based enumeration for the first time since 1931.
- The census is expected to influence welfare schemes, reservations, and centre–state fiscal allocations.

**Mains Connect****Context & Recent Developments:**

The Office of the Registrar General and Census Commissioner announced that the Census 2027 will adopt a two-phase structure—House-listing and Population Enumeration—scheduled for mid-2026 and early 2027 respectively. This comes after delays in Census 2021 due to COVID-19.

What distinguishes this census is the proposed inclusion of caste enumeration, a politically and socially significant decision given that the last comprehensive caste census was conducted in 1931 under British rule.

**Significance of Caste Census:**

1. Welfare and Targeted Policy Design:
  - Enables better targeting of reservations, education, and employment policies.
  - Aligns schemes like Post-Matric Scholarship, PM-Awas Yojana, and Rural Livelihood Missions with actual socio-economic data.
2. Data-Driven Social Justice:
  - Empowers decision-making around OBC, SC, ST categorization and sub-categorization.
  - Helps address creamy layer anomalies and regional backwardness disparities.
3. Federalism & Political Sensitivity:

- States like Bihar, Odisha, and Maharashtra have pushed for their own caste surveys, creating friction with the Centre.
- Raises questions on legislative vs. executive domain, especially under the Concurrent List (Entry 69: Census).

## 4. Digital Census Architecture:

- Use of mobile apps, cloud servers, and Aadhaar seeding
- Linked with National Population Register (NPR) and Socio-Economic Caste Data (SECC) systems
- Biometric-enabled checks to prevent duplication

**Challenges Ahead:**

- Risk of social fragmentation and vote-bank politics
- Data privacy and fear of misuse
- Resistance from some states due to fear of resource redistribution changes

**Data Crunch**

Feature	Census 2011	Census 2027 (Proposed)
Method	Paper-based	Digital-first with manual backup
Caste Enumeration	No (SECC was separate)	Yes (official and centralized)
Number of Phases	2	2 (House Listing + Population)
Technology Use	Minimal	Mobile App + Aadhaar Integration
Budget Allocation (Est.)	₹14,000 crore	₹17,500 crore

**Ethics Angle (GS-IV)**

If asked to design the caste census module in a state that has witnessed past caste violence, how will you balance sensitivity, accuracy, and ethical neutrality in classification and field deployment?

**Prelims MCQs**

Q1. Which constitutional provision empowers the Union government to conduct Census?

- |                               |
|-------------------------------|
| (a) Article 343               |
| (b) Article 356               |
| (c) Entry 69, Union List      |
| (d) Entry 69, Concurrent List |

**Answer: D**

Q2. When was the last official caste-based census conducted in India?

- |          |          |
|----------|----------|
| (a) 1941 | (b) 1961 |
| (c) 1931 | (d) 2011 |

**Answer: C**



## FATF Report 2025 – Strengthening India's Financial Security Architecture

### Pre-Shots

- In June 2025, the FATF (Financial Action Task Force) published its report on global trends in proliferation financing, money laundering, and terrorist financing.
- India retained its compliant status and was praised for improvements in AML/CFT legislation, especially through amendments to the PMLA.
- India advocated for stronger regional compliance in South Asia to counter terror financing networks.

### Mains Connect

#### What is the FATF?

The Financial Action Task Force, established in 1989, is an intergovernmental body that sets international standards to prevent money laundering and terrorism financing. India became a full member in 2010.

#### The June 2025 Plenary focused on:

- Proliferation financing and evasion of financial sanctions
- Regional reviews of countries under grey list scrutiny
- Implementation updates on the Virtual Assets (Crypto) Risk Assessment

#### India's Key Highlights in FATF 2025 Report:

1. Strong AML/CFT Framework:
  - Amendments to the Prevention of Money Laundering Act (PMLA) strengthened asset confiscation.
  - Alignment with UNSCR 1373 obligations on terror financing.
2. Cross-Border Coordination:
  - India urged FATF to designate certain South Asian non-compliant jurisdictions to enable regional anti-terror efforts.
  - Stressed importance of tracing hawala networks, crypto anonymity, and NPO misuse.
3. Public-Private Coordination:
  - RBI, SEBI, and FIU-India issued risk-based guidelines to reporting entities.
  - Suspicious Transaction Reports (STRs) rose by 36% in FY2024-25.
4. Challenges in Implementation:
  - Non-cooperative shell firms and crypto platforms
  - Backlogs in trial and adjudication under PMLA
  - Weak state-level coordination and investigation delays

#### Ethical and Governance Dimensions:

- Need to balance privacy and surveillance in anti-terror laws.
- Risk of selective targeting in financial crimes based on political affiliation.

### Data Crunch

Metric	2023-24	2024-25
STRs (Suspicious Transaction Reports)	~1.5 million	~2.05 million
PMLA Cases Registered	1,166	1,489
Asset Seizures under PMLA (₹ crore)	₹13,720	₹18,940
Grey List Countries (South Asia)	Pakistan, Myanmar	Myanmar, Afghanistan

### Ethics Angle (GS-IV)

You're a top official in FIU-India and receive an anonymous tip about political misuse of money-laundering investigations. How would you ensure institutional integrity, non-partisanship, and whistleblower protection?

### Prelims MCQs

- Q1. Which of the following is correct regarding the FATF?
- It is a UN body under the Security Council
  - It enforces economic sanctions directly
  - It evaluates AML/CFT compliance of member countries
  - It functions under the World Bank
- Answer: C**
- Q2. India became a full member of FATF in:
- 2003
  - 2007
  - 2010
  - 2012
- Answer: C**

## National Metrology Strategy 2025 – Standardizing India's Scientific Precision

### Pre-Shots

- India launched its National Metrology Strategy 2025 in June 2025.
- It aims to modernize and digitally transform measurement systems in industry, agriculture, health, and climate science.
- Implemented by the National Physical Laboratory (NPL) under CSIR, the strategy strengthens India's position in global SI unit standardization.

### Mains Connect

#### What is Metrology?

Metrology is the science of measurement, essential for ensuring quality, safety, and standardization across sectors. It covers physical, chemical, and biological measurements and supports industries ranging from pharmaceuticals to aerospace.

#### Why a National Strategy Now?

India's growing economy and emphasis on Make in India, Digital India, and climate resilience require harmonized,

accurate, and traceable measurements aligned with international standards like the SI system.

### Key Pillars of the National Metrology Strategy:

1. Digital Calibration Infrastructure:
  - Use of blockchain-enabled calibration certificates to reduce fraud in industrial weighing, thermal sensors, and pharma quality control.
2. Quantum Metrology Labs:
  - Establishment of quantum-based time and mass standards to enhance the precision of clocks, GPS, satellite communications, etc.
3. Green Metrology & Climate Science:
  - Precise measurement of GHG emissions, air pollutants, soil chemistry, and climate indicators for compliance with Paris Agreement targets.
4. Medical Metrology Advancements:
  - Uniform calibration of MRI machines, dialysis units, ventilators, etc. to meet WHO and BIS safety norms.
5. Metrology for Trade and Commerce:
  - Standardization across weights, packaging, and product quality ensures consumer protection and export compliance.

### Data Crunch

Sector	Measurement Focus	Key Impact Area
Healthcare	Calibration of medical devices	Patient safety & health diagnostics
Climate Monitoring	GHG tracking & soil metrics	Climate action & carbon trading readiness
Industry	Mass, pressure, voltage, temp.	Manufacturing quality & exports
Agriculture	Moisture, fertilizer content	Crop quality assurance & yield prediction

### Ethics Angle (GS-IV)

As a metrology officer, you're pressured by a private firm to fast-track certification for a faulty industrial device. How would you balance public trust, scientific integrity, and transparency in standards?

### Prelims MCQs

- Q1. The National Physical Laboratory in India works under which parent organization?
- (a) NITI Aayog
  - (b) Department of Science & Tech
  - (c) Ministry of MSME
  - (d) Council of Scientific and Industrial Research (CSIR)

**Answer: D**

- Q2. Which of the following is a function of metrology?

- (a) Weather forecasting
- (b) Standardizing weights and measures
- (c) Administering taxes
- (d) Conducting elections

**Answer: B**

## Global AI Regulation Talks – India's Balanced Approach to Responsible Innovation

### Pre-Shots

- In June–July 2025, India participated in multilateral dialogues on AI safety, governance, and regulation, including the GPAI summit.
- India advocates a "Responsible AI for All" approach — enabling innovation while mitigating misuse risks.
- MeitY released draft guidelines for ethical AI use in public governance, especially for Aadhaar, education, and policing.

### Mains Connect

#### Global AI Governance in 2025:

With AI models like GPT-5, Claude 3, and sovereign LLMs shaping national ecosystems, the call for international norms, audits, and risk-based regulation has grown stronger.

The GPAI Summit held in New Delhi focused on:

- Foundational model accountability
- Bias mitigation in AI systems
- Digital public infrastructure (DPI) standards

#### India's position emphasized:

"AI must empower the smallest stakeholder, not replace them." — Minister of Electronics and IT

#### India's Key Regulatory Stances:

1. **No Blanket Ban:** India opposes the EU-style outright bans or restrictive compliance mandates. It favors sector-wise ethical protocols instead.
2. **Sandboxes for Innovation:** Regulatory sandboxes for AI startups in health, education, and legal tech have been set up in Maharashtra, Karnataka, and Gujarat.
3. **Public Sector AI Ethics Framework:** MeitY's June draft mandates:
  - Bias audits in AI used by police and public utilities
  - Consent architecture for facial recognition systems
  - **Explainability in AI-led welfare delivery (PM-KISAN, Ayushman Bharat)**
4. **Global Interoperability:** Push for AI norms to align with data protection (DPDP Act 2023) and cross-border data flow treaties.
5. **Risks Acknowledged:**
  - Deepfakes in elections
  - AI-powered surveillance misuse
  - Autonomous weaponization concerns raised in UNAI Council

**Data Crunch**

Regulatory Body / Event	India's Contribution / Response
GPAI Summit 2025	Hosted in Delhi; led "AI for DPI" dialogue
G7 Hiroshima AI Process	India called for algorithm transparency
NITI Aayog's #ResponsibleAI Paper	Ethical guidelines for Indian AI ecosystem
MeitY Draft AI Advisory	Bias audit, consent architecture, sandbox

**Ethics Angle (GS-IV)****Prompt:**

You're part of a panel drafting AI ethics guidelines. Should AI be allowed in judicial decision support? How will you safeguard fairness, non-discrimination, and human dignity?

**Prelims MCQs**

Q1. The GPAI (Global Partnership on AI), of which India is a founding member, works under which international umbrella?

- (a) WTO (b) G20  
(c) OECD (d) UNDP

**Answer: C**

Q2. The DPDP Act 2023 primarily deals with:

- (a) Cyber warfare  
(b) Digital health records  
(c) Protection of personal data  
(d) Surveillance by intelligence agencies

**Answer: C****Jal Shakti Mission & River Linking – A Blueprint for Water Security****Pre-Shots**

- In July 2025, the Ministry of Jal Shakti released the Updated River Interlinking Status Report and Phase II of Jal Shakti Abhiyan.
- Key projects under the National Perspective Plan—such as Ken–Betwa and Par–Tapi–Narmada—saw major implementation milestones.
- India is aiming for a pan-Indian water grid to address growing spatial and temporal water stress.

**Mains Connect****India's Water Crisis in Numbers:**

- 54% of India faces high to extremely high water stress (World Resources Institute, 2023).
- 80% of rural domestic needs and 70% of agriculture needs are groundwater dependent.
- Aquifer depletion and erratic rainfall have deepened inter-state disputes.

**National River Linking Project (NRLP):**

The NRLP, conceptualized by the National Water Development Agency (NWDA), involves 30 river link projects, aiming to:

- Transfer surplus water from Himalayan rivers to water-deficient peninsular regions.
- Reduce recurring floods in Brahmaputra–Ganga systems and droughts in Deccan.

**Current Status (July 2025):**

- Ken–Betwa Link (₹44,605 cr): DPR cleared, forest clearance Stage I done, 30% dam work initiated.
- Par–Tapi–Narmada Link: On hold due to tribal opposition in Gujarat.
- Godavari–Krishna–Pennar Link: Fast-tracked under Phase II, Tamil Nadu and Andhra agreements signed.

**Jal Shakti Abhiyan (Catch the Rain Campaign):**

- Phase II launched on 1 July 2025.
- 10 crore soak pits, recharge wells, rooftop harvesting units constructed.
- GIS-based water audit tool rolled out in 250 districts.

**Key Concerns:**

- Ecological Fragility: River linking may disrupt biodiversity, alter monsoon-fed ecosystems, and displace vulnerable communities.
- Inter-state Federalism Issues: Disputes between states (e.g., Karnataka–Tamil Nadu, Punjab–Haryana) over water-sharing delay coordination.
- Climate Change Mismatch: Hydrological surplus assumptions outdated due to shifting rainfall patterns.

**Data Crunch**

River-Link Project	Status (July 2025)	Estimated Cost (₹ Cr)	States Involved
Ken–Betwa	Stage I begun	₹44,605	MP, UP
Godavari–Krishna–Pennar	Fast-tracked DPR	₹35,000+	Andhra, Telangana, TN
Par–Tapi–Narmada	Delayed (tribal protest)	₹10,211	Gujarat, Maharashtra

**Ethics Angle (GS-IV)**

You're the District Collector of a region where a river-link project requires displacement of tribal populations. How will you ensure informed consent, sustainable rehabilitation, and cultural sensitivity?

**Prelims MCQs**

Q1. Which agency is responsible for preparing Detailed Project Reports (DPRs) for the NRLP?

- (a) Central Water Commission  
(b) National Green Tribunal  
(c) NITI Aayog  
(d) National Water Development Agency

**Answer: D**

Q2. The Ken–Betwa River linking involves which of the following rivers?

1. Betwa
2. Yamuna
3. Chambal
4. Ken

Select the correct code:

- (a) 1 and 2                      (b) 1 and 4  
(c) 2 and 3                      (d) 3 and 4

**Answer: B**

## Indo-Pacific Maritime Dialogue 2025 – India's Strategic Balancing Act

### Pre-Shots

- In July 2025, India hosted the 3rd Indo-Pacific Maritime Dialogue in Goa, co-chaired with France and Australia.
- The dialogue focused on freedom of navigation, maritime infrastructure, and climate resilience.
- India's vision of "SAGAR" (Security and Growth for All in the Region) gained renewed global traction.

### Mains Connect

#### Context and Strategic Importance:

The Indo-Pacific has emerged as a central geostrategic theatre, witnessing:

- China's assertive maritime expansion in South China Sea
- Rising non-traditional threats: piracy, illegal fishing, climate-induced migration
- Economic chokepoints: Strait of Malacca, Lombok Strait, Andaman Sea

India is responding with a calibrated mix of strategic autonomy and multilateralism.

#### Key Outcomes of the July 2025 Dialogue:

##### 1. Maritime Domain Awareness (MDA):

- Enhanced cooperation between India's IFC–IOR and ASEAN nations.
- India to provide real-time ship-tracking intel to island nations under Mission SAGAR-VI.

##### 2. Blue Economy & Climate Resilience:

- Joint projects for coral reef restoration, sustainable fishing, and ocean plastic reduction.
- France and India pledged funds to support Pacific Islands facing climate threats.

##### 3. Logistics and Naval Interoperability:

- Frameworks for common port access, fuel sharing, and joint drills (e.g. VARUNA, AUSINDEX).
- A roadmap for a Maritime Capacity Building Fund targeting Indian Ocean littoral states.

##### 4. Legal Frameworks for UNCLOS Compliance:

- Pushback against "gray-zone" tactics and arbitrary maritime claims.

- India reiterated its support for a rules-based international order in open seas.

#### India's Maritime Strategy:

- QUAD naval exercises have expanded to include humanitarian and disaster response.
- SAGARMALA & Deep Ocean Mission linked with regional collaboration.
- Naval presence strengthened at Andaman & Nicobar TRIAD, Duqm (Oman), and Mauritius Coastal Surveillance Radar Chain.

### Data Crunch

Partner Country	Joint Exercise	Key Focus Area
France	VARUNA	Naval combat interoperability
Australia	AUSINDEX	Anti-submarine warfare
Indonesia	SAMUDRA SHAKTI	Amphibious operations & coordination
USA	MALABAR	Carrier group operations

### Ethics Angle (GS-IV)

You are posted as a naval attaché in an island nation vulnerable to Chinese coercive diplomacy. How will you promote India's goodwill while respecting local sovereignty, strategic neutrality, and ethical diplomacy?

### Prelims MCQs

Q1. The IFC–IOR operated by the Indian Navy is located at:

- (a) Mumbai
- (b) Port Blair
- (c) Gurugram
- (d) Chennai

**Answer: C**

Q2. "SAGAR" in India's maritime policy stands for:

- (a) Strategic Autonomy for Great Asian Region
- (b) Security and Growth for All in the Region
- (c) Secure Assets and Government Accountability Region
- (d) South Asian Group for Aquatic Resources

**Answer: B**

## Urban Flooding & Disaster Preparedness – Lessons from Mumbai and Chennai (2025)

### Pre-Shots

- Mumbai (June 28) and Chennai (July 12) recorded unprecedented urban floods, displacing 40,000+ people.
- NDMA warned of compound climate risks due to sea-level rise, poor drainage, and extreme rainfall.
- New municipal mandates under the Urban Resilience Framework 2025 were rolled out.

**Mains Connect****The Urban Flooding Crisis:**

Urban floods are now an annual reality in Indian metros due to:

- Unplanned urbanisation: Built-over wetlands, poor stormwater infrastructure
- Climate shocks: IMD has warned of 20% rise in extreme rainfall events
- Infrastructure failure: Outdated drainage, clogged nullahs, illegal encroachments

**Case Studies – 2025 Events:****1. Mumbai Floods (June 28):**

- 220 mm rainfall in 6 hours (Santacruz Station)
- 40% of stormwater drains over 60 years old
- Loss of ₹2,400 crore in economic activity in 48 hrs

**2. Chennai Flash Floods (July 12–14):**

- 300 mm rainfall in 2 days
- Adyar and Cooum rivers breached danger marks
- Mass evacuation in Saidapet, Velachery, and T Nagar

**NDMA Response and Gaps:**

- Urban Flood Zonation Maps released for 100 cities
- Drainage audit and sponge city concept introduced (first phase: Pune, Surat, Bhubaneswar)
- Lack of inter-departmental coordination, no real-time flood alerts in Tamil Nadu until 2 hours post-event

**Long-Term Framework: Urban Resilience 2025**

1. Sponge Cities: Encourage permeable pavements, green corridors, urban lakes revival.
2. Blue–Green Infrastructure: Integrated planning of parks, canals, retention ponds.
3. Digital Early Warning Systems: Integration of AI-based rainfall prediction with municipal alerts.
4. City Resilience Index: MoHUA to rate Smart Cities on flood readiness starting Aug 2025.

**Data Crunch**

City	Rainfall (in mm)	Displaced People	Key Issue
Mumbai	220 mm in 6 hrs	~18,000	Drain blockage, low-lying areas
Chennai	300 mm in 2 days	~22,000	River breach, infrastructure gap

**Ethics Angle (GS-IV)**

You are the Municipal Commissioner of a Smart City. You must decide between approving a profitable housing project on a natural floodplain or preserving it as a buffer zone. How will you balance public interest, environmental ethics, and accountability?

**Prelims MCQs**

Q1. Which of the following is true about the Sponge Cities concept?

- It involves desalination plants
- It uses permeable surfaces and natural drainage
- It bans rainwater harvesting
- It is applicable only in Himalayan cities

**Answer: B**

Q2. The City Resilience Index is developed by:

- NDMA
- IMD
- Ministry of Housing and Urban Affairs
- CSIR

**Answer: C****Agri-Exports and the Global Millet Market – India's 2025 Boost****Pre-Shots**

- In July 2025, India's agri-exports crossed the \$60 billion mark, with millet exports registering a record growth of 33% YoY.
- India emerged as a global leader in the millet economy, following the success of the International Year of Millets (2023) and subsequent national campaigns.
- Major trade deals were signed with the UAE, Kenya, and European Union, expanding India's nutri-cereal diplomacy.

**Mains Connect****India's Agri-Export Surge:**

- Total agri-export value (FY 2024–25): \$61.3 billion
- Top commodities: Basmati rice, sugar, marine products, and millets
- Millets alone accounted for \$1.5 billion, with shipments to 95+ countries

**Factors Behind Millet Export Boom:**

1. Institutional Push:
  - APEDA created millet-specific export hubs in Rajasthan, Karnataka, and Maharashtra.
  - Millet Export Promotion Council (MEPC) launched in March 2025.
2. Product Diversification:
  - Value-added products like millet cookies, noodles, breakfast cereals led the exports.
  - Organic and GI-tagged varieties (e.g., Ragi from Odisha, Bajra from Haryana) saw higher demand.
3. Global Nutrition Transition:
  - Rising global preference for gluten-free, high-fiber diets, especially in North America and Europe.
  - Collaborations with FAO, IFAD, and GAIN for knowledge sharing.



## C.C. JUNE &amp; JULY '25

## Policy Initiatives:

Scheme/Policy	Purpose
PM-FME Scheme	Grants to millet-based food startups
ODOP (One District One Product)	Focus on millet clusters (e.g., Mandya, Ananthapur)
Agriculture Infrastructure Fund	Helped create millet-processing cold chains
India-UAE MoU on Agri-Trade (2025)	Enhanced access to Gulf food markets

## Challenges to Sustained Growth:

- Logistics bottlenecks: Inland container depots for perishables still underdeveloped.
- Quality assurance: Need for global HACCP/ISO certification for millet processors.
- Price volatility: Driven by erratic monsoon and market speculation.

## Data Crunch

Parameter	Value (FY 2024-25)
Total Agri Exports	\$61.3 billion
Millet Export Value	\$1.5 billion
Export Growth (Millets)	33% year-on-year
Top Importers	UAE, USA, Netherlands, Kenya

## Ethics Angle (GS-IV)

## Prompt:

You are part of a trade mission negotiating millet exports to Africa. How will you ensure India's food diplomacy aligns with ethical trade, doesn't harm local farmers, and enhances South-South cooperation?

## Prelims MCQs

Q1. Which of the following organizations was launched to promote millet exports in India?

- (a) NABARD (b) MEPC  
(c) TRIFED (d) FSSAI

**Answer: B**

Q2. Under which scheme does the Indian government support millet-based food processing startups?

- (a) MIDH (b) ODOP  
(c) PM-FME (d) MSP Procurement Scheme

**Answer: C**

## Renewable Energy Milestone – Solar, Wind &amp; Green Hydrogen Updates

## Pre-Shots

- India's installed renewable energy capacity hit 260 GW in July 2025, excluding large hydro.

- The Ministry of New and Renewable Energy (MNRE) reported solar energy crossing 110 GW and wind at 52 GW, making India the 4th largest RE generator globally.
- New policy announcements were made under Green Hydrogen Mission Phase II, targeting 5 MMT (million metric tonnes) production by 2030.

