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UPSC 2024 & 2023 TOPPERS

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1. Mains Analysis

1.1 Police Reforms

Context: PM has recently mentioned the need to transform public perception of police
Facts: According to the India Justice Report 2025, India has only about **155 police personnel per 100,000 population**, significantly below the recommended UN norm of **222 per 100,000**.

Bottlenecks in Police system

1. Under-staffed, over-burdened police workforce
2. Poor investigation quality & low conviction rates
3. Follows Irish constabulary system (Approx 88% are constables)
4. Lack of sensitiveness and public perception of a corrupted system
5. Politically compromised
6. **Resource and infrastructure gaps**: Modern policing (forensics, cybercrime, evidence preservation, mobility, communication) requires resources
7. **Overload with non-core duties**: Police often are tasked with non-investigative duties — VIP security, election duties, crowd control etc.
8. **Trust deficit is widespread: Public perception of brute force rather than friend of public**
9. Reports of abuse of power and human rights violations

Ways to Improve Police

1. Increase manpower and fill vacancies
2. **Professionalise and modernise policing** — by better training (investigative procedures, forensics, cybercrime, human rights), upgrading infrastructure
3. **Separate investigation from law-and-order duties**:
4. **Create transparent accountability mechanisms**: Independent oversight, complaints redressal
5. **Ensure fair service conditions within police force**: Better career progression, incentives for good performance, training, mental-health support
6. **Legislative and structural reforms**: Replace outdated laws (some from colonial era), adopt a modern Police Act.

Few Committee/Commission on Police reforms

1. **Ribeiro Committee (1998–99)-** Focused on restructuring police force and enhancing accountability within police.
2. **ARC II-** Observed and warned about political interference, lack of transparency; stressed reforms in police-public relations, accountability, and institutional safeguards.

India **desperately needs police reforms**. Reforms must be **multi-pronged** from manpower and resources, institutional restructuring, accountability mechanisms, modern training &

infrastructure, community engagement, to updated laws/acts. There is no "magic fix" — but consistent, phased reforms can rebuild public trust and make policing more capable, fair, and just.

1.2 Erosion in Parliamentary Democracy

Facts: During the 2023 monsoon session, functioning of the Houses plunged — Lok Sabha worked only **18%** of scheduled time; Rajya Sabha just **28%**.
The first Lok Sabha (1952-57) and early years saw ~ 135 sittings per year; 17th LS had 55 days per year (PRS Data).

Reason for Erosion of Parliamentary Democracy

1. **Dramatic decline in parliamentary productivity & functioning**
2. **Collapse of deliberation, debate and scrutiny-** I n the 17th Lok Sabha, 42% of Bills were reportedly passed with less than 30 minutes of debate. (PRS survey).
3. **Ordinance raj-** During covid many unrelated provisions were also altered through ordinance.
4. Marginalisation of opposition, polarisation, and shrinking meaningful representation.
5. Destructive role of opposition,
6. Weakening of oversight and accountability functions- Critics argue that this contributes to growing dominance of the executive over the legislature — undermining checks & balances.
7. Criminalization of Politics- 251 of the 543 newly elected members have **criminal cases** registered against them (PRS Data).

Implications of a Weakened Parliament for Democracy

1. Public trust and legitimacy of democratic institutions may erode.
2. Democratic accountability and Rule of Law may suffer.
3. Disbalance between Legislature and Executive.
4. Marginzlized representation.

Measures to Improve

1. Ensure adequate sitting days & reduce over-reliance on ordinances.
2. Reduce adherence to whip except for constitutional amendments for better individual contributions.
3. **Strengthen accountability, transparency & public-facing oversight**: Publish detailed debate transcripts, committee reports etc.
4. **Revive and strengthen the committee system**: Ensure a high proportion of bills are referred to standing committees, with adequate time and resources for detailed scrutiny.
5. **Reform inner-party democracy & candidate selection**.
6. **Ensure executive remains accountable to legislature**: Reinforce constitutional norms of separation of powers: executive actions should be subject to legislative scrutiny.

Arguments can be made erosion has increased speed of the legislative procedure but **speed cannot become a default substitute for deliberation, accountability, and representation**. If Parliament moves forward only as a rubber stamp, the system devolves into a near-electoral autocracy.

1.3 Research & Development Outlook of India

Research & Development (R&D) is a strategic public good: it builds technological capability, raises productivity, and underpins national competitiveness. India's long-term growth, defence preparedness, health security and climate resilience require a sustained rise in quality and quantity of R&D.