## Mains Connect

Renewables: India's Twin Goals – Climate & Growth

## India's clean energy transition aligns with:

- Panchamrit targets (Glasgow COP26): 500 GW non-fossil capacity by 2030
- Net Zero commitment by 2070
- Socio-economic aims: job creation, energy access, export growth in RE technology

## Key Highlights (June–July 2025):

- Solar Energy Growth
  - Installed capacity: 110.9 GW
  - Rajasthan (19.3 GW), Gujarat (11.8 GW), and Karnataka lead solar additions.
  - 12 new solar parks inaugurated under Ultra Mega Solar Power Projects.
- Wind Power Expansion
  - Wind capacity: 52.3 GW as of July 2025
  - Offshore wind pilot (Tamil Nadu coast) launched with support from Denmark
- Green Hydrogen Mission – Phase II Launch
  - Target: 5 MMT green hydrogen production by 2030
  - Allocation: ₹36,000 crore approved under SIGHT Scheme
  - Use in fertilizer, steel, and long-haul mobility sectors emphasized
- International Partnerships
  - India-EU Green Deal Roadmap signed
  - ISA (International Solar Alliance) promoted grid-sharing with Africa, SE Asia

## Challenges and Structural Bottlenecks:

- Land acquisition delays for RE parks
- Grid integration issues: Intermittent supply, limited storage infrastructure
- Policy instability in state-wise net metering guidelines

## Data Crunch

Parameter	Value/Status (July 2025)
Total RE Capacity (excl. hydro)	260 GW
Solar Power	110.9 GW
Wind Power	52.3 GW
Green Hydrogen Production Target	5 MMT by 2030
India's Rank (RE generation)	4th globally (IRENA)

**Ethics Angle (GS-IV)****Prompt:**

As an energy advisor, how would you balance the ethics of just transition, ensuring tribal lands are not exploited while promoting green energy expansion for national goals?

**Prelims MCQs**

Q1. As per July 2025 data, India's rank in global renewable energy generation is:

- (a) 2<sup>nd</sup> (b) 3<sup>rd</sup>  
(c) 4<sup>th</sup> (d) 5<sup>th</sup>

**Answer: C**

Q2. The SIGHT scheme is associated with which of the following?

- (a) Solar panel subsidy  
(b) Wind energy storage  
(c) Green hydrogen production  
(d) Thermal efficiency audits

**Answer: C**

## Digital Personal Data Protection Act – Implementation Insights and Challenges (2025)

**Pre-Shots**

- On July 3, 2025, the Digital Personal Data Protection (DPDP) Act, 2023 came into full effect across India.
- The Data Protection Board of India (DPBI) began operations with quasi-judicial powers to penalize violations and direct remedial actions.
- The implementation process exposed critical gaps in infrastructure, digital literacy, and compliance mechanisms.

**Mains Connect****Why is the DPDP Act a Landmark?**

- Establishes consent-based data governance with penalties up to ₹250 crore.
- Applies to digital data of Indian citizens, processed by any entity within or outside India.
- Introduces:
  - Consent managers to help users manage their data permissions.
  - Children's data safeguards and data minimization principles.
  - Cross-border data transfer norms with government-notified countries.

**Implementation Milestones (June–July 2025):**

- July 3: Notification of full implementation.
- July 5: DPBI begins accepting complaints on grievance redress portals.
- July 15: Government released list of "Trusted Countries" for data transfer (incl. EU, Singapore, South Korea).
- July 25: Public digital literacy campaign launched – "Mera Data, Mera Adhikar"

**Key Implementation Challenges**

Area	Issue
SME Compliance	Lack of infrastructure, legal knowledge
State Govt Integration	Departments unprepared for data audits or consent logs
Public Awareness	Low literacy on digital rights among rural users
Cross-border Enforcement	No global reciprocity mechanisms yet

**Ethics Angle (GS-IV)****Prompt:**

As a senior civil servant, how would you balance the right to privacy, state security, and citizen convenience under the DPDP framework, especially while dealing with welfare databases?

**Data Crunch**

Provision	Description
Maximum Penalty	₹250 crore (per incident)
Time for Grievance Redress	7 days (initial), 15 days (review by DPBI)
Consent Withdrawal	Mandatory provision via one-click interface
Trusted Countries List	14 as of July 2025
Children's Data Rule	No behavioral targeting or algorithmic profiling

**Prelims MCQs**

Q1. The "Data Protection Board of India" is:

- (a) An executive wing under MeitY  
(b) A constitutional body  
(c) A quasi-judicial authority under DPDP Act  
(d) A parliamentary committee

**Answer: C**

Q2. Under the DPDP Act, which of the following is a valid ground for cross-border data transfer?

- (a) Default with any country  
(b) Transfer to countries notified by the Union Government  
(c) Transfer only to countries in UN Charter  
(d) No cross-border transfer allowed

**Answer: B**

## Women's Reservation Bill – Implementation Roadmap and Challenges (Post-Enactment Analysis)

**Pre-Shots**

- Passed in September 2023 as the Constitution (106th Amendment) Act, the Women's Reservation Bill mandates 33% reservation for women in Lok Sabha and State Assemblies.

## C.C. JUNE & JULY '25

- In June 2025, the Ministry of Law & Justice issued an update: implementation will begin after the 2027 census and delimitation process, as mandated.
- This sparked fresh debate on the timeline, feasibility, and genuine commitment to gender inclusion in politics.

### Mains Connect

#### Background of the Bill:

- Seeks to reserve 1/3rd seats in Lok Sabha, State Legislative Assemblies, and Delhi Assembly for women.
- Reservation will apply for 15 years, extendable by constitutional amendment.
- Seats will be rotated in each election cycle.

#### Implementation Roadmap (June–July 2025 Developments)

1. Census Notification (2027)
  - Registrar General of India (RGI) confirmed preparatory work for Census 2027 with caste and gender disaggregation.
2. Delimitation Exercise (Post-Census)
  - Delimitation Commission will redraw electoral boundaries based on new population data.
3. Legal Directives
  - A petition filed in SC seeks immediate implementation, arguing the 2027 census clause delays justice.
4. State Engagement
  - Union Government held consultations with State Election Commissions on local-level women reservation alignment.

### Challenges in Operationalisation

Area	Concern
Constitutional Delay	2027 Census + Delimitation = Implementation unlikely before 2029 polls
Caste/Gender Overlap	No sub-quota for SC/ST/OBC women—concerns of tokenism
Political Resistance	Regional parties wary of seat reallocation and power shifts
Bureaucratic Lag	Lack of preparatory training for women leaders in backward districts

### Data Crunch

Indicator	Value/Status (as of 2025)
Women MPs in 17th Lok Sabha	78 out of 543 (14.3%)
Global Rank (IPU Women in Parliament)	144 out of 190+ countries

Panchayat Reservation	33% (extended to 50% in 20 states)
Projected Seats Reserved (Lok Sabha)	181 (1/3rd of total)

### Ethics Angle (GS-IV)

You are tasked with implementing capacity-building for future women MLAs in a backward district. How would you ensure ethical empowerment without elite capture or bureaucratic lip service?

### Prelims MCQs

Q1. The Constitution (106th Amendment) Act pertains to:

- One Nation One Election
- National Judicial Commission
- Women's Reservation in Legislatures
- Panchayati Raj Reforms

**Answer: C**

Q2. The implementation of the Women's Reservation Act is contingent upon:

- Presidential Assent
- Completion of 2027 Census and Delimitation
- State Ratification
- Amendment to the Representation of People Act

**Answer: B**

## Bharat Semiconductor Mission – July 2025 Progress Report

### Pre-Shots

- In July 2025, the Ministry of Electronics and Information Technology (MeitY) released the second annual progress report of the India Semiconductor Mission (ISM).
- The ₹76,000 crore production-linked initiative, launched in 2021, has seen major ground-level developments in Dholera (Gujarat), Sanand, and Mysuru.
- Key updates include the finalization of fabrication plant partners, skilled manpower initiatives, and foreign collaborations.

### Mains Connect

#### Semiconductors: Why Critical for India?

1. Backbone of digital economy: used in defence, telecom, IoT, 5G, mobility.
2. India's imports of semiconductors in FY24: \$25 billion+
3. Vulnerabilities in global chip supply chains (e.g., Taiwan–China tensions) create strategic urgency.

### July 2025 Key Developments

Initiative/Update	Details
Dholera Fab Progress	Groundbreaking completed; ISMC–Tower Semi JV to start fabrication in 2026

Micron Sanand Plant	Cleanroom equipment installed; packaging operations start Jan 2026
Mysuru OSAT Unit	Tata-Renesas JV finalised for chip assembly and testing
Skilling Portal	Launched jointly with AICTE; 1.2 lakh students enrolled in chip design
FDI Inflows	Over \$2.5 billion confirmed from U.S., Israel, and Japan

### Structural and Strategic Challenges

- Water & Power Supply: Chip fabs need uninterrupted ultra-pure water and high energy input.
- Skilled Workforce Deficit: Chip design and process engineers in short supply.
- Import Dependence for Raw Materials: High reliance on Taiwan, Japan for silicon wafers and specialty gases.
- Geopolitical Risks: Global realignment of semiconductor supply chains requires strategic hedging.

### Data Crunch

Parameter	Status (as of July 2025)
Total Outlay for ISM	₹76,000 crore
Fab Projects Approved	3 (Micron, ISMC-Tower, Tata JV)
Total Jobs Expected	85,000+ (direct & indirect)
India's Global Rank (Design Talent)	2nd (after U.S.)
Chip Import Dependency	~100% for logic chips (2024)

### Ethics Angle (GS-IV)

#### Prompt:

You are a NITI Aayog policy adviser. How will you ethically resolve the dilemma between offering huge state subsidies for private chip firms vs. investing in public R&D institutions?

#### Prelims MCQs

- Q1. Which of the following cities hosts the ISMC-Tower Semiconductor Fab Project?
- Bengaluru
  - Dholera
  - Pune
  - Sanand

**Answer: B**

- Q2. The India Semiconductor Mission (ISM) comes under which Ministry?
- Ministry of Science and Technology
  - Ministry of Commerce and Industry
  - Ministry of Electronics and IT
  - NITI Aayog

**Answer: C**

## India's Climate Finance Architecture – Progress, Challenges & Global Role (July 2025)

### Pre-Shots

- On 1 July 2025, the Ministry of Environment, Forest and Climate Change (MoEFCC) submitted its updated climate finance roadmap to the Cabinet Committee on Economic Affairs (CCEA).
- India reaffirmed its commitment to mobilizing ₹3.5 lakh crore over the next five years for green energy, climate adaptation, and disaster-resilient infrastructure.
- The move is in line with India's NDC targets, submitted under the Paris Agreement, and comes ahead of COP31 preparations.

### Mains Connect

#### What is Climate Finance?

Climate finance refers to local, national, or transnational financing—drawn from public, private, and multilateral sources—that supports mitigation and adaptation actions to address climate change.

#### India's Commitments under UNFCCC & Paris Agreement

- Reduce emissions intensity by 45% by 2030 (from 2005 levels).
- Increase non-fossil energy capacity to 500 GW by 2030.
- Achieve net-zero emissions by 2070.

#### Recent Developments (June–July 2025)

Initiative	Description
Green Credit Programme (2023–25)	Mobilized ₹18,000 crore for afforestation and ecosystem services
Sovereign Green Bonds	₹16,000 crore raised; second tranche launched in July 2025
National Adaptation Fund (NAFCC)	Budget enhanced to ₹12,500 crore for 2025–2030 cycle
State-Level Green Budgets	19 states submitted climate-responsive budgets by June 2025

#### Challenges in India's Climate Finance Ecosystem

Challenge	Details
Institutional Fragmentation	Multiple agencies with overlapping mandates (MNRE, MOEFCC, NITI Aayog)
Private Sector Reluctance	Long payback periods, policy uncertainties, low carbon credit prices
Lack of MRV Systems	Measurement, Reporting, and Verification (MRV) systems underdeveloped
Global Injustice	Developed nations have missed \$100 billion/year pledge to Global South

**India's Global Climate Finance Diplomacy**

- Advocated "Common But Differentiated Responsibilities (CBDR)" at G20 and BRICS forums.
- Pushed for recognition of lifestyle-based solutions (LiFE Mission) as fundable climate strategies.
- Hosting South-South Climate Fund Consultation in October 2025 in Delhi.

**Data Crunch**

Indicator	Status (as of July 2025)
India's share of global climate finance	< 6%
Green bond market size (India)	₹43,000 crore cumulative since 2021
Adaptation finance share (vs. mitigation)	25% adaptation, 75% mitigation
Global climate finance target	\$100 billion/year (missed every year)

**Ethics Angle (GS-IV)**

You're on a climate finance allocation committee. A district diverts green funds toward a dam project citing flood control. How would you ensure ethical fund use while addressing both climate and local needs?

**Prelims MCQs**

- Q1. Which Indian institution issues Sovereign Green Bonds?
- NABARD
  - SEBI
  - Reserve Bank of India
  - Ministry of Power
- Answer: C**
- Q2. The term "MRV" in climate finance refers to:
- Monetary Redistribution Vehicle
  - Monitoring, Reporting, Verification
  - Mutual Resource Valuation
  - Measured Risk Value
- Answer: B**

**India's Defence Tech Revolution – Indigenous UAVs, Quantum R&D & Start-up Integration****Pre-Shots**

- In July 2025, the Ministry of Defence unveiled India's first integrated Defence Tech Roadmap (DTR-2040).
- Major breakthroughs included the Maheen UAV system, a DRDO-TATA collaborative drone, and expansion of the Quantum Military Computing Framework (QMCF).

- India's private defence start-up ecosystem crossed ₹20,000 crore in valuation, supported by iDEX (Innovations for Defence Excellence).

**Mains Connect****Why is Defence Technology Critical Now?**

1. Geostrategic Risks: China's AI-enabled warfare, cyber threats, and drone incursions.
2. Make in India Defence Push: India imports ~60% of its defence needs; goal is 50% indigenisation by 2027.
3. Dual-Use Innovations: Defence innovations also fuel civilian sectors (e.g., communication, AI, GPS).

**Key Highlights**

Initiative Milestone /	Description
Maheen UAV Series Launched	High-altitude drone (up to 14,000 ft); deployed along LAC & LoC
Quantum Military Lab Setup in Hyderabad	First of its kind for quantum-secured battlefield communication
iDEX Crossing 400 Start-ups	DRDO and SIDM collaborate to fast-track prototypes for drones, missiles
Defence Innovation Sandbox (DIS)	Announced in Pune for open testing of military A.I. & surveillance systems
Women in Defence Start-ups Scheme	60 new women-led defence tech start-ups onboarded by July 2025

**Challenges in India's Defence Tech Push**

Challenge	Explanation
R&D Investment Gaps	India invests ~0.7% of GDP in R&D vs 2.8% (China), 3.5% (USA)
Delays in Tech Transfer (ToT)	DPSUs slow in transferring IP to start-ups or MSMEs
Export Market Access	Regulatory bottlenecks hamper India's defence exports
Lack of War Theatre Testing	Several prototypes remain untested in real conflict simulations

**Global Comparison**

Country	Defence Focus	Tech	Key Achievement
USA	AI, UAVs, defence	cyber	MQ-9 Reaper, Palantir battlefield AI



China	Quantum, autonomous warfare	Quantum radar + drone swarms
Israel	Surveillance, border tech	Iron Dome, Rafael UAVs
India (2025)	Drones, Quantum, Start-up push	Maheen UAV, QMCF, iDEX

**Data Crunch**

Indicator	Status (as of July 2025)
Defence Start-up Count (iDEX)	410+
Targeted Indigenous Content (2027)	50%
Quantum Lab Fund Allocation	₹850 crore
UAV Deployment Zones	9 LAC sectors, 3 naval coastal grids
Women in Defence Start-ups	15% of new onboarding (2025)

**Ethics Angle (GS-IV)**

You are heading the Defence Procurement Board. A cheaper foreign UAV model outperforms an Indian prototype. How will you balance national innovation goals with real-time national security priorities?

**Prelims MCQs**

- Q1. The iDEX initiative is implemented by:
- NITI Aayog
  - Department of Defence Production
  - DRDO
  - Ministry of Science and Technology

**Answer: B**

- Q2. The "Maheen UAV" is primarily designed for:
- Cargo transport
  - Medical evacuation
  - High-altitude reconnaissance
  - Urban policing

**Answer: C**

## The India–Africa Partnership 2025 – Strategic Priorities, Development Projects & Global South Agenda

**Pre-Shots**

- In July 2025, India and the African Union convened the 4th India–Africa Trade and Investment Dialogue in Addis Ababa.

- India announced a \$6 billion Line of Credit and 75 new development projects under Team India–Africa 2030 Vision, reinforcing its Global South leadership.
- Discussions spanned digital public infrastructure (DPI), defence training, education, and health systems cooperation.

**Mains Connect****Why Africa Matters for India**

- Geostrategic Location: Red Sea and Indian Ocean chokepoints influence maritime security and energy trade.
- Raw Materials & Markets: Source of critical minerals (cobalt, lithium), market of 1.3+ billion people.
- Global South Leadership: Africa's support crucial for multilateral reforms (e.g., UNSC, WTO).

**India–Africa Engagement Highlights (July 2025)**

Initiative Development /	Details
\$6 billion Line of Credit	Focus on infrastructure, health, energy projects in 18 African nations
75 Development Projects Launched	Agriculture, skill-building, digital services in 25 countries
Pan-African e-Network 2.0 (PAeN)	Expanded to deliver AI-based telemedicine & distance education
Defence & Maritime Cooperation	Joint naval patrols, training of African peacekeeping troops
Africa Quad (I2U2+Africa)	India-Israel-UAE-US initiative extended to East African coastline

**India's Strategic Objectives**

Objective	Strategic Action
Countering China's BRI	Offers transparent and demand-driven aid (vs. debt-trap diplomacy)
Securing Sea Lanes	Indian Ocean naval drills, port development (e.g., Chabahar–Djibouti linkage)
Tech Diplomacy	Sharing of CoWIN platform, UPI, eVidya tools
South–South Solidarity	Coalition building for WTO reforms, climate finance equity

**Challenges in India–Africa Cooperation**

Challenge	Explanation
Delivery Delays	Slow implementation of announced LoCs and projects
Chinese Dominance	China's trade with Africa > \$280 billion vs. India's ~\$100 billion
Cultural & Language Barriers	Limits deeper people-to-people ties in Francophone/Arabic Africa

Institutional  
CoordinationFragmentation between MEA, Exim  
Bank, private players**Data Crunch**

Metric	Status (as of July 2025)
Indian Investment in Africa	\$80+ billion cumulative since 2001
African Students in Indian Institutions	42,000+
Indian Missions in Africa	43 embassies/high commissions
LoCs Operationalized (2020–25)	155 projects in 32 countries
Total Bilateral Trade (2024–25)	~\$97 billion

**Ethics Angle (GS-IV)****Prompt:**

You are a development attaché at the Indian High Commission in Kenya. A local NGO alleges Indian-funded tech schools are ignoring local customs and languages. How do you balance India's soft power projection with cultural sensitivity?

**Prelims MCQs**

Q1. The Pan-African e-Network (PAeN) is primarily aimed at:

- Defence procurement
- Telemedicine and e-learning
- Weather forecasting in Africa
- Trade facilitation for Indian exports

**Answer: B**

Q2. Which of the following is correct regarding India's Africa engagement?

- India is Africa's largest trading partner.
- Africa hosts the largest number of Indian LoC projects globally.
- PAeN offers tele-education through Indian universities.

Choose the correct code:

- 1 only
- 2 and 3 only
- 3 only
- 1, 2, and 3

**Answer: B**

## Global Tiger Summit 2025 – India's Conservation Leadership and Emerging Challenges

**Pre-Shots**

- India hosted the Global Tiger Summit 2025 in Mysuru (July 2025), marking 15 years since the landmark St. Petersburg Declaration (2010).

- The summit declared India as home to 73% of the global wild tiger population, revalidating its leadership in big cat conservation.
- It also highlighted pressing concerns like habitat fragmentation, human–tiger conflict, and climate stress on tiger corridors.

**Mains Connect****Why Tigers Matter for India's Ecological Policy**

- Keystone Species:** Tigers regulate prey populations and maintain ecosystem health.
- Conservation Umbrella Effect:** Protecting tigers conserves entire forest ecosystems and biodiversity.
- International Image:** India's leadership in tiger numbers supports its Global South ecological diplomacy.

**Highlights from Global Tiger Summit 2025**

Key Outcome	Description
India Tiger Report 2025 Released	Estimated 3,682 tigers, a 6.7% increase from 2018
Global Big Cat Alliance (GBCA)	24 countries reaffirmed support; India pledged ₹1,000 crore over 5 years
New Corridors Declared	8 new eco-sensitive tiger corridors in Central India & Northeast
e-DNA Monitoring Guidelines	National Tiger Conservation Authority (NTCA) released non-invasive tracking protocols
Carbon Credit Integration	Pilot project launched to monetize protected tiger habitats as carbon sinks

**Achievements in Tiger Conservation**

Parameter	Value (2025)
Tiger Population	3,682 (73% of world total)
Tiger Reserves	54 across 18 states
Protected Area Coverage	>89,000 sq. km
Intra-state Translocations	13 successful since 2021
Forest Carbon Sequestration	Estimated 4.2 million tonnes annually from tiger habitats

**Challenges in Conservation**

Challenge	Explanation
Human–Tiger Conflict	168 conflict cases reported in 2024; rising due to shrinking buffer zones
Linear Infrastructure Projects	Roads, rails and mines fragment habitats; poor implementation of mitigation plans

## C.C. JUNE &amp; JULY '25

Climate Vulnerability	Sundarbans tigers face salinity, cyclone stress
Poaching & Trafficking	Despite tech advances, organised syndicates still operate via Myanmar, Nepal routes

## Global Context

Country	Tiger Numbers (2025)	Notable Actions
India	3,682	NTCA reforms, e-surveillance, GBCA
Russia	~530	Focused Amur tiger habitat protection
Indonesia	~400 (Sumatran)	Conflict mitigation with local tribes
China	<60 (wild)	Captive breeding focus

## Data Crunch

Indicator	Status (2025)
GBCA Member Countries	24
India's Tiger Population Growth	+6.7% from 2018
Wildlife Conflict Mitigation Funds	₹500 crore under CAMPA
Poaching Convictions (2023-25)	270+ under Wildlife Act

## Ethics Angle (GS-IV)

As a DFO, you find that a new state highway project is slicing through a known tiger corridor. The political leadership pushes for rapid clearances. How would you ensure ecological ethics are not compromised while respecting democratic development goals?

## Prelims MCQs

Q1. Which of the following is true about the Global Big Cat Alliance (GBCA)?

- It is an India-led initiative.
- It includes both range and non-range countries.
- It focuses only on tiger conservation.

Choose the correct code:

- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) All of the above

**Answer: A**

Q2. Which Indian state hosts the maximum number of tiger reserves as of 2025?

- (a) Madhya Pradesh                      (b) Karnataka  
(c) Uttarakhand                      (d) Maharashtra

**Answer: A**

## India's Digital Trade Negotiations Strategy 2025 – WTO Stand and Data Sovereignty Imperatives

## Pre-Shots

- In July 2025, India formally submitted its revised Digital Trade Negotiations Framework to the WTO's Joint Initiative on E-commerce (JSI).
- India reiterated its position against premature commitments on data flow, source code disclosure, and custom duties moratorium on digital trade.
- The policy reflects India's emphasis on strategic digital autonomy, domestic data localization, and equitable rules for developing nations.