Facts: **India's R&D intensity (GERD/GDP)** has remained low and flat. According to the Department of Science & Technology's R&D statistics, India's gross expenditure on R&D (GERD) was about **0.64–0.66% of GDP** in the latest published years (2018–19 to 2020–21). (Israel approx. 6% of GDP).

Main challenges of R&D in India

1. **Low overall investment (quantity problem).** GERD/GDP (~0.6–0.7%) is far below China (~2.6%), Korea (~5%), Israel (~6%).
2. **Weak private-sector (corporate) R&D** — industry contributes a much smaller share of GERD than in advanced economies.
3. **Low R&D quality & absorptive capacity** — gaps in basic research, fewer researchers per capita, limited high-end facilities.
4. **Skewed sectoral focus & low high-tech manufacturing R&D** — Indian R&D is fragmented, with relatively less spending in frontier areas (deep tech, semiconductors, high-end manufacturing) compared with software & services.
5. **Human capital and brain drain.**
6. **Weak ecosystem for commercialization and start-ups.**
7. **Policy & regulatory bottlenecks** — long procedures for approvals, weak R&D tax credits or poorly targeted incentives.

Measures required

1. **Increase national R&D intensity (target & financing)-** Set a **medium-term national target** (e.g., 2% GERD/GDP over 7–10 years,
2. Mobilise private investment (incentives & instruments).
3. Strengthen university-industry linkages & commercialization.
4. Build human capital & high-end facilities.
5. **Improve governance & institutional design.** Constitute an empowered **National R&D Council** (public–private) to set priorities, monitor GERD targets, coordinate ministries, and rationalize schemes.
6. Create capital markets & financial instruments for deep tech
7. Strengthen IP, standards & regulatory pathways.

India's low R&D intensity and weak corporate R&D share are structural impediments to becoming a technology-led, high-value economy. The solution lies in **more money (public + private), better incentives, mission orientation, people-centred policies, and institutional reforms** that connect labs to markets. Without these changes India risks remaining a services-led growth story; with them, it can become an innovation-driven manufacturing and knowledge economy.

1.4Eradication of Polygamy

Context: The Chief Minister of Assam introduced the Assam Prohibition of Polygamy Bill, 2025 in the Assam Legislative Assembly, aiming to criminalize polygamy across the state, with severe punishments for those violating the law.

Polygamy—particularly polygyny—has historically existed across several religious and customary systems in India. While it is prohibited for most communities under the Hindu Marriage Act (1955), the Indian Christian Marriage Act (1872), and the Parsi Marriage and Divorce Act (1936), it remains legally permissible for Muslims under personal law, subject to certain conditions.

Facts: The **National Family Health Survey(NFHS-5) (2019-2021)** reveals that nationally, polygamy rates are **2.1% among Christians**, **1.9% among Muslims**, **1.3% among Hindus and Buddhists**, **0.5% among Sikhs**, and **2.5% among other religions or castes**.

Key Provision of Assam's Anti-Polygamy Bill 2025

1. **Criminalization of Polygamy-** imprisonment of up to **7 years** and a **fine.**
2. **Accountability of Key Actors**: **Village heads, qazis (Muslim clerics), parents, and legal guardians**
3. **Compensation for Affected Women**
4. **Grandfather Clause**: Polygamous marriages **contracted before** the law's enactment will not be impacted.

Why the Push Toward Abolition?

1. **Constitutional Commitment to Gender Equality:** Articles **14**, **15**, and **21** ensure equality, non-discrimination, and dignity.
2. **Judicial Observations:** Courts have repeatedly emphasized that personal laws cannot override constitutional values.
    1. The Supreme Court in *Shayara Bano vs. Union of India (2017)* (Triple Talaq case) underlined the primacy of gender justice and signaled scrutiny of discriminatory practices.
3. **Reports of Committees and Commissions:** The **Law Commission (2018 & 2023 consultations)** suggested reforms of discriminatory personal law practices.
4. **Changing Socio-Economic Realities:** Urbanization, increased women's education, and financial independence have led to declining acceptance of polygamy even in communities where it was historically practiced.
5. **Global and Comparative Norms-**India's reform aligns with global human-rights trends and CEDAW recommendations.
6. Improves demographic and social stability, preventing exploitation under the guise of personal law.