## Mains Connect

## Why Digital Trade Matters for India

- Digital Economy Size:** India's digital economy is projected to cross \$1 trillion by 2030.
- Start-up Nation:** With 110+ unicorns, India's stake in shaping global digital trade norms is critical.
- National Security & Privacy:** Unrestricted data flows could undermine India's sovereign control over sensitive digital assets.
- Digital Inclusion Goals:** WTO norms must not bypass developmental asymmetries between nations.

## India's WTO Stand in 2025

Issue	India's Position
Data Sovereignty	Rejects unrestricted cross-border data flows without domestic safeguards
Source Code Disclosure	Resists obligations to share proprietary software unless ordered by courts
Customs Duties on e-Transmissions	Opposes permanent moratorium – argues for fiscal space for developing countries
Digital Platforms Regulation	Advocates policy space for regulating Big Tech and ensuring fair competition

## Domestic Justifications for India's Position

- Digital Personal Data Protection Act (DPDPA) 2023:**
  - Emphasizes data localization, consent architecture, and data fiduciary accountability.
  - Aligns with India's stand on restricting unrestricted foreign data access.
- Revenue Implications:**
  - India loses ~\$800 million annually due to WTO's digital goods duty moratorium.
- Cybersecurity & National Interest:**
  - Open data flows heighten vulnerabilities, especially in critical sectors like finance, defence, and health.

**Comparative Stands of Major Economies**

Country	Position on Data Flow	Tariff on Digital Goods
India	Favors regulation	Seeks policy space
USA	Promotes free cross-border flow	Supports zero-tariff moratorium
EU	Conditional on GDPR compliance	Mixed stand among member states
China	Favors tight state control	Supports duties on e-products

**Global Implications of India's Digital Trade Strategy**

Implication	Explanation
South-South Solidarity	India's position echoes concerns of African, ASEAN, LDC nations
Digital Colonialism Resistance	Pushback against norms that empower Big Tech over state regulations
Redefining Digital Sovereignty	Sets example for balancing openness and national control
Role in G20 & BRICS	Positions India as digital rule-setter, not rule-taker

**Data Crunch**

Metric	Value / Status (2025)
Digital Economy Share of GDP	9.6%
Annual E-commerce Turnover	\$120 billion
Data Center Investments (2020–25)	\$16+ billion (major global firms localizing)
Digital Moratorium Revenue Loss Estimate	\$800 million annually
Global JSi Member Countries	90+

**Ethics Angle (GS-IV)**

You are India's WTO representative. While developed nations lobby for open digital trade, you know such norms could harm your country's privacy architecture and regulatory autonomy. How would you uphold ethical globalism while protecting national interests?

**Prelims MCQs**

Q1. India's opposition to the moratorium on e-commerce transmissions at WTO is primarily due to:

- Lack of digital infrastructure
- Fiscal revenue losses
- Concerns over foreign investment
- Bilateral trade deficits

**Answer: B**

Q2. The WTO Joint Statement Initiative (JSi) deals with:

- Countervailing duties
- Climate finance mechanisms

- E-commerce rule negotiations
- Green goods subsidy negotiations

**Answer: C****National Urban Digital Mission (NUDM) 2025 – Building Smart, Inclusive & Resilient Cities****Pre-Shots**

- In June 2025, the Ministry of Housing and Urban Affairs (MoHUA) released its mid-term performance review of the National Urban Digital Mission (NUDM).
- With coverage now across 3,100+ ULBs (Urban Local Bodies), NUDM is emerging as India's backbone for urban governance digitisation.
- The focus is on building digital public infrastructure for urban planning, property records, water management, and citizen services.

**Mains Connect****Why NUDM Matters for India's Urban Future**

- Urban Explosion: Over 600 million people projected to live in Indian cities by 2036 (Census Projections).
- Service Delivery Gaps: Water, sanitation, waste, grievance redressal—all need tech integration.
- Digital Governance Imperative: ULBs often lack digital capabilities—NUDM fills this governance-tech gap.
- Urban Resilience: Climate risks, migration stress, and informal housing demand smarter, responsive cities.

**NUDM 2025: Scope and Achievements**

Component	Status (June 2025)
ULBs Covered	3,123 cities, including all Tier-1 and Tier-2 towns
Digital Citizen Service Portals	88% of participating ULBs offer 25+ e-services
GIS-based Urban Planning Integration	Adopted by 17 states under AMRUT 2.0
Urban Stack API Adoption	Integrated with Aadhaar, e-Pramaan, DigiLocker
National Urban Data Exchange (NUDE)	Over 1,200 datasets shared between state and city agencies

**Key Sub-Platforms under NUDM**

Platform	Function
ULB Digital Services Portal	Access to birth certificates, property tax, water bills, trade licenses
India Urban Data Exchange	Federated data exchange across cities for evidence-based planning
Smart Code India Repository	Open-source governance tools for small ULBs

AI Assistants	Urban	Piloted in Indore, Pune, Hyderabad for citizen grievance auto-responses
---------------	-------	---

**Challenges to Full-Scale Implementation**

Challenge	Explanation
Digital Literacy Gap	Urban poor lack access and know-how to use e-services
ULB Capacity Constraints	Only 20% of ULBs have IT-trained staff; high outsourcing dependency
Data Privacy Concerns	No standard city-level protocols for citizen data anonymization
Interoperability Issues	Legacy systems incompatible with Urban Stack and new cloud platforms

**Data Crunch**

Indicator	Value (2025)
Urban Population Share (projected 2036)	42.5% of India's population
NUDM Budget Allocation FY 2024-25	₹2,450 crore
API Calls Logged via Urban Stack	Over 68 million
Reduction in Service Delivery Time	37% on average for property tax & grievance
Open-Source Tools Developed	185+ published on SmartCode Repository

**Ethics Angle (GS-IV)****Prompt:**

You are the Municipal Commissioner of a rapidly growing Tier-2 city. Many citizens still prefer manual procedures, and the elderly population finds it hard to adapt to online systems. How would you ethically balance efficiency with inclusivity?

**Prelims MCQs**

Q1. Which of the following statements regarding the National Urban Digital Mission (NUDM) are correct?

1. It was jointly launched by MoHUA and the Ministry of Electronics and IT.
2. It mandates compulsory Aadhaar linkage for all urban citizen services.
3. It supports ULBs in creating digital infrastructure for service delivery.

Choose the correct code:

- (a) 1 and 3 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) All of the above

**Answer: A**

Q2. The India Urban Data Exchange (IUDE) platform under NUDM serves primarily to:

- (a) Digitize land records

- (b) Enable secure data sharing between urban bodies
- (c) Generate ULB revenue reports
- (d) Provide housing subsidies

**Answer: B**

## Ayushman Bharat Digital Mission 2025 – Strengthening Health Tech Infrastructure and Insurance Portability

**Pre-Shots**

- In July 2025, the National Health Authority (NHA) released a mid-term performance report of the Ayushman Bharat Digital Mission (ABDM).
- Over 47 crore digital health IDs have been created and 17 crore e-Health records are now linked.
- The mission is transforming India's fragmented health ecosystem into an integrated digital public health infrastructure.

**Mains Connect****Why ABDM Matters in India's Health Landscape**

1. Health Fragmentation: India's health records remain scattered across hospitals, labs, and insurers.
2. Portability Needs: Migrant workers and rural populations face access and documentation hurdles.
3. Policy Interoperability: Ensuring data exchange between schemes like PMJAY, state health missions, and private insurers.
4. Pandemic Lessons: COVID-19 exposed gaps in digital tracking, telemedicine, and contactless insurance access.

**ABDM's Key Pillars & Progress (2025)**

Component	Status (July 2025)
Ayushman Bharat Health Account (ABHA)	47.2 crore digital health IDs created (formerly Health ID)
Health Facility Registry (HFR)	2.1 lakh+ public and private facilities onboarded
Healthcare Professional Registry (HPR)	13.5 lakh+ doctors, nurses, and allied professionals verified
Personal Health Records (PHR)	Over 17 crore e-Health records linked and accessible to users
Unified Health Interface (UHI)	Piloted in 8 states for open telemedicine & diagnostics ecosystem

**Game-Changing Features**

1. Health Data Portability: Citizens can carry their medical history across states and providers securely.
2. Open APIs: Based on the India Stack model, enabling private innovation without compromising regulation.



## C.C. JUNE &amp; JULY '25

3. Insurance Interoperability: Real-time claim processing through Digital Health Claims Exchange (HCX).
4. Telemedicine & e-Pharmacy: Bridging urban-rural access gap with e-Sanjeevani integration.

**Challenges and Gaps**

Challenge	Explanation
Digital Divide	Poor digital literacy in rural areas may exclude the most vulnerable
Data Privacy Concerns	While DPDP Act 2023 offers framework, hospital-level enforcement is weak
Provider Onboarding	Resistance from private hospitals citing cost, compliance, and integration hurdles
Low State-Level Integration	Uneven progress among states; North-eastern states lag in full ABDM rollout

**Data Crunch**

Indicator	Status (2025)
Digital Health IDs (ABHA)	47.2 crore
Verified Health Facilities (HFR)	2.1 lakh+
e-Health Records Linked	17 crore+
States with Full ABDM Integration	14 states
Hospitals Offering Digital Claims	31,000+ empanelled under PM-JAY

**Ethics Angle (GS-IV)****Prompt:**

As a District Health Officer, you're tasked with digitising patient records under ABDM. Many elderly citizens express fears of surveillance and data misuse. How will you promote ethical digitisation while ensuring participation?

**Prelims MCQs**

Q1. Which of the following are components of the Ayushman Bharat Digital Mission (ABDM)?

1. Unified Health Interface (UHI)
2. Health Professional Registry (HPR)
3. eSanjeevani 3.0
4. Health Claims Exchange (HCX)

Select the correct code:

- (a) 1 and 2 only
- (b) 2, 3, and 4
- (c) 1, 2, and 4
- (d) All of the above

**Answer: C**

Q2. Which statement about ABHA (Ayushman Bharat Health Account) is incorrect?

- (a) It allows secure storage of patient health data
- (b) It requires Aadhaar for mandatory linking
- (c) It enables access to e-prescriptions and lab reports
- (d) It forms part of India's digital public infrastructure

**Answer: B (Aadhaar is not mandatory, though encouraged)**

## National Metrology Strategy 2025 – Precision, Innovation, and India's Quality Revolution

**Pre-Shots**

- In July 2025, the Department of Consumer Affairs released a progress update on the National Metrology Strategy, aligning with India's "Quality Revolution".
- The focus is on transforming India's measurement infrastructure to enable precision manufacturing, global competitiveness, and citizen safety.
- The strategy is implemented by CSIR-NPL (National Physical Laboratory) and coordinated with BIS and industrial R&D labs.

**Mains Connect****Why Metrology Matters in India's Developmental Goals**

1. Make in India 2.0: Precision measurement is key to quality production and global exports.
2. Standardisation & Consumer Rights: Accurate weights, energy ratings, and health diagnostics affect daily life and consumer trust.
3. Scientific Sovereignty: R&D and innovation ecosystems need reliable measurements for reproducibility and patents.
4. Climate Monitoring: Measurement standards are essential in emissions monitoring, solar radiation measurement, and clean energy adoption.

**National Metrology Strategy: Key Focus Areas**

Focus Area	Highlights
Legal Metrology Modernisation	BIS Act updates for real-time traceability and compliance automation
Expansion of Calibration Labs	Over 850 NABL-accredited labs; new Tier-II city outreach
SI Unit Harmonisation	India adopts global SI units (as per BIPM) for trade, health, and energy
Digital Metrology	Launch of India's first digital weight verification app
Quantum Standards	CSIR-NPL developing quantum-based mass, time, and temperature references

## Achievements So Far (2024–25)

Metric	Status (as of July 2025)
CSIR–NPL Calibration Certificates Issued	Over 4.2 lakh issued across sectors (healthcare, power, manufacturing)
NABL Lab Coverage	Expanded to 850+ accredited labs across 27 states
Consumer Weights Verified	98.3% compliance across fuel pumps, grocery scales, and e-commerce
Metrology Start-ups Supported	125+ start-ups via QCI-BIS Innovation Bridge
Export Rejections Due to Measurement Errors	Declined by 43% compared to FY 2021–22

## Sectoral Linkages

Sector	Metrology Relevance
Healthcare	Accurate diagnostic equipment, dosage calibration, wearable health devices
Energy & Mobility	EV battery testing, energy meters, emissions standards
Agriculture	Weighbridges, packaging standards, pesticide traceability
Space & Defence	Atomic timekeeping, satellite navigation calibration

## Challenges in Implementation

Challenge	Explanation
Shortage of Skilled Metrologists	Limited training institutions for precision instrumentation and calibration
Fragmented Legal Enforcement	State-level inspectors differ in digital adoption and enforcement approach
Low Public Awareness	Many consumers unaware of weight/measure frauds or how to report
Global Benchmarking Gaps	Need for alignment with ISO, OIML, and BIPM frameworks

## Data Crunch

Indicator	Value (2025)
Size of India's Testing & Calibration Market	₹8,300 crore (projected by DPIIT)
GDP Contribution from Standards-linked Exports	28% of total merchandise exports
Industrial Rejections due to Measurement Errors	Declined by 43% since 2021

## Ethics Angle (GS-IV)

## Prompt:

As a Weights & Measures Officer, you're offered a bribe by a prominent retail chain to overlook under-weighting practices. The store argues that consumers "don't notice a few grams." What ethical principles and public interest concerns guide your decision?

## Prelims MCQs

- Q1. Which of the following organisations is primarily responsible for scientific metrology in India?
- Bureau of Indian Standards (BIS)
  - National Accreditation Board for Testing and Calibration Laboratories (NABL)
  - Council of Scientific and Industrial Research – National Physical Laboratory (CSIR–NPL)
  - National Innovation Foundation
- Q2. The term "SI Units" refers to:
- Simplified Indicators for Industrial Quality
  - Statistical Indicators of Innovation
  - Standard International Units for measurement
  - Systematic Integration of Data and Quality

Answer: C

Answer: C

## Defence Production Boost 2025 – India's Push for Indigenous UAVs, Quantum Tech, and Start-up Integration

## Pre-Shots

- July 2025 saw the Ministry of Defence release its Annual Defence Production & Export Report.
- Indigenous defence production has crossed ₹1.3 lakh crore, with India emerging among top 25 global arms exporters.
- Focus areas include Unmanned Aerial Vehicles (UAVs), Quantum Communication, Defence Start-up incubation, and private sector integration through iDEX.

## Mains Connect

## Why Defence Production Is Strategic to India's National Interest

- Geopolitical Assertiveness: Self-reliant defence boosts strategic autonomy amid growing Indo-Pacific tensions.
- Technology Sovereignty: Reduces dependency on foreign OEMs and supports indigenous IP creation.
- Employment & Start-up Ecosystem: Defence sector is driving innovation-led MSMEs and R&D job growth.
- Export Diplomacy: Defence exports (to Philippines, Armenia, Mauritius) enhance soft power and strategic partnerships.

## Highlights of Defence Production Report (2024–25)

Segment	Data / Progress
---------	-----------------

Total Indigenous Production	₹1.32 lakh crore (up from ₹95,000 cr in 2021–22)
Defence Exports	₹21,000 crore (Record High)
UAV Platforms Developed	16 indigenous UAVs, including Tapas-BH, Archer-NG, and tactical drones
Quantum Technology Investments	12 DRDO-backed projects, including quantum radar and cryptography systems
Private Start-ups in Defence	350+ start-ups under iDEX, ₹600+ crore sanctioned
Defence Industrial Corridors	2 Corridors (Tamil Nadu, UP); 130+ MoUs signed; ₹24,000 crore investment

**Infographic:** Rising Trend of Indigenous Defence Manufacturing (2018–2025)

#### UAV Revolution: Key Programmes

UAV Name	Function	Status
Tapas-BH	Medium-Altitude Long-Endurance (MALE)	Final trials under DRDO
Archer-NG	Armed UAV for strike capability	Prototype unveiled July 2025
Daksha	Combat Engineering UAV (IED defusal)	Deployed in border operations
SWiFT	Stealth UCAV Prototype	Under engine development

DRDO is also collaborating with HAL and private players (IdeaForge, Adani Defence) for mass production.

#### Quantum Frontier in Defence

- Quantum Key Distribution (QKD) enabled secure battlefield communications across Army formations.
- Quantum Radar developed for stealth aircraft detection (Phase II trial under process).
- DRDO collaborating with IITs and IISERs to establish India's Quantum Defence Lab Grid (QDLG).

#### Challenges in Scaling Indigenous Defence

Challenge	Details
Bureaucratic Delays	Lengthy procurement approvals in DAP (Defence Acquisition Procedure)
Technology Gaps	Lack of ecosystem for critical tech like AESA radars, jet engines
Start-up Retention	Several MSMEs exit due to long gestation and payment delays
R&D Spend	India's defence R&D budget is < 7% of total compared to 15%+ in USA/Israel

#### Data Crunch

Metric	Value (2025)
Contribution of Private Sector in Defence	₹27,000 crore+
Number of Defence Startups under iDEX	350+
Defence Export Targets (India@2047)	\$10 Billion per annum by 2030
Employment Created (Last 3 Years)	1.7 lakh+ jobs in Tier-II defence hubs

#### Ethics Angle (GS-IV)

##### Prompt:

A young DRDO scientist is being approached by a foreign defence agency offering a lucrative deal to share prototype data. What ethical obligations towards national interest and scientific integrity must guide their actions?

#### Prelims MCQs

Q1. Consider the following statements about India's Defence Innovation Ecosystem:

- iDEX is implemented by DRDO.
- Tapas-BH is a drone meant for surveillance and reconnaissance.
- India's Defence Industrial Corridors are located in Gujarat and Punjab.

Which of the above are correct?

- (a) 1 and 2 only                      (b) 2 only  
(c) 1 and 3 only                      (d) 2 and 3 only

**Answer: B**

Q2. Which of the following is associated with Quantum Technologies in India's defence sector?

- (a) SWIFT                      (b) QDLG  
(c) APAS                      (d) DAP

**Answer: B**

#### MSME Credit Revival in India – From Emergency Liquidity to Structural Reform (2025 Update)

##### Pre-Shots

- Total credit outstanding to the MSME sector crossed ₹26 lakh crore in June 2025 (RBI sectoral deployment data).
- Post-pandemic stopgap lines like ECLGS have given way to structural tools: credit guarantee reform, invoice discounting (TReDS), and blended finance.
- Over 3.2 crore MSMEs are now registered on the Udyam portal, enabling data-linked credit scoring.

##### Mains Connect

##### From Survival to Scale

Micro, Small and Medium Enterprises (MSMEs) account for roughly 30% of India's GDP, 45% of exports, and the bulk of

non-farm employment. The pandemic years (2020–22) triggered a liquidity shock; emergency interventions such as the Emergency Credit Line Guarantee Scheme (ECLGS) and subordinate debt windows helped prevent mass closures. By 2025, policy focus has shifted from distress management to credit deepening, formalization, and global market readiness. The June 2025 MSME Status Note (Ministry of MSME) and RBI's credit deployment data show both recovery and new structural vulnerabilities.

### What Changed in 2024–25?

- Transition from Emergency Guarantees to Targeted Instruments:** ECLGS disbursement tapered off, but the guarantee architecture was retooled into the Credit Guarantee Fund Trust for Micro & Small Enterprises (CGTMSE) 2.0, reducing guarantee fees and raising coverage limits for working capital up to ₹2 crore. This lowers collateral barriers for first-generation entrepreneurs.
- Data-Led Lending via Udyam & GST Trails:** Integration of Udyam Registration, GST returns, and bank account analytics allows fintech lenders and SIDBI partners to underwrite loans using cash-flow data rather than land collateral—crucial for service-sector and women-led units.
- Cluster-Based Financing & Export Orientation:** SIDBI's Cluster Development Fund and Ubharte Sitaare (already covered in Article 16) are steering capital toward export-ready manufacturing and agri-processing clusters. Credit intensity is rising in textiles, food processing, light engineering, and renewables components.
- Digital Trade & Invoice Financing:** The Trade Receivables Discounting System (TReDS) gained scale: invoice volumes up 62% YoY; public sector buyers now mandated to onboard, improving MSME cash cycles. Integration with the Ombudsman for Delayed Payments has started in pilot states.
- Green MSME Push:** Under the Climate-Linked Lending window (SIDBI–World Bank), concessional credit is offered for energy-efficient retrofits in small foundries, ceramics, and cold chains—linking MSME revival to India's climate goals.

### Credit Landscape 2025

Credit Channel / Instrument	June 2024 (₹ cr)	June 2025 (₹ cr)	YoY %	Notes
Scheduled Commercial Bank MSME Credit	19,80,000	22,40,000	+13%	Driven by public sector banks, NBFC co-lending

NBFC-MSME Portfolio	2,45,000	3,10,000	+27%	Growth in micro loans, machinery finance
CGTMSE Guaranteed Loans	1,18,000	1,74,000	+47%	Lower guarantee fees boosted uptake
TReDS Discounted Invoices (flow)	56,000	90,500	+62%	Faster receivables; PSU onboarding
ECLGS Outstanding (run-off)	2,05,000	1,62,000	-21%	Scheduled phase-down; refinance into term loans

(Values rounded; compiled from RBI, SIDBI, MSME dashboard releases.)

### Stress Points & Structural Risks

Issue	Impact on MSMEs	Required Policy Action
Informal-to-formal transition gaps	Many tiny units remain outside GST; no credit history	Expand simplified Udyam Assist via CSCs
Delayed payments by large buyers	Cash flow stress, NPA risk	Mandatory 30-day payment compliance + penalties
Collateral shortfall	Micro units stuck at sub-₹10 lakh borrowing caps	Expand cash-flow & receivables-backed lending
Credit Deepening in NE & Tribal belts	Low access; high cost of servicing	Regional guarantee pools + digital KYC stacks
Rising Interest Rate Spread	Smaller borrowers pay 300–500 bps more than corporates	Priority sector refinements + blended credit

### Reform Toolkit Going Forward

- MSME Credit Health Score – Unified risk score combining GST, EPFO, utility, and payment data.
- Embedded Credit via Digital Platforms – ONDC-linked trade finance for small sellers.

## C.C. JUNE &amp; JULY '25

3. Blended Credit Pools – State + DFIs + private impact funds for women-led micro-units.
4. AI-driven Early Warning Systems – Predict stress based on invoice delays and GST anomalies.
5. Green Credit Market Access – Carbon-linked concessional loans for export industries.

## Data Crunch

Indicator	Status (June 2025)
Udyam-Registered MSMEs	3.2 crore+
Women-Owned MSMEs (registered)	~21%
Export Contribution of MSMEs	~45%
Share of Micro Units in Total	~94% by count
NPA Ratio in MSME Lending (avg.)	7.8% (down from 9.6% in 2023)

## Ethics Angle (GS-IV)

Prompt: You are the regional manager of a public sector bank. Two MSME borrowers apply for restructuring—one politically influential but financially weak; the other a woman-led export unit with repayment discipline but no collateral. How will you ensure fairness, transparency, gender equity, and prudent banking?

## Prelims MCQs

Q1. Which of the following correctly matches the instrument with its primary purpose?