Challenges in Abolishing Polygamy

1. **Constitutional and Legal Complexities:** Article **25** protects freedom of religion. Communities may argue polygamy forms part of religious practice.
2. **Perception of State Interference in Personal Law:** Minority communities often view reforms as **majoritarian imposition**, particularly in the context of UCC debates.
3. **Socio-Cultural Realities:** In certain tribal and customary systems, polygamy remains socially sanctioned.
4. **Fear of Misuse of Law:**Concerns exist that criminalizing polygamy may disproportionately target specific communities.
5. **Administrative and Enforcement Issues:** Second marriages are often unregistered; detecting

and proving polygamy is difficult.

6. **Rights of Existing Wives and Children:** Abrupt abolition raises questions
7. **Political Sensitivity:** Personal laws have historically been leveraged for political mobilization (e.g., Shah Bano case).

Way Forward

1. **Gradual, Consultative Reform**: Engage religious leaders, civil society, women's groups, and legal experts.
2. **Codification of Personal Laws**: Clarify marriage, divorce, and maintenance rights within all communities to prevent ambiguity.
3. **Transitional Protection Mechanisms**: Ensure rights of existing spouses and children through maintenance and inheritance safeguards.
4. **Awareness and Social Reform**: Community-level sensitization on rights of women.
5. **Judicial Clarity**: Supreme Court may need to revisit whether polygamy is an essential religious practice, setting a clear constitutional framework.

1.5 Digital Arrest & Cyber Governance

Context: The supreme court has given free hand to CBI to stop digital arrest.

The rise of digital technologies has fundamentally transformed crime and policing. One recent phenomenon is the emergence of "digital arrest", where cybercriminals impersonate law-enforcement officers and coerce individuals into virtually "detaining" themselves. This trend has raised concerns about citizen safety, the credibility of institutions, and the need for a robust cyber-regulatory ecosystem.

Digital Arrest as a pandemic is fueled by the following:

1. **Increased Digital Penetration & lack of awareness.**
2. **Deepfake and Identity Manipulation.**
3. **Low Digital Literacy.**
4. **Social Engineering Sophistication-** Fraudsters exploit psychological triggers—fear, urgency, and authority bias—to manipulate victims.
5. **Weak Cyber Policing Capacity-** Cyber cells are often under-resourced, and interstate/international coordination is slow.
6. **Rapidly Evolving Technology.**
7. **Underreporting of cases.**

Risks and Implications

1. **Threat to Citizen Security**
2. **Erosion of Trust in Institutions**
3. **Gendered Vulnerabilities**
4. **Transnational Crime Networks**
5. **Regulatory and Governance Gaps-** Existing laws (IPC/CrPC, IT Act 2000) do not explicitly address crimes like "digital arrest", making prosecution complex.

Government Steps So Far

- **Cyber Crime Helpline 1930 for immediate reporting.**
- **Indian Cyber Crime Coordination Centre (I4C) and state cyber labs.**
- **Digital Arrest Awareness Campaigns by MHA and state police (2023–24).**
- **Telecom SIM verification, KYI (Know Your Income) and KYC tightening.**
- **Action against fraudulent international call centres via MEA, Interpol red notices.**
- **Draft Digital India Act, proposing stronger rules on impersonation, deepfakes, and online fraud.**

Way Forward

1. Legal Recognition & Statutory Clarity
2. Strengthen Cyber Policing
3. Public Awareness & Digital Literacy
4. International Cooperation
5. Technological Solutions- Use AI
6. Platform Accountability

Digital arrest reflects the dark side of India's accelerating digitalisation. As technology advances, crime becomes more sophisticated, creating new vulnerabilities for citizens. Addressing digital arrest requires a combination of legal reform, technological capacity, institutional coordination, and citizen awareness. Ensuring a secure digital ecosystem is essential to safeguard trust in governance and uphold individual rights in the digital age.

1.6 India's Clean Air Conundrum

Context: Recently the capital has seen protests of activist groups against air pollution which has become an annual event in winter in NCR and other regions. The SC has asked to not to politicize the issue.

Recent Air Quality Report has ranked New Delhi as the World's most polluted capital.

Data: Delhi's air quality varies significantly by season, with the average annual Air Quality Index (AQI) typically falling in the "unhealthy" to "very unhealthy" range (around 160-200 whereas WHO's recommendation is **-5**µg/m³). In winter AQI rises above 500 at times in NCR region.

Why India struggles to maintain healthy air quality?

1. **Structural & Economic Factors a. Heavy dependence on coal for power generation-**
   a. Coal is vital to India's energy needs, supplying over half of the country's power (PIB).
   b. Rapid urbanisation and related construction
   c. Agricultural practices- Stubble burning d. Emission during nights by Pharma companies when vigil is weak.
2. **Geographic & Meteorological Factors-** Indo-Gangetic Plain (IGP) acts as an air-shed bowl with low wind speeds and winter inversion, trapping pollutants.
3. **Governance Challenges**

a. Fragmented bodies (MoEF, CPCBB, state PCBs) lack synergy to manage the problem.
b. Short term focus for solutions (Symptomatic solutions- Clean air tower, artificial rain).
c. Lack of political willingness. (cost of large reforms could be paid by loss in election).
d. Weak funds and uneven staffing.

4. **Behavioural & Social Factors**
   a. Episodic participation of civil society during winters only.
5. **Other factors**
   a. Missing lab to land approach (lack of practicality).
   b. Blind adoption of policy based on success in western countries.

What Can be done?

1. **Technological & Sector**
   a. Specific Measures: Lab to land approach to test practicality of the solutions.
   b. Shift to unconventional/renewable energy sources (Solar, Wind).
   c. Crop-residue management: subsidised machinery (Happy Seeder).
   d. Cleaner transport with EV's, CNG run vehicles.
2. 2. Governance & Policy Reforms
   a. Adopt an air-shed based management system for Indo Ganga Plains.
   b. trengthen pollution control boards with staffing, autonomy, penalties.
   c. Integrated policy framework for coordinated approach of the agencies.
   d. Expand NCAP with legally binding targets and funding.
   e. Multi year funding for capacity building.
   f. Senior level posts for administrators experienced in related sectors.
   g. Workable policies over ideal fancy policy import from west.
3. Behavioural & Urban Planning Measures
   a. Promote public transport like metros
   b. Dust control at construction sites; strict enforcement of waste-burning bans.
   c. Urban forests- Miyawaki technique.
   d. Local participation and behavioural change- Mission LiFE.

India's struggle to clear its air is rooted in structural dependence on polluting sectors, geographical constraints, and fragmented governance. A multi-sectoral, air-shed, technology-driven and behavioural approach is essential to achieve long-term clean air goals.

1.7 Indo-Pacific and India

Context: India has recently hosted Colombo Security Conclave which mainly focuses on regional cooperation in Indo Pacific.

The **Indo-Pacific**—stretching from the eastern coast of Africa to the western shores of the Americas—has emerged as the **geopolitical and geo-economic centre of gravity** in the 21st century. India describes the region as "**free, open, inclusive, and based on ASEAN centrality**," aligning with acts such as the **Act East Policy**, **SAGAR Doctrine**, and **Indo-Pacific Oceans Initiative (IPOI)**.

Importance of the Indo-Pacific for India (With facts & figures)

1. **Economic Importance**

- **65% of global GDP** and **46% of world merchandise trade** passes through the Indo-Pacific.
- Around **90% of India's trade by volume and 85% by value** moves through the Indo-Pacific

sea routes.
- India's **Blue Economy** estimated at **4% of GDP** depends heavily on secure Indo-Pacific.

2. **Energy Security**
   - India imports **over 85% of its crude oil**, with the majority coming via the Indian Ocean chokepoints—**Strait of Hormuz, Malacca Strait**.
3. **Strategic & Security Significance**
   - **Critical choke points(**Malacca, Sunda, Lombok, Bab-el-Mandeb, Hormuz), String of pearls vs diamond necklace, QUAD etc.
4. **Diaspora & Soft Power**
   - **~8 million Indian diaspora** resides in the Indo-Pacific contribute over **35% of India's remittances** (UAE, US, Singapore, Australia, Malaysia).
5. **Maritime Resource Opportunities**
   - India's EEZ of **2.37 million sq km** lies in the Indo-Pacific and support livelihoods for **4 million people** in coastal India.

Challenges Faced by India in the Indo-Pacific

1. China's Assertiveness

2. Maritime Security Threats
- Piracy in the **Gulf of Aden and Somali coast**.
- Drug trafficking, illegal fishing, arms smuggling.

3. Strategic Competition Among Major Powers
- Pressures on India to align, despite its **strategic autonomy** principles.