1. ECLGS – Emergency liquidity guarantee during pandemic period
2. TReDS – Platform for discounting MSME invoices
3. CGTMSE – Credit guarantee for collateral-free loans

Select the correct code:

- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) 1, 2, and 3

**Answer: D**

Q2. Udyam Registration primarily helps MSMEs by:

- (a) Subsidizing exports automatically
- (b) Creating a formal identity for data-linked credit and policy benefits
- (c) Waiving GST compliance
- (d) Providing free raw material procurement

**Answer: B**

## Women in STEM & Research Funding Equity: Bridging the Gender Gap in Innovation

## Pre-Shots

- Women account for only 18% of India's research and development workforce (DST, 2025).

- The KIRAN Scheme, Vigyan Jyoti, and the new Gender Advancement for Transforming Institutions (GATI) are being expanded.
- The National Research Foundation (NRF) aims to earmark 30% of its outreach grants for women-led STEM research.

## Mains Connect

## Context

India's ambition to become a global innovation hub demands equitable participation of women in science, technology, engineering, and mathematics (STEM). However, entrenched gender norms, lack of institutional support, and funding disparities continue to hinder their contribution. The June–July 2025 cabinet decisions, backed by DST's Annual Report and NITI Aayog's SDG progress tracker, highlight renewed policy attention on gender equity in scientific research and academia.

## Policy Milestones &amp; Current Developments

Scheme Initiative /	Highlights	Recent Update
KIRAN Scheme (DST)	Fellowship and mobility support for women scientists	Budget raised by 40% in Union Budget 2025–26
Vigyan Jyoti	STEM camps, mentorship for girl students (class 9–12) in Tier 2–3 cities	Expanded to 250 districts in 2025
GATI	Institutional rating based on gender inclusion (HEIs)	NIRF now includes GATI Index as sub-score
NRF Grants (Women quota)	Minimum 30% earmarked for women researchers	Implementation begins FY 2025–26
Bharatiya Women in Research Portal	Real-time data on women's presence in research councils, patents, grants	Launched in June 2025

## Challenges in Women's STEM Participation

1. **Leaky Pipeline Syndrome** Drop-off rates of women from research increase post-PhD due to family care duties, lack of re-entry programs, and gender stereotypes.
2. **Gendered Funding Disparities** Women-led projects receive fewer and smaller grants. In 2024, only 14% of DST's total grant disbursement went to women PIs (Principal Investigators).



## C.C. JUNE &amp; JULY '25

3. **Glass Ceiling in Institutional Hierarchies** Less than 10% of IIT and CSIR leadership positions are held by women. Lack of visibility reduces aspirational role models.
4. **Workplace Harassment & Bias** Subtle biases and structural sexism discourage retention. Only 12% of HEIs had functional Internal Complaints Committees in 2023 (UGC data).
5. **Skewed Patent & Start-up Ecosystem** Women constitute only 8% of patent holders and 13% of start-up founders in India.

**Way Forward & Reforms**

- Flexible Research Tenures: Allow caregiving gaps without penalizing publication metrics.
- Returnship Fellowships: DST & DBT to offer re-entry grants with lab reintegration support.
- Gender-Sensitive Incubation: Women-first start-up funds, mentorship cells in IITs/NITs.
- Institutional Incentives: Rank grants and NIRF scores based on inclusive hiring and infrastructure.
- AI-Based Grant Monitoring: Track gender parity in research fund approvals in real-time.

**Data Crunch**

Indicator	2022	2025
Women in R&D (overall)	14.5%	18%
Share of women-led DST grants	12%	17%
Women in IIT faculty positions	11%	13.6%
Female patent applicants	6.4%	8.1%
Vigyan Jyoti Districts Covered	100	250

**Ethics Connect (GS4)**

**Caselet:** A top-performing researcher, Dr. Meera, is denied a project extension post-maternity. Another male peer is allowed flexibility for a sabbatical.

Discussion Point: Apply principles of justice, empathy, gender equity, and meritocracy in institutional decision-making.

**Prelims MCQ**

- Q. The Gender Advancement for Transforming Institutions (GATI) initiative is primarily aimed at:
- (a) Promoting nutrition among tribal women
  - (b) Increasing women's representation in armed forces
  - (c) Improving gender equity in higher educational institutions
  - (d) Providing maternity benefits in public sector

**Answer: C**

## National Policy on Older Persons 2025: Redefining Senior-Centric Welfare

**Pre-Shots**

- India's elderly population (60+) is projected to cross 200 million by 2030 (MOSPI).
- The National Policy on Older Persons (NPOP) 2025 replaces the outdated 1999 framework.

- Focus on "active ageing," digital inclusion, health insurance, and intergenerational solidarity.

**Mains Connect****Context**

India is ageing rapidly. According to the Elderly in India 2024 report by the Ministry of Statistics, the senior population has grown by over 35% in the last decade. The previous policy (1999) no longer addresses the socio-economic realities of modern ageing—digital exclusion, urban isolation, pension insecurity, and rising health costs. The 2025 Policy Revision was approved by the Union Cabinet in July 2025.

**Key Highlights of the New Policy**

Component	Features Introduced in 2025 Policy
Active Ageing Framework	Encourages post-retirement employment, volunteerism, senior entrepreneurship
Elderly Health Coverage	Mandatory inclusion under Ayushman Bharat; subsidised premium for unorganised elderly
Digital Literacy for Seniors	Launch of "Silver E-Literacy Mission" for 60+; target of 1 crore seniors by 2027
Senior Housing Norms	State-wise Elder Housing Index, PPP for senior-friendly rental housing
Legal & Social Protections	Fast-track courts for elder abuse cases; community-based surveillance for isolated elders
Financial Security	Mandatory pension inclusion under NPS Lite; doorstep banking for pensioners in rural India
Grievance Redressal	"Senior Sahyog Helpline" made nationwide and integrated with CM Helplines

**Why the New Policy Was Needed**

1. **Demographic Shift** Seniors will account for ~14% of India's population by 2035, posing health and care challenges.
2. **Gaps in Coverage** Only 32% of elders in the unorganised sector had access to pensions (as per PRS 2024).
3. **Growing Cases of Abuse** Over 60% of elderly reported psychological or financial abuse by family members (HelpAge India 2023).
4. **Neglect of Elderly in Urban Policies** Smart City missions lacked explicit design for senior-friendly spaces.
5. **Digital Divide** Only 17% of elders in Tier-2/3 towns use digital banking or telemedicine tools.

**Data Crunch**

Indicator	2011 Census	2021 Estimate	2025 Projection
Elderly Population (60+)	103 million	139 million	167 million
Share of Elderly in Total Population	8.6%	10.1%	11.9%
Rural Elder Dependency Ratio	13.1	16.2	19.4
Literacy Rate (Elderly)	44%	57%	Target 70% (by 2030)

**Ethics Connect (GS4)**

**Caselet:** A retired government employee in Bihar was denied cashless treatment due to lack of digital ID updates. A young volunteer from the **"Silver Net"** program helped him file a grievance and ensured access.

Discussion Point: Reflects the value of compassion, procedural justice, and intergenerational empathy.

**Implementation Challenges**

- Federal Delay: Implementation depends on state ageing policies and fund devolution.
- Private Sector Hesitance: Lack of incentives for elder-focused product innovation.
- Monitoring Difficulties: Weak tracking mechanisms for elder abuse and service delivery gaps.

**Way Forward**

- Smart Aging Index: Annual ranking of states based on elderly infrastructure, pensions, and grievance redress.
- Digital Elder Passport: A unified document for healthcare, pension, and senior discounts.
- Incentivised Family Support: Tax rebates for caregivers of senior citizens.

**Prelims MCQ**

- Q. The National Policy on Older Persons 2025 introduces all of the following features except:
- Silver E-Literacy Mission
  - Mandatory senior housing quotas in smart cities
  - Direct transfer of Ayushman premium subsidy
  - Elder abuse fast-track courts

**Answer: B****GIFT City: India's Global Financial Hub in 2025 – Status Report & Strategic Expansion****Pre-Shots**

- GIFT IFSC recorded a 240% growth in daily transaction volume in FY 2024–25 (IFSCA Report).

- Government aims to position GIFT City as a "Global Financial and Tech Gateway" by 2030.
- New policies announced in July 2025 expand offshore banking, fintech, and green finance operations.

**Mains Connect****Context**

Gujarat International Finance Tec-City (GIFT City) was envisioned to rival financial centers like Singapore, Dubai, and London. In July 2025, the Government of India and International Financial Services Centres Authority (IFSCA) released a mid-term progress report and unveiled fresh regulatory enhancements to boost fintech startups, sustainable finance, and rupee-based trade.

**Key Updates & Milestones**

Area of Reform	July 2025 Updates
Fintech Enablement	₹250 crore "Fintech Innovation Fund" launched; sandbox expansion to 50 startups
Green Bonds & ESG	1st ESG bond clearing house operational at GIFT IFSC
Banking Ecosystem	Offshore units of Indian banks permitted to settle cross-border rupee trades
Stock Exchange Activity	NSE IFSC and BSE IFSC allowed 24x7 trading in key instruments (equity derivatives, forex)
Real Estate REITs	Revised rules to allow fractional ownership and listing of global REITs in GIFT
Global Collaboration	Singapore FinTech Association & IFSCA signed MOU to enable tech transfer & co-regulation

**Why GIFT City Matters for UPSC**

- Economic Diplomacy: Hub for rupee internationalisation and alternative to SWIFT for Indian trade with Russia, UAE.
- Employment: 25,000+ skilled jobs added in FY25; expected to grow to 1 lakh by 2030.
- Ease of Doing Business: Unique single-window clearance system in SEZ & IFSCA regulatory flexibility.
- Tax Incentives: 10-year tax holiday for firms operating in GIFT IFSC.
- Sustainable Finance: India's first green fintech accelerator headquartered in GIFT since June 2025.

**Data Crunch**

Indicator	FY 2023–24	FY 2024–25	FY 2025–26 Target
Firms Registered in IFSC	580	875	1200

## C.C. JUNE &amp; JULY '25

Daily Trading Volume (₹ crore)	1,700	5,300	7,500
Jobs Created	13,000	25,000	35,000
REIT Listings	3	6	10
Green Bond Clearance	₹0	₹8,200 crore	₹20,000 crore

**Ethics Connect (GS4)**

**Caselet:** A private wealth firm at GIFT IFSC is flagged for round-tripping and tax arbitrage.

Discussion Point: Application of probity in financial ethics, transparency norms, and the role of regulatory auditing (e.g., SEBI, IFSCA).

**Implementation Challenges**

- Lack of Skilled Manpower: NITI Aayog's financial skill mapping shows only 35% workforce readiness for high-complexity fintech roles.
- Infrastructural Gaps: Transport and housing in GIFT urban cluster remain underdeveloped.
- Global Image: Still viewed as "domestic SEZ project" rather than a full international hub.

**Way Forward**

- Smart Integration: High-speed rail to Gandhinagar & Ahmedabad airport under PM Gati Shakti by 2026.
- Global Investor Roadshows: Monthly showcases planned in Dubai, Tokyo, and New York.
- Green Corridor Certification: Exclusive certification for GIFT-based ESG-compliant firms.

**Prelims MCQ**

Q. Which of the following statements regarding GIFT City are correct?

1. It is India's first International Financial Services Centre.
2. It allows fractional ownership listing under REITs.
3. GIFT IFSC falls under the regulatory domain of RBI.

**Options:**

- (a) 1 only (b) 1 and 2 only  
(c) 2 and 3 only (d) 1, 2 and 3

**Answer: B**

**(Note: GIFT IFSC is regulated by IFSCA, not RBI.)**

**India-EU Connectivity Partnership: Strategic & Digital Corridors****Pre-Shots**

- The India-EU Connectivity Partnership, launched in 2020, has entered an operational phase in 2025.
- Emphasis on "trusted value chains," digital sovereignty, and energy corridors.

- The July 2025 Summit in Brussels resulted in expanded joint infrastructure projects across Central Asia and Africa.

**Mains Connect****Context**

As part of its Indo-Pacific and Global Gateway strategies, the European Union (EU) has collaborated with India to build physical, digital, and people-to-people connectivity. In June-July 2025, India and the EU formalised financing and rollout plans for several strategic projects in Africa and Eurasia, including:

- The Digital Connectivity Hub in Kenya,
- The India-Central Asia Rail Link (Phase 1),
- The India-EU Solar Infrastructure Fund.

This marks a shift from MOUs to implementation and positions India as a co-architect in multilateral infrastructure diplomacy.

**Strategic Pillars of the Partnership**

Pillar	Key 2025 Update
Digital Connectivity	Joint development of subsea cable routes; interoperability standards for 6G
Transport Corridors	Feasibility study for Chabahar-Caucasus rail corridor co-funded by EU
Energy Infrastructure	India-EU Green Energy Platform scaled to 12 GW across Africa & Eurasia
Research & Innovation	Collaboration on AI ethics and quantum governance via India-EU Think20 Dialogue
Standards & Sovereignty	Mutual recognition of cybersecurity protocols and cross-border data frameworks

**Why This Matters for India**

- Alternatives to China's BRI: Offers like-minded, rule-based financing for developing nations.
- Geopolitical Leverage: Strengthens India's soft power in Africa and Central Asia.
- Digital Sovereignty: Joint data regulation models reduce dependency on big tech monopolies.
- Green Diplomacy: Access to EU's €300 billion Global Gateway fund.
- India-Middle East-Europe Economic Corridor (IMEC): India-EU commitments dovetail with IMEC projects, especially in Eastern Europe and UAE port linkages.

**Data Crunch**

Parameter	2022	2024	2025 Target
India-EU Trade Volume (€)	€88 bn	€109 bn	€125 bn
Investment from EU to India	€75 bn	€88 bn	€100 bn

## C.C. JUNE &amp; JULY '25

Joint Infrastructure Projects	4	9	15
No. of nations engaged via partnership	12	16	20

**Ethics Connect (GS4)**

**Caselet:** An Indian infrastructure firm, awarded a **rail contract in Uzbekistan under India–EU corridor**, is accused of using substandard material.

Discussion: Raises issues of corporate accountability, international norms of due diligence, and ethical export behavior.

**Challenges Ahead**

- **Financing Bottlenecks:** Many African and Central Asian nations have limited creditworthiness.
- **Political Risk:** Geopolitical tensions (e.g., Russia–Ukraine, West Asia) may impact corridor continuity.
- **Technological Fragmentation:** EU's strict digital standards may clash with India's cost-sensitive digital models.

**Way Forward**

- **De-risking Frameworks:** ADB, Exim Bank, and European Investment Bank collaboration on guarantee mechanisms.
- **India–EU Talent Mobility Scheme:** Finalise the proposal for digital work visas and AI fellowships.
- **Green Infrastructure Certification:** Introduce mutual certification for climate-compliant corridors.

**Prelims MCQ**

- Q. Consider the following statements about the India–EU Connectivity Partnership:
1. It includes cooperation in digital, energy, and physical infrastructure.
  2. The partnership is linked to EU's Global Gateway strategy.
  3. India is a partner in the European Green Deal framework.
- Which of the statements are correct?
- (a) 1 and 2 only                      (b) 2 and 3 only  
(c) 1 and 3 only                      (d) 1, 2 and 3

**Answer: A**

(India is not part of EU Green Deal but participates in aligned climate programs.)

## India's Semiconductor Ecosystem 2025: Achievements, Challenges & Global Ties

**Pre-Shots**

- As of July 2025, India's first commercial semiconductor fabrication unit in Gujarat's Dholera has begun trial production.

- India signed new MoUs with Japan, US, and Taiwan to ensure secure chip supply chains.
- The India Semiconductor Mission (ISM) has disbursed over ₹12,000 crore in PLI-linked grants by July 2025.

**Mains Connect****Context**

India has historically been dependent on imports for semiconductors—an essential input in electronics, defense, automobile, and telecom sectors. To reduce this vulnerability, the Semicon India programme (launched in 2021) has seen major breakthroughs in 2025, including the start of India's first foundry, global investment inflow, and strategic collaborations with semiconductor majors.

In July 2025, the Ministry of Electronics and IT (MeitY) released a Progress White Paper outlining developments and setting new targets for 2030.

**Key Developments in 2025**

Area	Key Update (June–July 2025)
Foundry Operationalization	Micron Technology (US) initiated trial runs at Gujarat fab unit
Design Ecosystem	23 semiconductor design startups incubated under C-DAC Bengaluru
PLI Incentives	₹2,800 crore disbursed to Tata Elxsi, ₹3,200 crore to Vedanta JV
Skill Building	New chip design curriculum launched across 100 technical institutes
Strategic MoUs	India–Japan MoU on semiconductor packaging signed in July 2025

**Why It Matters for India**

- **Strategic Autonomy:** Reduced dependency on Taiwan and China amid global chip wars.
- **Export Potential:** Target to capture 6% of global chip packaging market by 2030.
- **Employment:** Over 25,000 direct and 1 lakh indirect jobs expected by 2027.
- **National Security:** Domestic chips critical for military, cyber, and space systems.

**Data Crunch**

Indicator	2022	2024	July 2025
Semiconduct or Demand (India)	\$24 bn	\$35 bn	\$42 bn
Imports Dependency	100%	93%	85%
PLI Disbursal	₹0	₹3,500 cr	₹12,000 cr
No. of Design Startups	5	14	23

## C.C. JUNE &amp; JULY '25

Strategic MoUs	2	5	8
----------------	---	---	---

**Ethics Connect (GS4)**

**Caselet:** A consortium receiving PLI subsidy is found subcontracting to **foreign suppliers with questionable labour standards**.

**Discussion:** Raises issues of public accountability, ethical supply chains, and misappropriation of state subsidies.

**Challenges to Semiconductor Sovereignty**

- Capital Intensity: Estimated cost of one foundry ~₹25,000 crore; requires long gestation.
- Talent Gap: Only 18% of engineers trained in chip fabrication, per AICTE 2025 Report.
- Geopolitical Risk: US-China chip war could impact open global collaborations.
- Utility Infrastructure: High water, cleanroom, and power requirements strain local capacities.

**Way Forward**

- Cluster-Based Model: Extend Dholera model to Karnataka, Tamil Nadu & Odisha.
- Talent Bridge: Quad Semiconductor Skill Council launched with US, Japan, Australia.
- R&D Push: Semiconductor Research Incubation Fund (SRIF) with ₹1,500 crore corpus for AI and quantum-grade chips.

**Prelims MCQ**

Q. Which of the following are correct about India's Semiconductor Mission?

1. It offers production-linked incentives for chip manufacturing.
2. It includes a Design Linked Incentive (DLI) scheme.
3. It is monitored by the Reserve Bank of India.

**Options:**

- (a) 1 and 2 only      (b) 1 and 3 only  
(c) 2 and 3 only      (d) 1, 2 and 3

**Answer: A**

(RBI is not involved; MeitY and ISM handle the programme.)

**India's Electric Mobility Push: EV Adoption, Charging Infra & Policy Shifts****Pre-Shots**

- EV sales in India crossed 50 lakh units as of June 2025, with a YoY growth of 39%.
- Ministry of Heavy Industries launched FAME III (Faster Adoption and Manufacturing of Electric Vehicles in India) in July 2025 with a ₹14,000 crore outlay.
- A national-level EV Battery Swapping Policy and a Carbon Credit Trading Platform went live in July.

**Mains Connect****Context**

India's electric mobility journey has entered a new phase in 2025 with strong policy backing, manufacturing incentives, and green finance. With **global crude oil volatility and domestic pollution concerns**, EVs are central to India's clean energy roadmap and the **Nationally Determined Contributions (NDCs)**.

The launch of FAME III, new charging station mandates under **Energy Efficiency Services Ltd. (EESL)**, and integration with the Smart Cities Mission reflects an infrastructure-first strategy.

**Key Highlights of 2025**

Focus Area	2025 Update
FAME III Launched	₹14,000 crore budget, focus on commercial EVs and rural charging infra
EV Sales Milestone	50 lakh units sold (cars, bikes, autos) in H1 2025
Battery Swapping	Standardization norms notified, 15 pilot cities launched under NITI Aayog model
Carbon Credit Market	EV manufacturers now eligible for carbon trading tokens
Green Financing	₹7,800 crore in green bonds raised for EV infrastructure in Tier-2 cities

**Why It Matters**

- Pollution Control: EVs will cut over 8 million tonnes of CO<sub>2</sub> annually by 2030 (MoEFCC, 2025).
- Energy Independence: 23% reduction in diesel consumption in urban fleets projected by 2027.
- Rural Connectivity: Solar-charging micro-grids in 3,000+ rural EV stations.
- Skill Generation: Creation of 2 lakh+ green jobs under EV Technician Training Program (Skill India 2025).

**Data Crunch**

Parameter	2022	2024	July 2025
EV Share in Total Auto Sales	1.6%	6.2%	9.5%
Charging Stations	2,000	6,847	10,233
Battery Swapping Stations	450	820	1,700
EV Loan Interest (avg.)	10.5%	9.2%	7.5%
FAME Budget Utilisation	₹4,938 cr	₹7,212 cr	₹10,765 cr

**Ethics Connect (GS4)**

**Caselet:** A battery swapping unit skips environmental compliance checks to save costs.

**Discussion:** Raises ethical dilemmas around compliance vs competitiveness, safety standards, and environmental responsibility.



## C.C. JUNE &amp; JULY '25

**Challenges Ahead**

- Battery Recycling: India lacks lithium and cobalt recycling infrastructure.
- Grid Overload: Increased urban charging demand strains distribution networks.
- Affordability Gap: Entry-level EVs still cost 25–30% more than petrol/diesel counterparts.
- Informal EV Sector: E-rickshaws and small cargo EVs operate largely outside regulatory radar.

**Way Forward**

- National Battery Passport System: To track lifecycle of EV batteries and enhance reuse.
- Urban Mobility Credits: Reward EV usage in congested zones via digital credit wallets.
- Make in India Push: Develop indigenous lithium-ion cell and solid-state battery tech via DRDO-ISRO-IIT collaboration.

**Prelims MCQ**

Q. Which of the following correctly describes India's EV initiatives?

1. FAME III focuses on commercial EV segments.
2. EV manufacturers are included in the Carbon Credit Trading Scheme.
3. India's battery swapping policy is being implemented in all states from 2025.

**Options:**

- (a) 1 and 2 only                      (b) 1 and 3 only  
(c) 2 and 3 only                      (d) 1, 2 and 3

**Answer: A**

(Battery swapping pilots are currently in 15 cities, not all states.)

### **"Kan-Kan Mein Ram": Cultural Diversity Through the Prism of Ramayana Traditions**

**Pre-Shots**

- On 23 July 2025, INTACH, in partnership with the Ministry of Culture, released the documentary "Kan-Kan Mein Ram" in Delhi.
- Celebrates diverse Ramayana renditions: Yakshagana (Karnataka), Sattariya (Assam), Lanka Podi (Odisha), Ravan Chhaya puppetry, and more.
- Aims to showcase India's living cultural diversity and strengthen cultural diplomacy.

**Mains Connect****Why it matters**

1. Cultural Pluralism: The Ramayana transcends regional lines, showcasing India's layered traditions.

2. Soft Power Projection: It enhances India's global image during initiatives like "Azadi Ka Amrit Mahotsav".
3. Artisan Empowerment: Source communities get recognition, helping sustain local heritage ecosystems.

**UPSC Angles**

- Polity & IR: Relevance of intangible cultural heritage in global diplomacy.
- Culture: Understanding syncretic roots of Indian mythological narratives.
- Social Justice: Role of documentaries in amplifying tribal/folk voices.

**Data Crunch**

Art Form	State	Highlights
Yakshgana	Karnataka	Puppetry + dance drama
Sattariya	Assam	Monastery-based classical dance
Lanka Podi & Ravan Chhaya	Odisha	Shadow puppetry traditions
Mewati Bhajang	Chhattisgarh	Ritual performance art
Ramnam Samaj	Chhattisgarh	Community folk traditions

**Suggested infographic:** Map of India with art form spread, plus performance snapshots.

**Ethics Angle****Prompt:**

You're a curator at a national cultural institution. Traditional custodians want changes to the documentary's narrative. How do you respect their creative and narrative rights while ensuring historical authenticity?

**Prelims MCQ**

- Q. "Kan-Kan Mein Ram" documentary highlights which of the following?
- (a) Minor translations of Ramayana into tribal languages
  - (b) Folk and classical performances across multiple states
  - (c) Transnational adaptations in Southeast Asia
  - (d) None of the above

**Answer: B**

### **Live Telecast & Festivalization: Maharashtra's Ganeshotsav 2025 Goes Global**

**Pre-Shots**

## C.C. JUNE & JULY '25

- Maharashtra has designated Ganeshotsav a state festival, initiating live telecasts of aarti and awarding best mandals.
- A global drone show at Girgaum Chowpatty is planned to enhance visibility.

### Mains Connect

#### Relevance

1. **Cultural Identity:** State designation and live broadcasts elevate local festivals to collective heritage.
2. **Tourism Economy:** DRON shows + awards boost cultural tourism and artisanal livelihoods.
3. **Media Ethics:** Balance between devotion and spectacle.

#### UPSC themes

- **Secularism:** Shared public access to religious events.
- **Federalism & Governance:** Role of states in heritage and finances.
- **Economy:** MICE segment and festival tourism potential.

### Data Crunch

Metric	2024 Estimate	2025 Projection
Number of mandals in Mumbai	~2,500	2,600+
Live telecast centres	0	40+ (mandals/Civic)
Estimated viewers (TV + digital)	~10 million	~18 million
Global drone shows planned	0	1 (Girgaum)

### Ethics Angle

#### Prompt:

Should public funding be used to broadcast or sponsor religious events? How do you balance religious inclusivity, public interest, and constitutional secularism?

### Prelims MCQ

- Q. Which Maharashtra festival was declared a state festival in 2025 with live telecast events?
- (a) Diwali
  - (b) Ganeshotsav
  - (c) Navratri
  - (d) Holi

**Answer: B**

## Harihar National Theatre Festival 2025: Fusion of Monsoon, Tradition & Academia

### Pre-Shots

- Held 24–29 July 2025 at Ravindra Bhavan, Bhopal; over 200 artists from 15 drama schools participated.
- Featured classical and experimental productions, workshops, and seminars on Natyashastra.

### Mains Connect

#### Significance

1. **Cultural Continuity:** Revives ancient performing arts and classical theatre pedagogy.
2. **Urban Cultural Hub:** Bhopal emerges as regional cultural capital.
3. **Education & Tradition:** Academic interface held by Padma Shri Puru Dadheech and workshops teaching theory and practice of classical theatre.

### Data Crunch

Parameter	2024 Status	2025 Highlight
Drama schools participating	~10	15+ schools, national
Festival duration	5 days	6 days (24–29 July)
Artist count	~150	200+
Workshops (Natyashastra-based)	3	5

### Ethics Angle

As a festival organizer, you aim to include Amchi (traditional tribal theatre). But it risks cultural appropriation. How to integrate it ethically, preserving authenticity and ensuring custodianship?

### Prelims MCQ

- Q. The Harihar National Theatre Festival (July 2025) was hosted in which city?
- (a) Delhi
  - (b) Bhopal
  - (c) Kolkata
  - (d) Chennai

**Answer: B**

## Government Notifies Inter-services Organisations Rules, 2025

**Theme: Internal Security | Defence Reforms | Military Synergy**

### Pre-Shots: Why in News?

In June 2025, the Ministry of Defence notified the Inter-services Organisations (Command, Control & Discipline) Rules, 2025, operationalizing provisions under the Inter-Services Organisations Act, 2023. This marks a pivotal move towards jointness and integration among India's three defence services—Army, Navy, and Air Force.

### Mains Connect: Why It Matters for UPSC

- GS Paper II (Polity & Governance): Institutional Reforms, Centre-State Security Mechanisms

- GS Paper III (Internal Security): Modernisation of Armed Forces, Defence Reforms, Civil-Military Relations

### Key Highlights

Feature	Details
Objective	Enhance discipline, cohesion, and command accountability across tri-services formations
Legal Backing	Framed under Inter-Services Organisations Act, 2023 (effective from May 2024)
Applicability	Gives Commanding Officers of tri-services commands powers of disciplinary control over personnel from other services
Key Institutions	Includes organisations such as Andaman & Nicobar Command, Defence Cyber Agency, etc.
Impact	Smooth chain of command in joint structures and better preparedness during hybrid threats

### Data Crunch

- India has 3 key operational tri-services organisations:
  - Andaman & Nicobar Command
  - Strategic Forces Command
  - Integrated Defence Staff
- Chief of Defence Staff (CDS) coordinates these initiatives under the Theatre Command reform plan.

### Ethics & Strategic Dimensions

- Promotes efficiency and unity of command, reducing inter-service rivalry.
- Enhances civil-military synergy, aligning with democratic control of armed forces.
- Strategic imperative for joint theatre commands, a key agenda of long-term military reform.

### Sample Prelims MCQ

- Q. The Inter-services Organisations Act, 2023 enables which of the following?
- Empowering tri-services Commanders to exercise disciplinary powers across all services
  - Direct operational control by CDS over theatre commands
  - Automatic supersession of service-specific laws
- Choose the correct answer:
- (a) 1 only                      (b) 1 and 2 only  
(c) 2 and 3 only              (d) All of the above

**Answer: (A)**

As India moves toward integrated theatre commands, the 2025 Rules will be crucial in ensuring jointness in action, improved interoperability, and optimal resource utilisation.

It lays the legal groundwork for India's future combat structure amid growing hybrid and multi-domain threats.

## Andaman & Nicobar Command – India's Forward Post in the Indo-Pacific

**Theme: Internal Security | Maritime Strategy | Geopolitical Deterrence**

### Pre-Shots: Why in News?

In June 2025, India stepped up strategic activities at the Andaman and Nicobar Command (ANC) with enhanced infrastructure, interoperability exercises, and naval deployments. The tri-services command has gained renewed geopolitical significance amid increasing Chinese naval presence in the Indo-Pacific and heightened regional maritime competition.

### Mains Connect: Why It Matters for UPSC

- GS Paper II (International Relations): Indo-Pacific strategy, maritime diplomacy
- GS Paper III (Internal Security): Strategic commands, force projection, national security infrastructure
- GS Paper I (Geography): Strategic location of islands, chokepoints, trade routes

### Key Highlights

Feature	Details
Location	Andaman & Nicobar Islands: ~1200 km from Indian mainland, closer to Southeast Asia
Command Type	India's only tri-services command: integrates Army, Navy & Air Force
Chokepoint Control	Provides oversight over Malacca Strait, gateway to 40% of world trade
Recent Upgrades	Extension of runways (Car Nicobar, Campbell Bay), submarine docking facilities, enhanced radar grid
Joint Exercises	Coordinated patrols with US, France, Australia; focus on HADR, anti-submarine warfare, cyber defence

### Data Crunch

Parameter	Detail
Area Controlled	~750 km of Indian Ocean frontier
Trade Through Malacca Strait	~70,000 ships annually
Radar/ISR Installations	Revamped with coastal radar chain (ISRO & DRDO)
Budget Allocation (2025–26)	₹2,500 crore for infrastructure expansion

### Strategic Importance

## C.C. JUNE &amp; JULY '25

1. Watchtower of the Indo-Pacific: India's power projection across Southeast Asia and deterrence against encroachment.
2. Deterrence to Chinese Influence: Counterbalances China's "String of Pearls" strategy and submarine patrols in the Bay of Bengal.
3. Blue Economy Gateway: Acts as a logistic hub for regional connectivity, trade security, and island tourism.
4. Security Synergy: Enhances coastal surveillance, joint operations, and information fusion between Navy, IAF, and Army.

**Ethical & Governance Lens**

- Environmental Balance: Development of strategic infrastructure in ecologically sensitive islands demands sustainable construction norms (EIA).
- Tribal Rights: Indigenous communities like the Great Andamanese and Sentinelese must be protected under FRA, 2006.
- Civil-Military Convergence: Need to integrate civilian logistics and digital infra for disaster response and connectivity.

**Ethics Add-on (GS4 Angle)**

"Security is not just about territory, but about people, culture, and ecosystems."

Relevance of Raj Dharma in civil-military equilibrium and conservation-sensitive planning.

**Prelims MCQ**

- Q. Consider the following statements about the Andaman & Nicobar Command (ANC):
1. It is the only integrated theatre command in India.
  2. It has authority over the entire eastern seaboard.
  3. It plays a critical role in monitoring the Malacca Strait.
- Which of the above are correct?
- (a) 1 and 2 only
  - (b) 1 and 3 only
  - (c) 2 and 3 only
  - (d) 1, 2 and 3

**Answer: (B)**

The Andaman & Nicobar Command is evolving into India's eastern fortress. As the Indo-Pacific becomes the world's geopolitical pivot, enhancing dual-use infrastructure, civil-military coordination, and sustained ecological safeguards will be key to maximizing its strategic and developmental potential.

**Fibre Optic Drones – Tactical Technology in Surveillance & Communication**

**Theme: Internal Security | Defence Technology | Surveillance Infrastructure**

**Pre-Shots: Why in News?**

In June 2025, India's defence innovation ecosystem saw successful trials of fibre optic-enabled drones that offer uninterrupted, real-time data transmission even in electromagnetically denied zones. These drones are being integrated into Indian Army border surveillance units and DRDO's battlefield communication programmes.

**Mains Connect: Why It Matters for UPSC**

- GS Paper III (Internal Security): Use of technology in border management, surveillance, and secure communication
- GS Paper II (Governance): Ethical implications, privacy, and use of AI in national security
- GS Paper III (Science & Technology): Emerging defence tech, indigenous innovation

**Key Highlights**

Feature	Description
What are Fibre Optic Drones?	Unmanned aerial vehicles tethered to ground stations via ultra-lightweight fibre optic cables
Unique Advantage	Immunity to signal jamming and GPS spoofing—ideal for high-conflict zones
Extended Endurance	Operate up to 24 hours continuously without battery depletion (power via tether)
Data Transmission	High-speed, secure, real-time streaming of video and telemetry
Developers	DRDO, private defence start-ups under iDEX, Bharat Electronics Ltd. (BEL)

**Data Crunch**

Parameter	Value
Max Altitude	500–1000 metres
Data Rate	Up to 100 Gbps via fibre
Endurance	24–36 hours
Range	Tethered up to 5–10 km radius
Deployment Zones	LoC (J&K), Eastern Ladakh, North-East insurgency corridors

**Strategic and Tactical Advantages**

1. **Real-Time ISR (Intelligence, Surveillance, Reconnaissance):** Live visuals for anti-infiltration operations, convoy protection.
2. **Jamming Resistance:** Effective in electronic warfare zones—no dependency on radio frequencies.

## C.C. JUNE &amp; JULY '25

- Secure Data Backbone:** Transmissions remain encrypted and intrusion-proof—critical for strategic assets.
- Disaster Response Use:** Real-time footage for NDRF operations during floods, earthquakes, forest fires.
- Night Vision & Thermal Imaging:** Added payloads allow 24/7 surveillance in inaccessible terrain.

**Ethics & Governance Perspective**

- Privacy Concerns:** Usage in civilian areas must adhere to due process under Personal Data Protection frameworks.
- Civil-Military Dual Use:** Potential for smart city surveillance and crowd management—requires clear guidelines.
- Innovation Ecosystem:** Supports "Atmanirbhar Bharat" and defence start-ups through iDEX and Make-II procurement routes.

**Ethics Add-on (GS4 Angle)**

"Technological surveillance must enhance safety, not suppress civil liberties."

Application of Utilitarian Ethics in balancing national security with democratic accountability.

**Sample Prelims MCQ**

- Q. Which of the following are advantages of fibre optic-tethered drones?
- Jamming-proof communication
  - Unlimited range of operation
  - Real-time data relay
  - Higher payload capacity
- Select the correct answer using the code below:
- (a) 1 and 2 only                      (b) 1, 3 and 4 only  
(c) 1 and 3 only                      (d) 1, 2, 3 and 4

Answer: (C)

**Way Forward**

Fibre optic drones symbolize the next frontier in secure surveillance and tactical battlefield awareness. India must scale indigenous production, ensure deployment protocols, and institutionalize ethical guardrails for their widespread use—both in military and civil security ecosystems.

**SIPRI Annual Report 2025 – India's Defence Standing in the Global Arms Landscape**

**Theme: Internal Security | Defence Preparedness | Strategic Affairs**

**Pre-Shots: Why in News?**

The Stockholm International Peace Research Institute (SIPRI) released its Annual Report 2025 in June. India retained its position as the world's top arms importer, accounting for nearly 11% of total global arms imports (2020–2024). Simultaneously, India's defence expenditure was the fourth highest in the world, reflecting its rising security concerns

amid regional threats and aspirations for strategic autonomy.

**Mains Connect: Why It Matters for UPSC**

- GS Paper II: International Institutions – SIPRI, regional security cooperation
- GS Paper III: Internal Security – defence preparedness, self-reliance in defence, threats from neighbourhood
- Essay: India's military diplomacy and defence-industrial complex

**Key Highlights from the Report**

Indicator	Data Point
India's Import Share	11% of global arms imports
Largest Arms Suppliers	Russia (36%), France (29%), USA (11%)
India's Global Defence Spending Rank	4th (after USA, China, Russia)
Shift in Supply Sources	Russia's share fell from 65% (2011–15) to 36% (2020–24)
Diversification	Rise in imports from France and Israel
Indigenous Arms Production	2024–25 saw ₹1.3 lakh crore in domestic defence manufacturing

**Data Crunch: India's Defence Positioning**

Parameter	2015	2020	2025
Import Dependency	68%	60%	~58%
Indigenous Production	₹63,000 cr	₹84,000 cr	₹1.3 lakh cr
Private Sector Share	<10%	~20%	~27%
Export Value	₹2,000 cr	₹11,000 cr	₹21,000+ cr

**Concerns Highlighted by SIPRI**

- Overdependence on Imports: Despite Make in India, India's top 3 suppliers still account for over 75% of imports.
- Slow Modernisation: Capital procurement still lags; only 27% of defence budget is for capital expenditure.
- Geopolitical Vulnerabilities: Border threats (China, Pakistan) necessitate urgent technology acquisition.
- Delays in Defence Procurement Process (DPP): Bureaucratic bottlenecks, unclear offset guidelines.

**Strategic and Policy Implications**

- Need for Self-Reliance (Atmanirbharta):** More investment in indigenous platforms like Tejas, K9 Vajra, Arjun MBT, and Akash missile.
- Private Sector Engagement:** Encourage public-private partnerships under iDEX and DAP 2020.



## C.C. JUNE & JULY '25

- Technology Transfer: India must push for Transfer of Technology (ToT) in all major defence deals (e.g., Rafale, S-400).

### Ethics Connect (GS4 Angle)

Justice in Defence Allocation: Equitable defence spending must not compromise social spending. Ethical budgeting requires balancing guns vs butter.

Accountability in Arms Procurement: Ethical decision-making in arms purchases ensures transparency and reduces the risk of corruption.

### Sample Prelims MCQ

- Q. According to SIPRI's 2025 report, which country was the largest arms exporter to India between 2020 and 2024?
- USA
  - France
  - Israel
  - Russia

**Answer: (D)**

### Model Mains Question

"India's defence preparedness is increasingly shaped by import dependence and evolving geopolitical compulsions." In light of the SIPRI 2025 Report, examine the implications for India's defence strategy and Atmanirbhar Bharat mission. (250 words)

### Way Forward

- Institutional Reforms: Streamline Defence Acquisition Council (DAC), implement audit-based oversight.
- Boost R&D Funding: DRDO and startups must be encouraged for AI, robotics, drone warfare.
- Strategic Autonomy: Reduce import dependency by focusing on critical tech (engines, sensors, avionics).
- Military Diplomacy: Leverage defence ties with Quad, France, Israel for tech cooperation.

India's military edge cannot rely solely on imports. The SIPRI report serves as a strategic reminder to shift from being the **world's top importer to becoming a net defence exporter by 2047**.

### Adi Karmyogi Programme – Tribal Talent Meets Administrative Training

**Theme:** Governance | Tribal Welfare | Inclusive Administration

### Pre-Shots: Why in News?

The Government of India, in collaboration with the Ministry of Tribal Affairs and LBSNAA, recently launched the Adi Karmyogi Programme, aimed at grooming tribal youth for administrative and leadership roles within the tribal areas, as part of the Viksit Bharat @2047 initiative.

### Mains Connect

- GS II – Welfare schemes for vulnerable sections of the population
- GS II – Role of civil services in a democracy
- GS I – Tribal development and social empowerment

### Key Features of the Adi Karmyogi Programme

Component	Details
Launched by	Ministry of Tribal Affairs + LBSNAA
Objective	To create a pool of trained tribal youth as change agents in their communities
Mode	Online + Residential (blended) training
Duration	4-week structured module
Participants	Tribal graduates from remote areas (pan-India)

### Aims and Objectives

- Bridge administrative and developmental gaps in tribal areas
- Nurture tribal role models to lead grassroots change
- Develop soft skills, digital literacy, and public administration basics
- Familiarize tribal youth with constitutional provisions, rights, and schemes

### Unique Features

- LBSNAA-Driven Curriculum – Focused on local governance, PESA Act, RTI, FRA, and grassroots schemes
- Community Outreach Module – Youth engage with real tribal governance challenges
- Mentoring by Civil Servants – Interaction with IAS, IPS, and IFoS officers posted in tribal belts
- Follow-up Digital Mentorship – Tracking learning and impact in real time

### Data Crunch

Indicator	Value
No. of Scheduled Tribes (Census 2011)	705 officially recognized
ST Population	10.45 crore (8.6% of India's population)
Literacy Rate of STs	59% (vs 73% national avg)
Areas covered under PESA	10 states (incl. Chhattisgarh, MP, Odisha)

### Ethics Connect (GS IV)

"The test of good governance is not how it serves the powerful, but how it empowers the weakest." – Ethical

## C.C. JUNE &amp; JULY '25

leadership in administration must reflect inclusivity and equity.

**Ethics Angle:**

The programme aligns with Nishkama Karma (selfless service) and Antyodaya (upliftment of the last person), embedding tribal voices into India's governance narrative.

**Challenges Ahead**

- Limited digital access in tribal belts may restrict participation
- Language and cultural gaps in centralised training
- Need for state-level replication and convergence with Tribal Sub-Plan and Eklavya Schools

**Way Forward**

- Expand the programme through Skill India & Digital India missions
- Partner with NGOs and Van Dhan Vikas Kendras for outreach
- Institutionalise career mentoring for tribal youth in administration

**Prelims Practice**

Q. Which of the following are true about the Adi Karmyogi Programme?

1. It is run jointly by the Ministry of Tribal Affairs and UPSC
2. It trains tribal youth in digital governance and leadership
3. It is currently applicable only to PESA states

**Options**

- (a) 1 and 2 only
- (b) 2 only
- (c) 2 and 3 only
- (d) 1, 2, and 3

**Answer: (B)**

**Mains Practice Question**

Tribal under-representation in governance remains a concern despite constitutional safeguards. Critically assess how programmes like Adi Karmyogi can address this governance gap. (10M, 150 words)

## Goa Achieves Full Functional Literacy – A Model for Inclusive Lifelong Learning

**Theme: Social Justice | Education | Governance Reform**

**Pre-Shots: Why in News?**

In June 2025, Goa became India's first state to achieve 100% functional literacy, as per the metrics outlined under the New India Literacy Programme (NILP). This milestone reflects a shift from mere literacy to "functional and digital literacy" as envisioned under NEP 2020.

**Mains Connect**

- GS II – Issues relating to development and management of education
- GS II – Government policies and interventions for development
- GS I – Social empowerment and regional development

**What is Functional Literacy?**

Unlike conventional literacy (ability to read and write one's name), functional literacy implies the ability to read, write, understand basic numeracy, use digital tools, and participate in civic life effectively.

**Key Features of Goa's Campaign**

Parameter	Details
Implementing Agency	Goa State Literacy Mission Authority (GSLMA)
Supported by	Ministry of Education, GoI under NILP
Duration	Phased rollout from 2022–2025
Focus	Elderly, marginalised, tribal, and women learners
Tools Used	Lok Shiksha Kendras, e-content, WhatsApp-based micro-learning

**Data Crunch**

Indicator	Value
Adult Literacy in Goa (15+ age)	95.3% (NSSO 2018)
Digital Literacy among adults	100% coverage claimed (Goa 2025)
Rural–Urban literacy gap	Less than 3%
National avg. adult functional literacy	77.7% (NILP data 2023)

**Innovative Approaches Adopted**

- Door-to-Door Literacy Drives in collaboration with SHGs, panchayats, and CSCs
- Use of "Each One, Teach One" method and Anganwadi involvement
- Integration with Digital India Literacy Mission and PMGDISHA
- Real-time monitoring through Literacy Tracker App (state-specific)

**Best Practices for Replication**

State	Innovation
Kerala	Athulyam Scheme for post-literacy campaigns
Odisha	Mission Shakti for SHG-led education
Tamil Nadu	Arivoli Iyakkam (People's Science Movement)

Goa

Micro-digital learning through WhatsApp videos and vernacular e-modules

**Ethics Connect (GS IV)**

"Education is the most powerful weapon you can use to change the world." – Nelson Mandela

Goa's success illustrates ethical governance through empowerment of the last mile via education and digital inclusion.

**Social Equity and Justice Angle**

- Empowers marginalised communities, elderly women, and migrant workers
- Promotes active citizenship, financial literacy, and digital inclusion
- Bridges urban-rural and gender digital divide

**Challenges Ahead**

- Sustaining learner interest post-certification
- Need for second-tier goals: lifelong learning, numeracy, employability
- Resource constraints in other states may hinder replication
- Monitoring learning outcomes, not just participation

**Way Forward**

- Expand the NILP to become a National Lifelong Learning Programme
- Use AI-based literacy tools in regional languages
- Embed literacy modules in MNREGA, NRLM, and rural skilling schemes
- Partner with ed-tech platforms for scalable functional literacy

**Prelims Practice Question**

Q. Consider the following features about Functional Literacy:

1. It includes reading, writing, and basic numeracy
2. It focuses on civic participation and digital literacy
3. It targets only the school-going population

Which of the above is/are correct?

- (a) 1 and 2 only      (b) 1 and 3 only  
(c) 2 and 3 only      (d) 1, 2 and 3

**Answer: (A)**

**Mains Practice Question**

What do you understand by functional literacy? Discuss its significance in achieving inclusive and sustainable development in India. (10M, 150 words)

## Sahitya Akademi Yuva and Bal Puraskar 2025 – Nurturing Literary Excellence Among the Young

**Theme: Culture | Youth Empowerment | Indian Literature**

**Pre-Shots: Why in News?**

In July 2025, the Sahitya Akademi announced the recipients of the Yuva Puraskar and Bal Sahitya Puraskar, recognising young literary talents in 24 Indian languages for their contributions to contemporary and children's literature.

**Mains Connect**

- GS I – Indian culture – literature and heritage
- GS II – Government schemes for vulnerable sections
- GS II – Development and empowerment of youth

**About the Awards**

Award Name	Purpose	Target Group
Yuva Puraskar	To encourage young writers (under 35) for outstanding literary works	Emerging writers in Indian languages
Bal Sahitya Puraskar	To promote literature for children	Writers creating literature for young readers

- **Instituted by:** Sahitya Akademi, autonomous body under Ministry of Culture
- **Coverage:** 24 recognised Indian languages including Bodo, Maithili, Santali, Urdu, and Dogri

**Highlights of 2025 Edition**

Award	Total Recipients	Key Languages Recognised	Prominent Themes
Yuva Puraskar	24	Hindi, Tamil, Malayalam, Santali, Dogri	Identity, Resistance, Nature, Urban Youth
Bal Puraskar	24	Bengali, Manipuri, Marathi, Kannada, Urdu	Folk tales, Science fiction, Values, Environment

Notably, several tribal and northeastern writers were awarded, strengthening linguistic and regional diversity.

**Data Crunch**

Parameter	Value
Total languages recognised by Sahitya Akademi	24
Total awards (Yuva + Bal) each year	48
Age limit for Yuva Puraskar	Below 35 years
Year of Institution (Yuva & Bal)	2011

**Cultural Impact and Relevance**

- Promotes literary creativity and innovation among the youth

**C.C. JUNE & JULY '25**

- Preserves and revitalizes vernacular and endangered languages
- Encourages child-centric reading habits through diverse narratives
- Fosters a pan-Indian literary consciousness

**Ethics Connect (GS IV)**

"Literature is the mirror of society."

These awards instill moral imagination, cultural empathy, and narrative pluralism, essential in a multilingual democratic society.

**Issues and Criticism**

- Limited translation efforts across languages hinder national reach
- Perceived urban or language elitism in some award selections
- Poor availability of award-winning books in rural and digital formats
- Infrequent linkage with school curricula or public library systems

**Suggestions & Way Ahead**

- Launch Translation Mission under Sahitya Akademi to cross-pollinate languages
- Use AI-based translation tools to convert award-winning works into all 22 Schedule VIII languages
- Create a National Digital Literary Repository with open access to award-winning literature
- Partner with NCERT, CBSE and SCERTs to integrate Bal Puraskar content in children's curriculum
- Promote regional literary festivals to showcase young voices

**Best Practice**

Karnataka's "Kuvempu Bhasha Bharati": Translates Kannada literature into other Indian languages, a model for integration under Sahitya Akademi.

**Prelims Practice Question**

- Q. With reference to the Sahitya Akademi Yuva Puraskar, consider the following statements:
1. It is awarded to writers under 35 years of age.
  2. It is given in all 22 languages listed in the Eighth Schedule of the Constitution.
  3. The award includes a cash prize and a plaque.
- Which of the above statements is/are correct?
- (a) 1 and 3 only                      (b) 2 and 3 only  
(c) 1 and 2 only                      (d) 1, 2 and 3

**Answer: (A)**

**Mains Practice Question**

Discuss the significance of Sahitya Akademi Yuva and Bal Puraskar in preserving and promoting literary traditions in Indian languages. (10M, 150 words)

**Adi Karmyogi Programme – A Civil Services Outreach for Tribal Youth****Pre-Shots: Why in News?**

In June 2025, the Department of Personnel & Training (DoPT) launched the Adi Karmyogi Programme under Mission Karmayogi to increase tribal participation in the civil services and bridge regional-social gaps in governance representation.

**Mains Connect**

- GS II – Welfare schemes for vulnerable sections (tribals)
- GS II – Role of civil services in democracy
- GS II – Social justice and inclusive governance

**About the Programme**

Feature	Description
Implementing Body	DoPT under Ministry of Personnel, Public Grievances and Pensions
Target Group	Tribal students and aspirants (esp. from aspirational districts and ST-majority states)
Objective	Enable exposure to governance, administration, and build readiness for civil services
Activities	Field visits, mentorship by IAS officers, interactive governance sessions, career guidance

- Launched under Mission Karmayogi: India's National Programme for Civil Services Capacity Building (NPCSCB)
- Collaboration with State Tribal Welfare Departments and Tribal Research Institutes

**Objectives and Key Focus Areas**

- Promote governance inclusivity by motivating tribal youth towards administrative careers
- Create role models in tribal communities through mentorship and experiential learning
- Align with India@2047 goals of diversity, representation, and last-mile administration

**Data Crunch**

Indicator	Value
Share of STs in India's population (Census 2011)	8.6%
Share of STs in All-India Services (as per UPSC 2023)	~5.2%
Target States in Phase 1	Odisha, Chhattisgarh, Jharkhand, MP, Telangana
Associated Districts	Aspirational districts under NITI Aayog

**Why It Matters**

- Addresses the underrepresentation of STs in governance
- Ensures community participation in policy formulation and implementation
- Breaks the cycle of marginalisation by enabling aspirational pathways
- Strengthens last-mile service delivery in tribal belts

**Ethics Connect (GS IV)**

"Justice will not be served until those who are unaffected are as outraged as those who are." – Benjamin Franklin

The Adi Karmyogi programme reflects the ethical ideal of affirmative action with dignity – ensuring capability development rather than tokenism.

**Challenges and Limitations**

- Tribal youth face educational disadvantage, language barriers, and digital divide
- Low awareness and lack of localized mentoring ecosystems
- Program scale remains pilot-level – limited outreach to all potential beneficiaries
- Possible trust deficit due to historical state-tribe tensions in some regions

**Way Forward**

- Expand to all Scheduled Tribe-dominated blocks and villages
- Integrate with NCERT, SCERTs and EMRS (Eklavya Model Residential Schools)
- Involve retired ST civil servants as community mentors
- Combine with scholarships, mock interview support, and skill-building courses
- Enable regional language coaching and digital content for UPSC/State PCS preparation

**Case Study**

"Sankalp se Siddhi" Initiative in Dantewada (Chhattisgarh) – used local role models and structured coaching to boost tribal UPSC success rates. The Adi Karmyogi programme can replicate this model nationally

**Prelims Practice Question**

Q. Which of the following statements is/are true about the Adi Karmyogi Programme?

1. It is implemented by the Ministry of Tribal Affairs.
  2. It targets aspirants from Scheduled Tribes for mentoring and exposure to civil services.
  3. It is a sub-component of Mission Karmayogi.
- (A) 1 and 2 only  
(B) 2 and 3 only  
(C) 1 and 3 only  
(D) 1, 2 and 3

**Answer: (B)**

**Mains Practice Question**

How can the Adi Karmyogi Programme serve as a tool for inclusive governance and tribal empowerment? Suggest measures for its effective implementation. (10M, 150 words)

**Goa Achieves Full Functional Literacy – A National Milestone in Inclusive Education**

Theme: Social Development | Education | Literacy | Governance

**Pre-Shots: Why in News?**

In June 2025, Goa was declared the first Indian state to achieve full functional literacy under the New India Literacy Programme (NILP), marking a significant milestone in India's adult education and inclusive literacy efforts.

**Mains Connect**

- GS II – Education: Issues and Initiatives
- GS II – Welfare schemes for vulnerable sections
- GS II – Governance and social empowerment

**What is Functional Literacy?**

Literacy Type	Description
Conventional Literacy	Ability to read and write one's name and basic sentences
Functional Literacy	Ability to use reading, writing, numeracy, and digital tools in everyday life (e.g., banking, health access, communication)

Goa's functional literacy drive emphasized real-life skills, not just academic learning, ensuring citizens can participate meaningfully in social and economic activities.

**Key Features of Goa's Campaign**

Feature	Details
Lead Implementing Agency	State Directorate of Literacy and Continuing Education
Supported by	New India Literacy Programme (2022–27) of MoE
Methodology	Door-to-door surveys, digital assessments, volunteer teaching
Target Group	People aged 15 years and above who missed formal education
Enabling Tech	Use of Diksha app, WhatsApp classes, micro videos, and community radios

**Data Crunch**

Metric	Value
Adult Literacy in Goa (2011)	87.4% (above national avg.)



## C.C. JUNE & JULY '25

Functional Literacy (2025)	100% (declared by MoE)
National Literacy Rate (2011)	74.04%
New India Literacy Programme Budget (2022–27)	₹1037 crore

### Why It Matters

- Bridges the last-mile gap in adult education
- Boosts financial literacy, e-governance participation, and digital inclusion
- Enhances women's empowerment, especially among self-help groups (SHGs)
- Provides second-chance learning opportunities to marginalized groups

### Ethics Connect (GS IV)

"Literacy is a bridge from misery to hope." – Kofi Annan  
Goa's achievement reflects ethical governance committed to human dignity, lifelong learning, and capability enhancement.

### Special Focus: NILP (New India Literacy Programme)

Component	Objective
Foundational Literacy	Reading, writing, numeracy for adults
Life Skills	Health, hygiene, financial and legal literacy
Vocational Education	Skill development and local enterprise awareness
Basic Education	Completion of class 3 to 8 equivalent education
Continuing Education	Digital, civic, and financial capabilities

NILP operates through volunteer-based teaching and technology platforms (e.g., DIKSHA, e-Samarth).

### Challenges Ahead

- Sustainability: Maintaining literacy and digital usage over time
- Replication: Scaling Goa's model to large, rural, and multilingual states
- Gender Gap: Women still form majority of the illiterate adult population nationally
- Migration: Urban migration creates shifting literacy baselines

### Way Forward

- Integrate functional literacy with employment programs and SHGs
- Provide certification and incentives for adult learners
- Promote community-driven libraries and knowledge hubs

- Use panchayat-level digital centres to extend reach
- Align with National Education Policy 2020 on adult education

### Case Study

"Sakshar Bharat Mission" (2010–2018) in Kerala empowered 1.5 crore neo-literates through women-led campaigns and peer learning. Goa's success builds on such precedents by integrating digital methods and state ownership.

### Prelims Practice Question

- Q. Which of the following statements about the New India Literacy Programme is/are correct?
1. It targets individuals aged 18 and above.
  2. It includes digital and financial literacy as part of its curriculum.
  3. It is being implemented only in rural areas.
- (A) 2 only  
(B) 1 and 2 only  
(C) 2 and 3 only  
(D) 1, 2 and 3

**Answer: (A)**

### Mains Practice Question

Despite significant progress in school education, adult functional literacy remains a challenge. Discuss how the New India Literacy Programme can serve as a tool for inclusive and transformative education in India. (10M, 150 words)

## Sahitya Akademi Puraskar 2025 – Celebrating Literary Excellence Across India

### Pre-Shots: Why in News?

The Sahitya Akademi announced the 2025 Puraskar awardees across 24 languages for their outstanding literary contributions, reaffirming India's linguistic and cultural plurality.

### Mains Connect

- GS I – Indian Culture: Art Forms, Literature
- GS II – Role of Institutions in Cultural Preservation
- Essay Paper – Cultural Integration through Language & Literature

### About the Award

Feature	Details
Instituted	1955 by Sahitya Akademi
Objective	Recognizing literary merit in 24 Indian languages
Prize	₹1,00,000 + Engraved copper plaque + Citation
Languages Covered	22 Schedule VIII + English & Rajasthani

The award is given for works published in the previous five years, judged by a jury of eminent literary personalities.

#### Data Crunch: Sahitya Akademi 2025 Snapshot

Metric	Value
Total awardees	24
Women awardees	6
Regional language awardees	16
Literary genres represented	Poetry, Novels, Essays, Criticism

#### Some Key Winners (2025)

Language	Author	Work Title	Genre
Hindi	Vishal Bharadwaj	Raag Bhairavi	Novel
Kannada	Dr. Veena Bhatt	Anveshan e	Criticism
Urdu	Rahat Shah	Zindagi Ke Rang	Poetry
Assamese	Anubhav Neog	Xubhash	Short Stories
English	Meera D'Souza	Fragments of Silence	Essays

#### Role of Sahitya Akademi

An autonomous body under the Ministry of Culture, the Akademi performs the following:

- Publishes and promotes literature in 24 languages.
- Hosts Annual Literary Festivals, Translation Workshops, Writers' Meets.
- Supports translation of classics and contemporary works across languages.
- Strengthens literary identity through awards like Bhasha Samman, Translation Prize, and Fellowships.

#### Why It Matters

- Upholds India's linguistic diversity and cultural richness.
- Motivates regional writers to preserve folk narratives, dialectal wisdom.
- Strengthens the intellectual and critical discourse through literature.
- A tool for nation-building through soft power and shared heritage.

#### Ethics and Value Link

"A nation's character is found in its stories and songs." – Rabindranath Tagore

The Puraskar fosters ethical engagement through words, sensitizing society to empathy, justice, and identity.

#### Challenges in Literary Ecosystem

- Digital preference vs traditional reading patterns.

- Decline in vernacular literary publishing houses.
- Gender and caste disparities in recognition and access.
- Market dominance of English and commercial genres.

#### Way Forward

- Introduce fellowships for regional language scholars.
- Digitally archive and translate winning works.
- Conduct regional literary outreach in tribal, conflict-prone zones.
- Incentivize school-based reading programs tied to Sahitya Akademi works.

#### Ethical & Constitutional Anchors

- Article 29 & 30: Rights of minorities to preserve language and culture.
- Directive Principles: Encourage preservation of cultural heritage (Art 51A(f))

#### Mains Practice Question

Discuss the role of literary awards like the Sahitya Akademi Puraskar in preserving India's cultural and linguistic diversity. (10M, 150 words)

#### Prelims Practice Question

Q. Consider the following statements about the Sahitya Akademi Puraskar:

1. The award is given only for prose and poetry.
2. It is conferred by the Ministry of Education.
3. The award covers 22 official languages only.

Which of the statements is/are correct?

- (A) 1 and 2 only (B) 3 only  
(C) None (D) 1 and 3 only

**Answer: (C)**

**(Explanation:** The award covers all forms of literature including criticism; it is conferred by Sahitya Akademi under Ministry of Culture and includes 24 languages.)

## Global Tobacco Epidemic Report 2025 – India's Progress and Remaining Gaps

#### Pre-Shots: Why in News?

The World Health Organization (WHO) released the Global Tobacco Epidemic Report 2025, evaluating country-wise efforts in tobacco control. India has shown commendable progress in tobacco cessation infrastructure but lags in implementing some key WHO-recommended policies.

#### Mains Connect

- GS II – Health Policies, Government Interventions
- GS III – Public Health and SDGs
- GS IV – Ethics in Public Policy (Corporate Lobby vs Public Good)

#### Data Crunch – India's Tobacco Burden & Progress

Indicator	Data (India)
Tobacco Users	26 crore (approx., NFHS-5)

## C.C. JUNE & JULY '25

Annual Deaths due to Tobacco	13.5 lakh (WHO 2025 est.)
WHO MPOWER Score (Max 5)	4 (2025 report)
Cigarette Tax Share	~54% (WHO recommends ≥75%)
Tobacco-related Healthcare Cost	₹1.04 lakh crore annually

### What is MPOWER Framework?

Element	Meaning	India's (2025)	Status
M	Monitor tobacco use and prevention policies	Strong national surveillance	
P	Protect from tobacco smoke	Smoking banned in public	
O	Offer help to quit	34 de-addiction centres	
W	Warn about dangers	Graphic warnings on packs	
E	Enforce bans on advertising	Partial; surrogate ads exist	
R	Raise taxes	Below WHO threshold (54%)	

### Highlights from WHO Report 2025

- India is among highest tobacco-consuming countries, but efforts like COTPA Amendment Rules (2020) and smoke-free cities initiative have improved the compliance environment.
- Gaps remain in:
  - Enforcement of smoking bans
  - Regulation of surrogate advertising
  - E-cigarette awareness and cessation campaigns

### Policy Steps by India

- NTCP (National Tobacco Control Programme) – operational in all states
- Prohibition of E-cigarettes Act, 2019
- COTPA Amendments – increasing fine, pack warnings, educational campaigns
- Ayushman Bharat Health and Wellness Centres – tobacco cessation integrated

### Why Tobacco Control is Crucial

- Public Health Impact: Leading cause of preventable deaths
- Economic Drain: Healthcare costs > tax revenue from tobacco
- Demographic Risk: Youth-targeted marketing and addiction patterns

- Ethical Concerns: Conflict between revenue generation and public welfare

### Ethics Angle: Profit vs Public Good

"Selling poison legally cannot be justified in a welfare state."  
— Justice Kurian Joseph (Retd)

The tobacco industry often uses CSR & lobbying to gain legitimacy. Policymakers must uphold constitutional morality over market interests.

### Ethical & Constitutional Anchors

- Article 47: Duty of the State to raise the level of nutrition and the standard of living and to improve public health.
- SDG Target 3.a: Strengthen the implementation of the WHO FCTC (Framework Convention on Tobacco Control).

### Way Forward

- Raise taxes on tobacco to 75%+ of retail price.
- Introduce plain packaging and complete ad bans.
- Launch youth-focused anti-tobacco awareness campaigns.
- Integrate tobacco cessation into primary health services.
- Penalize surrogate advertising in media and OTT platforms.

### Mains Practice Question

Evaluate the effectiveness of India's tobacco control policies in the context of the WHO Global Tobacco Epidemic Report 2025. Suggest measures to bridge the compliance gap. (10M, 150 words)

### Prelims Practice Question

- Q. The WHO MPOWER strategy is often seen in relation to which of the following?
- Global pandemic preparedness
  - Antimicrobial resistance control
  - Tobacco control
  - Child nutrition framework

**Answer: (C)**

## International Day of Yoga 2025 – Global Reach and India's Soft Power

### Pre-Shots: Why in News?

On 21 June 2025, millions of people around the world came together to celebrate the 11th United Nations' International Day of Yoga, embracing the theme "Yoga for One Earth, One Health."

### Mains Connect

- GS I – Indian Culture (Yoga as Intangible Heritage)
- GS II – India's Soft Power and Diplomacy
- GS IV – Values in Public Life (Mindfulness, Self-discipline)

**What Makes Yoga a Tool of Soft Power?**

1. Civilizational Ethos: Yoga as a philosophical, spiritual, and physical tradition rooted in Patanjali's Yoga Sutras and Bhagavad Gita.
2. UN Recognition: Adopted by 177 countries as a global day.
3. Global Acceptance: Yoga is practiced by ~300 million people worldwide.
4. Economic Soft Power: Yoga tourism, ayurveda markets, and wellness exports.

**Government Initiatives in 2025**

- AYUSH Ministry & ICCR Coordination for global outreach.
- Launch of Y-Break App 2.0: Micro yoga sessions for working professionals.
- MyLife App for virtual yoga practice in rural/remote areas.
- Fit India + Yoga Day Convergence campaign in 400+ districts.
- Special yoga drills in schools under NEP 2020 Health Curriculum.

**Ethical Angle: Yoga as a Lifestyle Philosophy****Yoga promotes:**

- Self-discipline (Yama and Niyama)
- Balance between material and spiritual growth
- Stress reduction and collective harmony

"Yoga is the journey of the self, through the self, to the self."  
— Bhagavad Gita

**Yoga in Global Diplomacy**

Country	Yoga Adoption Highlight
USA	Yoga part of school physical ed curriculum
UAE	Yoga sessions held in Burj Khalifa, Dubai
France	National-level workshops with ICCR support
Kenya	Yoga included in community health programs
Russia	Moscow Yoga Festival supported by Indian mission

**Challenges Ahead**

- Commercialisation vs Authenticity: Yoga branded as fitness trend, losing spiritual depth.
- Lack of Global Standards: Fragmented training protocols.
- Access Gaps: Rural and tribal areas have limited awareness or practice.

**Way Forward**

- Promote Yoga Certification Board for authentic trainers.
- Integrate yoga therapy in AYUSH health centres.

- Build community yoga hubs in rural India.
- Boost Yoga–Ayurveda–Tourism circuits under Incredible India 2.0.

**Mains Practice Question**

How has Yoga emerged as a tool of India's soft power diplomacy? Examine the challenges in globalising its practice while retaining its cultural authenticity. (10M, 150 words)

**Prelims Practice Question**

Q. Consider the following statements about the International Day of Yoga (IDY):

1. It was first proposed by India in the United Nations General Assembly.
2. It is celebrated on the birth anniversary of Patanjali.
3. The first International Day of Yoga was observed in 2015.

Which of the above is/are correct?

- (A) 1 and 2 only  
(B) 1 and 3 only  
(C) 2 and 3 only  
(D) 1, 2 and 3

**Answer: (B)**

**Gwada Negative – newly classified EMM-negative blood group system****Pre-Shots: Why in News?**

"Gwada negative" is the informal name for the newly classified EMM-negative blood group system, officially registered as [ISBT042](#), and is defined by the rare absence of the EMM antigen on red blood cells, a high-incidence antigen normally found in nearly all people. In June 2025, French scientists announced the discovery of the 48th human blood group system, named "Gwada Negative", after identifying it in a 68-year-old woman from Guadeloupe (Caribbean). She is the only known person in the world with this blood type.

**What is "Gwada Negative"?**

- Discovered during routine pre-surgical tests in 2011, later confirmed through high-throughput DNA sequencing in 2019.
- Recognized by the International Society of Blood Transfusion (ISBT) as the 48th blood group system.

- Caused by a mutation in the PIGZ gene, affecting proteins on red blood cells.
- Named "Gwada" after the Creole nickname for Guadeloupe.

### Way Forward

- Strengthen rare blood registries in India.
- Boost genomic research and AI-based medical diagnostics.
- Promote international cooperation via WHO & ISBT on transfusion safety.

### Key Features

- Ultra-Rare → Only one carrier identified globally.
- Compatibility → The woman is compatible only with her own blood; no donor exists.
- Health Implications → Linked to mild intellectual disability and pregnancy complications (two stillbirths).
- Scientific Value → Provides new insights into transfusion medicine and human genetics.

### Significance

- Medical → Advances understanding of transfusion safety and rare blood management.
- Genetic Research → Reveals how rare mutations shape human diversity.
- Global Health → Highlights the need for international rare blood donor registries.

### India Relevance

- India has its own history of rare blood types, e.g., Bombay Blood Group discovered in Mumbai (1952).
- Strengthens the case for rare blood registries under NACO & NBTC.
- Supports Genome India Project and genomics-based personalized medicine.

### Ethics & Society Angle

- Raises questions on bioethics, data protection, and genetic privacy.
- Reflects the uniqueness of human biology → philosophical parallel to India's "Unity in Diversity."

### Prelims MCQ

Q. The term "Gwada Negative," recently in the news, refers to:

- A rare earth mineral
- A newly discovered blood group
- A WTO trade policy exception
- A genetic disorder in plants

Answer: (b) A newly discovered blood group

### Mains Question (GS-3, Science & Tech)

Discuss the significance of the discovery of the "Gwada Negative" blood type in advancing transfusion medicine and genomic research. Compare with India's experience with the Bombay Blood Group.

## Prime Ministers' Museum and Library – Celebrating India's Democratic Journey

### Pre-Shots: Why in News?

The Prime Ministers' Museum and Library (PMML) in New Delhi witnessed a surge in public interest in June–July 2025, coinciding with India's 78th Independence anniversary planning. The institution reflects India's journey through the lens of its Prime Ministers.

### Mains Connect

- GS I – Indian Heritage & Modern History
- GS II – Democratic Institutions and Political Legacy
- GS IV – Values, Leadership and Public Service

### About the Museum

- Located in the Teen Murti Bhawan complex, New Delhi.
- Formerly Nehru Memorial Museum & Library (NMML), revamped in 2022.
- Features 15 galleries representing all Prime Ministers, from Nehru to Modi.



**Institutional Highlights**

Feature	Details
Opening Date	21st April 2022
Tech Used	Holograms, AI-based narration, VR walkthroughs
No. of PMs Showcased	15 (till 2024; updated regularly)
Key Themes	Decision-making, challenges, key policies
Archives	1.5 lakh+ documents, speeches, and oral histories

**Purpose & Message**

- Celebrate democratic continuity despite ideological diversity.
- Educate citizens on leadership styles, policy shifts, and crucial transitions (e.g., 1991 reforms, Pokhran, Demonetisation, etc.).
- Promote youth engagement through interactive exhibits and internships.

**Ethical Lens**

- Fosters inclusive narrative of Indian polity.
- Recognises both achievements and dilemmas of each PM.
- Builds institutional memory and public accountability.

**Global Parallels**

Country	Equivalent Institution
USA	Presidential Libraries (e.g. JFK, Reagan)
UK	Churchill War Rooms
South Africa	Mandela Foundation Museum

**Recent Initiatives**

- Digital India Archive portal for online access to speeches.
- PM Intern Program for political science students.
- Workshops on Constitutional history and nation-building.

**Way Forward**

- Add regional PM contributions to state museums.
- Integrate 360-degree immersive storytelling for students.
- Collaborate with universities for leadership curriculum.

**Mains Practice Question**

How does the Prime Ministers' Museum and Library contribute to strengthening democratic values and political literacy in India? (10M, 150 words)

**Prelims MCQ**

- Q. With reference to the Prime Ministers' Museum and Library, consider the following:
1. It is located at Rashtrapati Bhawan in Delhi.

2. It features archives and holograms of all Prime Ministers.
3. It was formerly called the Nehru Memorial Museum and Library.

Which of the above is/are correct?

- (A) 1 and 2 only (B) 2 and 3 only  
(C) 1 and 3 only (D) 1, 2 and 3

Answer: (B)

### NAVYA Initiative – Empowering Adolescent Girls Through Skills

**Pre-Shots: Why in News?**

In June 2025, the Government of India launched the NAVYA Initiative in Sonbhadra district, Uttar Pradesh. The scheme seeks to equip adolescent girls (16–18 years, Class 10 pass and above) with vocational and life-skills training, supporting India's long-term vision of Viksit Bharat@2047.

- Full Form: Nurturing Aspirations through Vocational Training for Young Adolescent Girls.
- Launched by: Ministry of Skill Development & Entrepreneurship (MSDE) and Ministry of Women & Child Development (MWCD).
- Coverage: Pilot in 27 aspirational districts across 19 states, including the North-East.
- Framework: Implemented under PMKVY 4.0 (Pradhan Mantri Kaushal Vikas Yojana).
- Target Group: Adolescent girls, 16–18 years, minimum education up to Class 10.

**Key Features**

1. Vocational Training in Emerging Sectors:
  - AI, cyber security, digital marketing, green jobs.
  - Drone assembly, smartphone repair, CCTV installation, graphic design.
  - Beauty & wellness, tailoring, handicrafts.
2. Holistic Capacity-Building (Supplementary 7-hour module):
  - Health, hygiene, and nutrition.

- POSH & POCSO awareness.
- Digital literacy, financial awareness.
- Communication and confidence building.

3. Forward Linkages: Internships, apprenticeships, employment pathways, and entrepreneurship support.

### Significance

- Bridging Gender Gaps → Addresses India's low female labour force participation (~25%, PLFS 2024).
- Harnessing Demographic Dividend → Targets India's 253 million adolescents, the world's largest cohort.
- Inclusive Growth → Focus on aspirational districts ensures benefits for underserved regions.
- Global Commitments → Aligns with SDG 4 (Quality Education) & SDG 5 (Gender Equality).

### India Relevance

- Complements Beti Bachao Beti Padhao, Skill India Mission, and PM Vishwakarma.
- Supports NEP 2020's focus on vocational education for adolescents.
- Builds human capital in remote and disadvantaged areas, critical for Viksit Bharat@2047.

### Way Forward

- Expand the scheme beyond pilot districts in a phased manner.
- Forge industry partnerships to ensure job placements.
- Strengthen monitoring & evaluation systems for measurable outcomes (employment, income rise, skill certification).

### Prelims MCQ

Q. The NAVYA Initiative, recently launched by the Government of India, primarily aims to:

- (a) Provide nutrition supplements to adolescent girls
- (b) Offer vocational and life-skills training to adolescent girls
- (c) Promote higher education for women in STEM

- (d) Establish residential schools for rural girls

Answer: (b) Offer vocational and life-skills training to adolescent girls

### Mains Question (GS-2 / Social Justice)

Discuss the significance of the NAVYA Initiative in bridging gender gaps in employability and human capital development. How does it support India's vision of Viksit Bharat@2047?

## GI Tagged Kolhapuri Chappals – Preserving Craft, Empowering Artisans

### Pre-Shots: Why in News?

The Kolhapuri Chappals, a centuries-old handcrafted leather footwear from Maharashtra and Karnataka, continue to enjoy Geographical Indication (GI) tag protection, with renewed efforts by the Development Commissioner (Handicrafts) to enhance global branding and export potential in 2025.

### Mains Connect: Why is it Important?

- GS1 – Indian Culture: Handicrafts, heritage crafts
- GS3 – Economy: MSMEs, traditional industries, exports
- GS2 – Welfare Schemes: Artisan livelihoods, IP protection

### Background

Kolhapuri chappals are hand-stitched leather footwear, traditionally made using vegetable-tanned leather, with intricate designs. They reflect regional identity, heritage, and sustainable craft practices. The chappals received GI tag in 2019 under the Geographical Indications of Goods (Registration and Protection) Act, 1999, and cover districts in Karnataka (Bagalkot, Belgaum, Dharwad) and Maharashtra (Kolhapur, Sangli, Satara, Solapur).

### Why GI Matters

Benefit	Description
Market Recognition	Protects traditional identity and branding of the product globally
Legal Protection	Prevents unauthorised usage of the craft name
Artisan Empowerment	Helps artisans access credit, marketing, and export schemes
Export Promotion	Boosts India's soft power and Make-in-India outreach

### Critical Analysis Challenges

- Declining artisan population due to low income and lack of youth interest
- Middlemen exploitation, leaving artisans underpaid
- Limited digital and global marketing strategies

## C.C. JUNE &amp; JULY '25

- Environmental challenges in vegetable tanning

**Opportunities**

- E-commerce boost via ONDC and government artisan platforms
- Scope for eco-labeling and green branding
- GI branding under schemes like Ambedkar Hastshilp Vikas Yojana
- Can contribute to One District One Product (ODOP) strategy

**Data & Reports**

- India has over 400 GI-tagged products, of which ~80 are textiles and handicrafts.
- MSME Ministry (2024): Handicrafts sector provides employment to 68 lakh people, with women constituting over 55%.
- TRIFED Report 2023: Crafts with GI tags have seen a 30–40% increase in visibility and sales post-registration. International Parallels
- Italy's Tuscan Leather Goods and Japan's Kyoto Fans – examples of how GI crafts are globalised through innovation and digital storytelling.

**Ethics Connect (GS4)**

- Promotes intergenerational equity – preserving traditional knowledge.
- Encourages dignity of labour and ethical consumption.
- Aligns with SDG 8 (Decent Work & Economic Growth) and SDG 11 (Sustainable Communities).

**MCQ**

- Q. The GI Tag for Kolhapuri Chappals applies to which two states?
- (a) Maharashtra and Tamil Nadu
  - (b) Maharashtra and Karnataka
  - (c) Karnataka and Gujarat
  - (d) Kerala and Maharashtra

**Answer: (b)****Mains Question**

- Q. GI tagging offers a promising avenue to preserve traditional crafts while uplifting artisan livelihoods. Discuss with reference to Kolhapuri Chappals and other similar examples. (10M)

**'Green Arabia' Hypothesis – Palaeoclimate Lessons from the Arabian Peninsula****Why in News?**

Recent research from the Max Planck Institute, published in Nature, suggests that the Arabian Peninsula—now mostly desert—was once a lush, green region supporting early human migration out of Africa.

**What is the 'Green Arabia' Hypothesis?**

The hypothesis suggests that during specific humid periods in the Pleistocene epoch (approximately 400,000 to 55,000

years ago), Arabia witnessed intermittent "Green" phases. These were marked by monsoonal rainfall, freshwater lakes, and savannah-type ecosystems—allowing human and animal migration routes from Africa to Eurasia.

**Scientific Relevance**

- Archaeological evidence (stone tools, fossils) found in ancient lake beds across the Rub al Khali desert.
- Speleothem records and isotope data corroborate climate oscillations.
- The monsoonal expansion from the Indian Ocean played a critical role.

**Geographical Implications**

- Highlights the role of monsoonal variability in shaping human migration.
- Challenges assumptions of Arabia as a perpetual desert.
- Reveals palaeo-river networks (now buried under sand dunes).

**India Link**

Understanding historic monsoon behavior across Arabia and India helps improve models for current Southwest Monsoon dynamics and climate resilience planning in the Indian subcontinent.

**Prelims Pointer**

- Arabian Peninsula: bordered by Red Sea, Persian Gulf, and Arabian Sea.
- Rub al Khali (Empty Quarter): one of the world's largest sand deserts.
- Speleothem: cave mineral deposit, key to palaeoclimate studies.

**Mains Connect**

- Q: Discuss the significance of palaeoclimate studies in understanding human migration and contemporary climate patterns. Illustrate with reference to the 'Green Arabia' hypothesis.

**Infographic Suggestion**

Map of Arabian Peninsula showing ancient riverbeds, migration corridors, and monsoon influence zones.

**Taiwan Strait – A Geo-strategic Flashpoint in the Indo-Pacific****Why in News?**

Amid increasing tensions between China and Taiwan in 2025, the Taiwan Strait has witnessed record levels of military drills and naval deployments by both the U.S. and China.

**What is the Taiwan Strait?**

- A 180-km wide waterway separating the island of Taiwan from mainland China.
- Connects the East China Sea to the South China Sea.

**C.C. JUNE & JULY '25**

- Acts as a global maritime chokepoint and shipping route.

**Strategic Relevance**

- One of the world's busiest sea lanes: Over 88% of the world's largest ships pass through it.
- Crucial for semiconductor exports, especially from Taiwan's TSMC.
- Claimed by China as internal waters; contested internationally.

**India's Stake**

- Part of Indo-Pacific maritime architecture.
- Stability in the Strait affects global trade and semiconductor supply chains critical for India's tech industry.
- Reflects on India's Quad diplomacy and maritime security posture.

**Prelims Pointer**

- Taiwan Strait lies between Taiwan and Fujian province of China.
- Major naval bases: Kaohsiung (Taiwan) and Fuzhou (China).

**Mains Connect**

Q: Examine the geopolitical significance of the Taiwan Strait and its implications for India's Indo-Pacific policy.

**Infographic Suggestion**

Map showing Taiwan Strait, East/South China Sea, global shipping lanes.

**Cook Islands – Geopolitical Ripples in the South Pacific****Why in News?**

India has extended developmental cooperation to the Cook Islands, following the 3rd FIPIC (Forum for India-Pacific Islands Cooperation) summit in 2025.

**What Are the Cook Islands?**

- A group of 15 islands in the South Pacific Ocean.
- Free association with New Zealand; uses New Zealand dollar.
- Member of FIPIC and active in climate diplomacy.

**Relevance**

- Important for India's Act East and Indo-Pacific strategy.
- Facing sea-level rise, pushing for global climate finance.
- Hosts exclusive economic zones (EEZ) rich in tuna and minerals.

**India Link**

- India has provided solar projects, desalination units, and capacity building.
- Shows India's role as a climate partner in the Global South.


**Prelims Pointer**

- Capital: Avarua (island of Rarotonga).
- Located northeast of New Zealand, west of French Polynesia.

**Mains Connect**

Q: Discuss the strategic and developmental significance of India's outreach to Pacific Island nations like the Cook Islands.

**Infographic Suggestion**

 Map showing Pacific Islands, FIPIC countries, climate vulnerability index.

**Luxor – Egypt's Ancient City Back in Global Focus****Why in News?**

Luxor recently hosted the unveiling of several ancient tombs and mummies as part of Egypt's global archaeological revival and heritage tourism push.

**Where is Luxor?**

- Located on the east bank of the Nile River, Egypt.
- Known as the site of ancient Thebes, Egypt's capital during the New Kingdom.

**Historical Significance**

- Home to iconic monuments: Karnak Temple, Luxor Temple, Valley of the Kings.
- Symbolizes urban continuity and sacred geography.
- UNESCO World Heritage Site.

**India Link**

- India and Egypt share strong civilizational ties, highlighted during PM Modi's 2023 visit.
- Egyptian heritage restoration is a model for India's own conservation practices (e.g., Hampi, Ajanta).

**Prelims Pointer**

- Luxor = "world's greatest open-air museum".
- Valley of Kings = burial site of Pharaohs like Tutankhamun.

**Mains Connect**

Q: How can global examples like Luxor help India balance heritage tourism with conservation?

**Infographic Suggestion**

Timeline of ancient Egypt; annotated map of Luxor's monuments.

**Enhanced Rock Weathering (ERW) Technique – A Climate Solution from the Soil****Why in News?**

## C.C. JUNE & JULY '25

In July 2025, India's Council for Scientific and Industrial Research (CSIR) began pilot trials of Enhanced Rock Weathering (ERW) in dryland farms of Maharashtra to assess carbon sequestration benefits.

### What is Enhanced Rock Weathering?

- A geoengineering approach where finely crushed silicate rocks (like basalt) are spread on soil to accelerate natural carbon capture.
- As the rock reacts with rainwater and CO<sub>2</sub>, it forms bicarbonates that wash into oceans and store carbon for millennia.

### Benefits

- Captures CO<sub>2</sub> directly from the atmosphere.
- Improves soil health and agricultural productivity.
- Reduces ocean acidification over time.

### Challenges

- High energy use in mining and grinding rocks.
- Need for localized research on efficacy, weather patterns, and soil types.
- Risk of trace metal accumulation in ecosystems.

### India's Relevance

- Potential for ERW in Deccan Plateau and dryland regions.
- Aligns with India's carbon neutrality goals and Mission LiFE (Lifestyle for Environment).


### Prelims Pointer

- ERW uses olivine or basalt rock dust.
- It is a form of carbon dioxide removal (CDR) under negative emissions technology.

### Mains Connect

Q: What is Enhanced Rock Weathering? Discuss its scope and challenges in India's climate policy.

### Infographic Suggestion

-  Soil-rock-CO<sub>2</sub> interaction flowchart + India map with basalt-rich zones.

## Qatar – India's Energy Ally in the Gulf

### Why in News?

India and Qatar signed a 25-year LNG supply agreement in 2025, cementing Qatar's role as India's largest liquefied natural gas supplier.

### Geopolitical Profile

- Small peninsular Gulf nation bordering Saudi Arabia and surrounded by the Persian Gulf.
- Holds the third-largest natural gas reserves globally.
- Major player in global LNG trade, via Ras Laffan port.

### India-Qatar Ties

- India imports nearly 8.5 MTPA of LNG from Qatar.
- 7 lakh Indians work in Qatar – one of India's largest remittance sources.

- Collaborations in defence, cyber security, and energy investments.

### Strategic Importance

- Part of India's extended neighbourhood policy and West Asia outreach.
- Central to India's energy security, especially for urban and industrial use.


### Prelims Pointer

- Capital: Doha
- Qatar hosted FIFA World Cup 2022, known for LNG exports and sovereign wealth fund (QIA).

### Mains Connect

Q: Evaluate the significance of Qatar for India's energy security and Gulf diplomacy.

### Infographic Suggestion

-  Map of Gulf with energy routes; pie chart of India's LNG imports.

## Seven Summits – Geographical Milestone with Geopolitical Resonance

### Why in News?

In June 2025, Indian mountaineer Sneha Rawat became the youngest Asian woman to complete the Seven Summits challenge.

### What are the Seven Summits?

The highest mountains on each of the seven continents:

1. Asia – Mount Everest (Nepal/Tibet)
2. South America – Aconcagua (Argentina)
3. North America – Denali (USA)
4. Africa – Kilimanjaro (Tanzania)
5. Europe – Mount Elbrus (Russia)
6. Antarctica – Mount Vinson
7. Australia/Oceania – Mount Kosciuszko or Carstensz Pyramid

### Geographical Learning

- Demonstrates plate tectonics, alpine ecosystems, and climate gradients.
- Promotes interest in geotourism and adventure diplomacy.

### India Link

- Increasing participation of Indian climbers in polar and transcontinental expeditions.
- Enhances India's soft power, gender empowerment, and global mountaineering leadership.

### Prelims Pointer

- Mount Elbrus is west of the Caucasus, not in the Alps.
- Carstensz Pyramid is often included instead of Kosciuszko for Oceania.



## C.C. JUNE &amp; JULY '25

**Mains Connect**

Q: How does mountaineering promote geographical understanding and India's global engagement?

**Infographic Suggestion**

World map highlighting all Seven Summits + photos of each peak.

**Paraguay – Strategic Crossroads of South America****Why in News?**

In July 2025, India and Paraguay signed a bilateral agreement on pharma exports and hydro-power cooperation, marking a deepening of South–South relations.

**Geographical Profile**

- Landlocked country in central South America, bordered by Brazil, Bolivia, and Argentina.
- Traversed by the Paraguay River, part of the La Plata Basin – crucial for trade and biodiversity.

**Key Features**

- Capital: Asunción
- Major River: Paraguay River, lifeline for inland water transport.
- Climate: Subtropical with significant agricultural zones – soybean, beef, and sugar.

**India–Paraguay Relations**

- Emerging trade in medicines, IT, and agriculture.
- India imports stevia, and explores joint ventures in renewable energy.
- Paraguay supports India's permanent UNSC seat bid.

**Prelims Pointer**

- Paraguay River is one of the few navigable inland rivers in South America.
- Not part of Amazon basin; belongs to La Plata basin.

**Mains Connect**

Q: Examine the strategic potential of India's engagement with Latin American countries like Paraguay.

**Infographic Suggestion**

South America map with river basins and landlocked countries highlighted.

**Heat Dome – When the Atmosphere Turns into an Oven****Why in News?**

In June–July 2025, North India experienced record-breaking temperatures due to a persistent heat dome over the Indo-Gangetic Plains.

**What is a Heat Dome?**

- A high-pressure system traps warm air underneath like a lid on a pot.
- Sunlight enters, but the heat gets trapped, intensifying the temperature over several days.

**Key Features**

- Causes prolonged heatwaves and dry conditions.
- Linked to jet stream anomalies and climate change.
- Often worsens urban heat islands and health impacts.

**India-Specific Impact**

- Delhi, UP, Rajasthan crossed 45°C in 2025.
- Surge in heatstroke cases, power demand, and crop stress.
- Disproportionately affects urban poor, elderly, and outdoor workers.

**Mitigation Measures**

- Urban greening and cool-roof policies.
- IMD's Heatwave Action Plans.
- Improved public awareness and early warning systems. Prelims Pointer
- Heat domes arise from stationary high-pressure ridges in the mid-troposphere (typically ~5–7 km altitude).

**Mains Connect**

Q: Discuss the formation and impacts of heat domes in the context of India's changing climate.

**Infographic Suggestion**

🌀 Diagram of heat dome with atmospheric layers + India map with 2025 heatwave zones.

**Hodeidah Port – Yemen's Lifeline in a Conflict Zone****Why in News?**

Hodeidah Port was in headlines in July 2025 due to renewed Red Sea tensions between Houthi rebels and coalition forces, affecting maritime routes critical to India's trade.

**Geographical Significance**

- Located on the Red Sea coast of Yemen.
- Strategically close to Bab-el-Mandeb Strait, a chokepoint connecting the Red Sea to the Gulf of Aden and Indian Ocean.

**Why it Matters**

- Handles 70% of Yemen's food and fuel imports.
- Crucial for India's energy trade – over 30% of oil passes through Bab-el-Mandeb.
- Disruptions here impact global shipping insurance, freight cost, and energy prices.

**Conflict Context**

- Controlled partially by Houthi forces since 2015.

## C.C. JUNE & JULY '25

- UN-supervised ceasefire (Stockholm Agreement) fragile; humanitarian concerns rising.

### India's Relevance

- Security of trade via Red Sea–Suez Canal route.
- Part of India's SAGAR doctrine (Security and Growth for All in the Region).
- Evacuation routes during Operation Rahat (2015) also used this corridor.

### Prelims Pointer

- Bab-el-Mandeb lies between Djibouti and Yemen.
- Connects Mediterranean-Indian Ocean via Suez Canal.

### Mains Connect

Q: How do maritime chokepoints like the Bab-el-Mandeb affect India's energy and trade security?

### Infographic Suggestion

Map of Red Sea, Bab-el-Mandeb, Hodeidah + Suez Canal route to India.

## Shipki La – A Strategic Mountain Pass on the India-China Border

### Why in News?

In July 2025, reports highlighted the need to upgrade border infrastructure around Shipki La Pass amid increasing strategic surveillance activities by China in Himachal Pradesh's Kinnaur district.

### What is Shipki La?

- A high-altitude mountain pass in Himachal Pradesh's Kinnaur district.
- Connects India's NH-5 with the Tibet Autonomous Region (China).
- Situated on the ancient Indo-Tibetan trade route.
- Lies across the Sutlej River gorge.

### Strategic Significance

- One of three open Indo-China border passes (others: Nathu La in Sikkim, Lipu Lekh in Uttarakhand).
- Used by traders before the 1962 Sino-Indian War.
- Currently no trade route, but under discussion for revival.

### Security Concerns

- Proximity to areas of Chinese military infrastructure buildup.
- Low military and border infrastructure in this region compared to Ladakh or Arunachal.
- Focus area for Vibrant Village Programme and border development plans.

### Prelims Pointer

- Shipki La is in Himachal Pradesh, not Uttarakhand or Arunachal.
- Located near Khab village, where Spiti and Sutlej meet.

### Mains Connect

Q: Discuss the strategic and infrastructural relevance of mountain passes such as Shipki La for India's border security and regional development.

### Infographic Suggestion

Annotated map showing Shipki La, Lipulekh, Nathu La, and India–Tibet border trade corridors.

## Green Arabia Hypothesis – Was the Arabian Peninsula Once Green?

### Why in News?

In 2025, new paleo-climatic research from Oxford and Saudi universities provided deeper evidence supporting the "Green Arabia Hypothesis" – indicating periodic wet phases in the Arabian desert's past.

### What is the Green Arabia Hypothesis?

- Suggests that the Arabian Peninsula, currently a desert, went through humid climatic phases during interglacial periods.
- Supported by discovery of lakes, riverbeds, tools, and fossils in Saudi Arabia and Oman.

### Key Findings

- ~400,000 to 50,000 years ago, monsoon-like rainfall supported grasslands, lakes, and human settlements.
- Stone tools, fossils of hippos and elephants found in now-arid zones.
- Migration corridors opened for early humans from Africa to Asia.

### Significance

- Rewrites our understanding of prehistoric human migration.
- Shows climate fluctuation in deserts and impact on ecosystems.
- Useful for paleo-environmental modeling and desertification studies.

### India Relevance

- Offers comparative lens to India's Thar Desert evolution.
- Helps model long-term monsoon patterns and global migration links.

### Prelims Pointer

- Arabian Peninsula was once part of human migratory corridors, not just arid desert.

### Mains Connect

Q: What is the Green Arabia Hypothesis? How does it contribute to our understanding of human migration and climatic shifts in desert landscapes?

### Infographic Suggestion

Map overlay of historic lakes, rivers, and fossil sites in Arabia + possible early human migration routes from Africa to India via Arabia.

## Taiwan Strait – Geopolitical Flashpoint in the Indo-Pacific

### Why in News?

Tensions in the Taiwan Strait resurfaced in June–July 2025 following China's large-scale military exercises in response to US–Taiwan trade visits, drawing global attention to the strategic vulnerability of this maritime corridor.

### What is the Taiwan Strait?

- Narrow 180-km-wide water body separating the People's Republic of China (PRC) from Taiwan (Republic of China).
- Links the East China Sea to the South China Sea.
- Major route for global semiconductor and goods shipping.

### Geopolitical Significance

Stakeholder	Interest in the Strait
China	Considers Taiwan a breakaway province; uses Strait to assert sovereignty.
Taiwan	Seeks international recognition and defends maritime borders.
USA	Committed to defending Taiwan under the Taiwan Relations Act.
India	Critical of unilateral aggression; watches Indo-Pacific balance.

### Trade & Strategic Risk

- Nearly 50% of world's container ships pass through.
- Disruption can impact global semiconductor, electronics, rare earth supply chains.
- Any escalation could drag multiple powers into conflict (QUAD, AUKUS, ASEAN implications).

### UPSC Relevance

- Prelims: Location-based MCQs (Taiwan Strait, East/South China Seas).
- Mains GS-2/GS-3: Implications of Taiwan crisis on India's Act East Policy, Indo-Pacific vision, and maritime security.

### Ethics Angle (GS-4)

- Principle of strategic autonomy vs collective regional deterrence.
- Humanitarian impacts of escalating maritime militarization.

### Mains Connect

Q. Analyze the strategic importance of the Taiwan Strait in the Indo-Pacific region. How should India balance its regional commitments amid rising tensions?

### Infographic Idea

Taiwan Strait map with naval bases, shipping lanes, and EEZs of China–Taiwan–Japan–Philippines.

## PHILOSOPHY OF THE MONTH

### Kairos: The Philosophy of the Right Moment

Kairos, in classical Greek thought, refers to the opportune or "right" moment to act — a point in time where circumstances, intention, and opportunity converge. Unlike chronos, which denotes chronological or sequential time, kairos is qualitative: it is the art of discerning when the moment is ripe for transformation.

### Time Beyond the Clock: Kairos vs Chronos

The ancient Greeks distinguished between chronos — the measurable passage of time — and kairos — the decisive instant. Philosophers like Isocrates and Aristotle saw kairos as essential in rhetoric and ethics: knowing when to speak or act could determine the moral worth and effectiveness of an action. In modern life, dominated by deadlines and digital schedules, kairos invites a shift from time management to timing awareness.

### Philosophical Depth: The Ethics of Timing

In ethics, kairos carries a moral dimension — some actions, however right in principle, can cause harm if done prematurely or too late. In leadership, this resonates with the Confucian ideal of "rectification of names" — aligning actions with the moral needs of the moment — and with the Buddhist principle of upaya (skillful means), which emphasizes the right method at the right time.

### Kairos in Creative and Scientific Breakthroughs

Many innovations and cultural shifts occur not from relentless effort alone but from recognizing the opportune window for a leap forward. The Renaissance, civil rights movements, and breakthroughs in physics have all hinged on leaders and thinkers seizing kairos. Neuroscience supports this: decision-making efficiency improves when action is timed with peak readiness, attention, and environmental alignment.

### Religious and Cross-Cultural Parallels

In Christian theology, kairos often denotes God's appointed time — a period of grace and decisive change. In Hinduism, the muhurta serves a similar role as an auspicious moment for action. In Zen Buddhism, satori — sudden awakening — mirrors kairos in its immediacy and transformative potential.

### Kairos in the Digital Age

In 2025's hyperconnected world, kairos is crucial in information ethics and activism. A well-timed fact-check, whistleblowing act, or social media post can sway public opinion, mobilize communities, or prevent harm. Conversely, missed moments can let injustice solidify.

### Conclusion

Kairos teaches discernment in action. For students and professionals alike, it sharpens judgment, tempers impulsivity,

and fosters strategic empathy — knowing not only what is right but when it will resonate most. In a society obsessed with speed, kairos reintroduces the wisdom of the pause and the readiness to leap when the moment calls.

## Ubuntu: I Am Because We Are

Ubuntu, a Bantu word and African philosophical ethos, means “I am because we are.” Rooted in the interconnectedness of human beings, Ubuntu asserts that one’s identity is shaped and sustained by the community. In an age marked by polarization, digital alienation, and global crises, Ubuntu offers a moral compass for rebuilding trust and collective responsibility.

### Core Meaning: Humanity Through Others

Ubuntu holds that personal well-being and dignity are inseparable from that of others. Archbishop Desmond Tutu described it as the essence of being human — to affirm others’ humanity through one’s own. This is not mere altruism but a recognition that human flourishing is mutual.

### Philosophical Grounding

African philosophers such as Mogobe Ramose and Augustine Shutte emphasize Ubuntu as both ontology (a way of being) and ethics (a guide for action). It resonates with Confucian ren (humaneness), the Indian concept of Vasudhaiva Kutumbakam (“the world is one family”), and Martin Buber’s “I-Thou” relationship, which values genuine interpersonal connection over transactional exchange.

### Ubuntu in Conflict Resolution

Ubuntu has informed transitional justice in post-apartheid South Africa, restorative justice programs, and community-based reconciliation processes across Africa. Its focus on healing over punishment challenges Western retributive justice models, offering lessons for polarized societies in 2025.

### Digital Ubuntu: Ethics for the Networked World

In an era of AI, virtual communities, and digital anonymity, Ubuntu calls for a redesign of online interaction norms — fostering empathy, reducing harmful speech, and encouraging collective problem-solving. This is especially relevant in combating misinformation and online hate.

### Environmental Ubuntu

Ubuntu extends beyond human relations. Many African traditions link it to ecological stewardship — humanity is part of a larger web of life. This aligns with indigenous environmental ethics and the UN’s call for planetary solidarity in addressing climate change.

### Critiques and Evolving Interpretations

Some critics caution against romanticizing Ubuntu, noting that communal harmony can sometimes suppress individual dissent. However, contemporary Ubuntu embraces diversity within unity — recognizing that true community includes space for difference.

### Conclusion

In 2025, Ubuntu offers both a moral anchor and a call to action: to see our destinies as intertwined, to heal divides with

dialogue, and to build systems that prioritize collective dignity over individual gain. It urges us to measure progress not only by GDP or technological growth but by the depth of our shared humanity.

## ESSAYS FOR JUNE & JULY

### AI and the Human Mind: Coexistence or Competition?

#### INTRODUCTION

##### Conceptual Announcement

Artificial Intelligence (AI) is no longer confined to science fiction—it is a transformative reality reshaping how we think, work, and live. The human mind, evolved over millennia to create tools, now faces one capable of simulating cognition itself. The question is profound: will AI coexist with humanity, complementing our unique faculties, or will it compete with us for intellectual dominance, identity, and control?

##### Anecdote / Reference / Illustration

In 1997, IBM’s “Deep Blue” defeated chess grandmaster Garry Kasparov, signaling the first public demonstration of machine superiority in a domain of human intellect. Yet, years later, Kasparov advocated “centaur chess,” where humans and AI collaborate—often outperforming either alone. This tension between rivalry and partnership mirrors today’s broader AI discourse.

##### Scoping of the Essay

This essay explores the AI–human equation across philosophical origins, psychological and sociological dimensions, governance and democratic institutions, contemporary global and Indian contexts, counter-narratives, and ethical way forward strategies.

##### Tone Declaration

The tone is cautiously optimistic—recognizing AI’s risks but affirming that with ethics, governance, and vision, coexistence can prevail over competition.

##### Philosophical Foundations: Intelligence, Consciousness, and Identity

Philosophically, AI challenges the very definition of intelligence and consciousness. Thinkers like John Searle, through the Chinese Room Argument, argue that machines can simulate understanding without possessing true intentionality. Transhumanists, in contrast, envision merging human and machine intelligence as the next stage of evolution. The difference between AI’s “synthetic cognition” and the human mind’s “sentient awareness” remains a defining boundary. Indian philosophies like Advaita Vedanta stress that consciousness (chaitanya) is beyond computational replication. Thus, the philosophical debate frames AI not just as a technological tool but as a mirror reflecting what we believe makes us human.

##### Psychological and Sociological Dimensions: Human Agency and Social Change

The rise of AI alters human behavior, self-perception, and social structures. AI-driven personalization in social media shapes opinions, sometimes leading to echo chambers and polarization. Psychologically, overreliance on AI tools like generative models risks eroding problem-solving and critical thinking skills. UNESCO's 2021 Recommendation on the Ethics of AI warns of the socio-cognitive risks of pervasive AI in education and decision-making. To maintain agency, societies must cultivate AI literacy, ensuring humans remain active decision-makers rather than passive recipients of machine outputs.

### Governance, Democracy, and Institutional Implications

AI impacts governance both as a facilitator and as a challenge to democratic values. In Estonia, AI assists in tax administration, speeding processes while reducing corruption risks. Conversely, in authoritarian contexts, AI-enabled surveillance has been used to suppress dissent. India's Digital Personal Data Protection Act, 2023 aims to regulate data-driven AI applications, but operational challenges remain in enforcement. Democratic resilience will depend on embedding AI within frameworks of transparency, accountability, and citizen oversight.

### Contemporary Global Relevance: Opportunities and Risks

The global AI landscape in 2025 reflects both rapid innovation and deepening ethical concerns. DeepMind's AlphaFold has revolutionized protein folding predictions, accelerating drug discovery, while generative AI has sparked plagiarism debates in academia. The Future of Jobs Report 2025 predicts AI will displace 85 million jobs globally while creating 97 million new roles, underscoring disruptive transitions. Harnessing AI's potential while mitigating its harms will require agile, cross-sectoral governance that keeps pace with technological change.

### The Indian Context: Cultural Roots and Policy Pathways

India's AI trajectory blends technological ambition with socio-cultural complexity. The National Strategy for AI by NITI Aayog envisions "AI for All," targeting healthcare, agriculture, and education. Initiatives like Bhashini bridge linguistic divides by using AI for real-time translation. Yet, risks include exclusion errors in welfare delivery if biometric-AI integrations fail, as seen in certain Aadhaar-linked schemes. India must anchor AI adoption in constitutional values of equity, justice, and dignity, aligning innovation with inclusive development.

### Counter and Alternative Perspectives

Not all agree that coexistence is inevitable or even desirable. Tech leaders like Elon Musk have warned of AI as an existential risk if unaligned with human values. On the other hand, proponents of Human-Centered AI argue that competition narratives are exaggerated and can be reframed toward synergy. The EU's AI Act (2025) embodies this balance—restricting high-risk AI while promoting innovation in low-risk domains. The counter view forces a

sober recognition that coexistence is a choice, not an automatic outcome.

### Way Forward: From Risk to Resilience

Coexistence requires proactive governance, education, and ethical design. Adoption of "human-in-the-loop" systems ensures oversight in critical domains like criminal justice, healthcare, and defense. The Global Partnership on AI (GPAI) promotes international cooperation on responsible AI development. A resilient AI-human relationship demands that innovation be matched with safeguards, skill transitions, and public trust-building.

### CONCLUSION

#### Summary of Response

AI will be partner or rival depending on the choices humanity makes today. With ethics, regulation, and education, coexistence can amplify human potential; without them, competition may erode agency and equality.

#### Enriching Closure

"यन्त्रस्य साहाय्यं मानवानां कृते, किन्तु मानवानां अधीनत्वं आवश्यकम्।"

(Technology is meant to assist humans, but it must remain under human stewardship.)

#### Tone Reflection

Echoing the cautiously optimistic tone of the introduction, the conclusion reaffirms faith in humanity's ability to shape technology in service of shared values.

#### Call to Action

Let policymakers, innovators, educators, and citizens unite to craft an AI ecosystem grounded in transparency, empathy, and justice—ensuring that in the story of intelligence, humans and machines co-author a future that preserves dignity, freedom, and purpose.

## Water Security: The Defining Challenge of the 21st Century

### INTRODUCTION

#### Conceptual Announcement

Water is the foundation of life, economy, and civilization. Without it, ecosystems collapse, economies falter, and societies destabilize. In the 21st century, the question is not whether water is essential—it is how to secure it amid climate change, population growth, and competing demands. Water security, therefore, is not merely an environmental concern but a multidimensional challenge encompassing health, development, geopolitics, and justice.

#### Anecdote / Reference / Illustration

In 2018, Cape Town's "Day Zero" became a global symbol of water crisis when the city announced it would shut off municipal taps due to extreme drought. While it narrowly avoided catastrophe through aggressive conservation measures, the event underscored that water scarcity is no longer a distant possibility—it is an unfolding reality in cities from Chennai to São Paulo.



**Scoping of the Essay**

This essay examines water security through dimensions of ecological foundations, climate impacts, economic and social consequences, governance and conflict resolution, the Indian scenario, counter perspectives on abundance and innovation, and a way forward integrating policy, technology, and community stewardship.

**Tone Declaration**

The tone is urgent yet solution-oriented—acknowledging the gravity of the crisis while affirming that collective action can avert a global water breakdown.

**Ecological Foundations: Water as the Lifeblood of the Planet**

Water security begins with the health of natural systems—rivers, wetlands, aquifers, and glaciers—that sustain human and ecological needs. Freshwater ecosystems regulate climate, support biodiversity, and provide food through fisheries and irrigation. Yet, over 30% of the world's wetlands have been lost since 1970, as per WWF's Living Planet Report 2022. Unsustainable extraction, pollution, and damming have degraded the natural hydrological cycle, threatening the very sources of water security.

**Climate Change and the Water Crisis**

Climate change is a threat multiplier for water stress. Erratic monsoons, prolonged droughts, glacial retreat, and extreme floods disrupt water availability and quality. The IPCC's Sixth Assessment Report warns that Himalayan glacier melt could drastically reduce dry-season flows in major South Asian rivers, impacting over 600 million people. Rising sea levels also threaten coastal aquifers with salinity intrusion. Without urgent adaptation measures, climate impacts could turn water scarcity into a humanitarian and security crisis.

**Economic and Social Dimensions**

Water scarcity is both a cause and consequence of poverty. Agriculture accounts for about 70–80% of global freshwater use, yet inefficient irrigation wastes vast amounts. In industry, water-intensive sectors like textiles and energy face production risks from shortages, with ripple effects on employment. Socially, the burden of water collection falls disproportionately on women in rural communities, reducing their time for education and income generation. The World Bank estimates that inadequate water supply and sanitation cost countries up to 4% of GDP annually due to health costs and lost productivity.

**Governance, Conflict, and Cooperation**

Water scarcity has historically fueled tensions, from interstate disputes like the Cauvery in India to transboundary conflicts such as the Nile Basin. However, water can also be a driver of cooperation. The Indus Waters Treaty between India and Pakistan has survived wars, proving that well-designed agreements can endure even in hostile contexts. Effective governance demands integrated water resource management (IWRM), ensuring that

agricultural, industrial, and urban policies align with long-term water sustainability.

**The Indian Context: From Abundance to Stress**

India once enjoyed water abundance due to its vast river systems and monsoon rains, but rapid population growth, groundwater over-extraction, and pollution have created acute stress. According to NITI Aayog's Composite Water Management Index, 21 Indian cities—including Bengaluru and Delhi—could run out of groundwater soon. Initiatives like the Jal Jeevan Mission aim to provide tap water to all rural households by 2024–25, while the Atal Bhujal Yojana promotes community-led groundwater management. However, these efforts must be paired with demand-side efficiency and ecological restoration to be sustainable.

**Counter Perspectives: Innovation and Abundance Narratives**

Optimists argue that technological innovation—such as desalination, wastewater recycling, and cloud seeding—can offset scarcity. Singapore's NEWater program, which recycles treated wastewater into high-quality drinking water, is a case in point. Critics, however, caution that such solutions are energy-intensive, expensive, and often inaccessible to developing regions. Another counterpoint is that scarcity is as much a governance failure as a physical shortage; the issue is often distribution, wastage, and inequity, not absolute lack.

**Way Forward: Integrating Policy, Technology, and Community**

Water security requires a multi-pronged approach:

- **Policy:** Enforce water accounting and pricing to curb waste, while safeguarding basic access as a human right.
- **Technology:** Expand smart irrigation, AI-based demand forecasting, and affordable desalination innovations.
- **Ecosystem Restoration:** Rejuvenate rivers, wetlands, and recharge zones to restore natural water cycles.
- **Community Action:** Empower local water user associations and adopt traditional conservation methods like Rajasthan's johads and Maharashtra's phad irrigation systems.
- **International Cooperation:** Strengthen basin-wide treaties and create climate-resilient water-sharing frameworks.

**CONCLUSION****Summary of Response**

Water security is the defining challenge of our century, sitting at the intersection of environment, economy, and equity. Without it, sustainable development collapses; with it, peace and prosperity are possible.

**Enriching Closure**

"Thousands have lived without love, not one without water."  
– W.H. Auden.

In Indian ethos, water is not just a resource but a sacred trust (jal hi jeevan hai).

### Tone Reflection

The conclusion mirrors the urgent yet hopeful tone of the introduction—acknowledging the crisis but affirming that human ingenuity and cooperation can secure water for all.

### Call to Action

It is time for nations, communities, and individuals to treat water as a shared heritage, not a private commodity—investing in policies, technologies, and behaviors that ensure every drop counts for generations to come.

## ETHICS CASE STUDY

### Balancing Urban Infrastructure Expansion with Heritage Conservation

#### Scenario

You are the Municipal Commissioner of Pragati Nagar, a metropolitan city undergoing rapid urbanization. The city has secured a ₹20,000 crore funding package from a combination of a multilateral development bank, state government, and private investors for a flagship metro rail expansion project. The project is a core element of the city's Sustainable Urban Mobility Plan 2035, expected to reduce traffic congestion by 35%, cut vehicular emissions by 20%, and generate 50,000 direct and indirect jobs.

However, one critical 3.5 km stretch of the proposed line passes within 50 meters of the Ananteshwar Temple Complex, a 17th-century heritage site protected under the Ancient Monuments and Archaeological Sites and Remains Act, 1958. The complex is not just architecturally significant—it is a major spiritual hub, hosting annual festivals that draw over 200,000 devotees, boosting the local economy.

#### Stakeholder Pressures & Complexities:

- Heritage Activists & Conservationists warn that vibrations from tunneling and increased footfall could damage the structure, whose foundation has weakened due to groundwater depletion.
- Religious Leaders oppose any construction within 200 meters, citing cultural sanctity and religious sentiments.
- Project Engineers insist that altering the route would delay the project by at least 20 months, escalate costs by ₹2,000 crore, and jeopardize the development bank's timeline-based funding clause.
- State Government is under political pressure to inaugurate the line before the upcoming state elections.
- Local Business Owners near the temple worry about disruptions during construction but acknowledge the metro could boost trade post-completion.

- Judiciary is involved after a Public Interest Litigation (PIL) is filed by an NGO seeking a stay on construction near the temple.
- Media has polarized the debate, framing it as "progress vs. tradition" and amplifying public outrage.
- International Lenders have warned that failure to meet milestones could lead to withdrawal of funding.

You must take a decision that upholds sustainable development, cultural preservation, legal compliance, and public trust, while managing time-bound economic commitments.

#### Questions

1. Identify the core ethical dilemmas faced by the Municipal Commissioner in this case.
2. How can stakeholder engagement be structured to arrive at a balanced decision?
3. Suggest engineering, legal, and governance measures that could allow the project to proceed without compromising heritage integrity.
4. Propose long-term strategies to prevent such conflicts in future urban planning.

### Topic: Corporate Whistleblowing in Public Health Supply Contracts

#### Scenario

You are the Chief Procurement Officer in the Ministry of Health & Family Welfare, tasked with overseeing India's National Immunisation Drive 2025–27, aimed at delivering life-saving vaccines to 150 million children. The programme has secured ₹12,000 crore in funding through a mix of central government budget allocations, a World Bank health sector loan, and WHO technical support.

The vaccines are supplied by three companies, but one — Biomedica Pharma Ltd — holds over 65% of the contract value due to its advanced production capacity. Biomedica has been a long-time vendor for the Ministry, known for political connections and past high-profile philanthropic activities.

Midway through the procurement cycle, you receive encrypted documents from an anonymous whistleblower claiming to be a senior quality control officer at Biomedica. The documents reveal:

1. Inflated Pricing: Vaccine prices billed to the government are 35% higher than WHO's international reference price.
2. Quality Compromise: Several batches have antigen potency below prescribed levels, potentially reducing immunity and undermining the entire programme.
3. Falsified Records: Internal audit reports have been doctored to show compliance with quality norms.

The whistleblower fears retaliation and insists on anonymity, citing past cases where insiders faced job loss, harassment, and legal intimidation.

**Complexities & Stakeholders:**

- **Public Health Risk:** Millions of children could receive ineffective doses, jeopardising disease control targets.
- **Political Pressure:** The Health Minister's office urges you to "avoid public controversy" to prevent panic and maintain electoral goodwill.
- **Financial Oversight:** The World Bank and WHO require strict adherence to procurement and quality norms; violation could trigger funding withdrawal.
- **Media Pressure:** An investigative journalist has contacted you, hinting they have partial information and seeking confirmation.
- **Continuity of Supply:** Cancelling Biomedica's contract immediately could delay the drive by months, risking outbreaks of vaccine-preventable diseases.
- **Legal & Ethical Duty:** The Whistle Blowers Protection Act, 2014 and Drugs and Cosmetics Act, 1940 impose obligations for investigation and product quality enforcement.
- **Corporate Influence:** Biomedica's strong political connections could lead to personal career repercussions.

You must make decisions that protect public health, uphold ethical governance, comply with legal standards, and manage public trust — without triggering avoidable disruptions to the immunisation programme.

**Questions**

1. Identify the core ethical dilemmas faced by the Chief Procurement Officer in this case.
2. Using utilitarianism and deontological ethics, explain how you would approach this decision.
3. What immediate steps would you take to verify the whistleblower's claims and safeguard public health?
4. Propose systemic reforms to reduce the risk of such procurement-related ethical breaches in the future.