4. Lack of Maritime Infrastructure & Naval Capacity Limitations
- India has only **one operational aircraft carrier** (INS Vikramaditya; INS Vikrant is inducted but ramp-up ongoing).China has 3.**E**

5. Challenges in Island Territories
- Need for better infrastructure, surveillance and development in **Andaman & Nicobar**.

6. Limited Economic Integration
- India is not part of **RCEP**.
- Trade dependence on China remains high—**USD 118 billion bilateral trade (2023-24)** with a large deficit.

Way Forward for India

1. **Strengthen Maritime Military Capabilities**
2. **Deepen Multilateral & Minilateral Partnerships**
3. **Boost Maritime Infrastructure & Connectivity**
4. **Enhance Economic Integration &** Strengthen FTAs with:
5. **Soft-Power Diplomacy**
6. **Blue Economy Development**

How Mutual Cooperation Helps India in the Indo-Pacific

A. QUAD Cooperation
- Joint naval exercises (Malabar).
- Technology sharing: semiconductors, 5G/6G.

B. India–France Indo-Pacific Partnership
- Joint patrols in the Western Indian Ocean.

C. India–Japan Strategic Cooperation
- Collaboration in supply chain resilience.

D. ASEAN Centrality

- Provides India access to:
  - **Regional Comprehensive Security Architecture**
  - Maritime cooperation

E. Australia–India Maritime Cooperation

- Logistics support agreement (MLSA), Joint exercises: AUSINDEX.

F. Middle East Partnerships

- Chabahar → Central Asia access.
- IMEC → reduces dependence on Suez & Red Sea routes.

G. Indian Ocean Island States

Cooperation with **Sri Lanka, Maldives, Mauritius, Seychelles** strengthens: Maritime domain awareness, Anti-piracy missions &Counter-terror operations

The Indo-Pacific is indispensable for India's **economic security, strategic influence and great-power aspirations**. While challenges—especially China's assertiveness, maritime vulnerabilities, and strategic rivalries—pose serious risks, India can mitigate them through a **strong navy, deeper regional cooperation, diversified economic ties, and multilateral engagement**. As India positions itself as a **net security provider** under the **SAGAR vision**, a stable and inclusive Indo-Pacific becomes central to India's rise as a major power.

1.8 Nuclear Power for Space Exploration: US Initiative

The United States has recently intensified efforts to use **nuclear power systems**—including **Nuclear Thermal Propulsion (NTP)** and **Nuclear Electric Propulsion (NEP)**—to enable long-duration, deep-space missions. NASA, in collaboration with the US Department of Energy (DOE), is developing projects like **DRACO (Demonstration Rocket for Agile Cislunar Operations)** and **Fission Surface Power** for the Moon and Mars.

Nuclear Power in Space Exploration

1. **Higher Propulsion Efficiency: Nuclear Thermal Propulsion (NTP)** can deliver **2–3 times higher specific impulse** compared to chemical rockets.
2. **Reliable, Long-Duration Power Supply: Solar energy becomes inefficient beyond Mars due to decreased solar flux.**
   - **Nuclear reactors can produce constant power for 10–15 years, enabling missions.**
3. **Enables Permanent Lunar and Martian Bases**
4. **Scientific Advancements: Power-intensive instruments (ground-penetrating radar, deep-space communication arrays) become feasible.**
5. **Nuclear reactors provide compact stability:** They generate dense, weather-independent energy in small footprints, enabling long-term missions and remote operations.
6. **Need for continuous high-density power: Human habitats, life-support, labs and manufacturing require stable, uninterrupted energy far beyond what solar arrays can supply.**

Challenges of Nuclear Power for Space Exploration

1. **Safety & Environmental Concerns-** Risk of **radioactive material release**

2. **Technology & Engineering Complexities**
3. **Astronaut Radiation Exposure**
4. **High Costs**
5. **Regulatory & Legal Barriers**
6. **Geopolitical Concerns:** May trigger competition with **China and Russia**.

Way Forward

1. **Safe Reactor Designs-** Use of **Low-Enriched Uranium (LEU)**.
2. Updating global rules under the **UN COPUOS** for safe use of space nuclear power.
3. **Public Engagement & Transparency**
4. **Collaboration Opportunities**

Relevance for India

- India currently has no active nuclear propulsion program.
- Learning from US advancements could help ISRO:
  - Plan long-duration outer planet missions
  - Develop lunar base power systems under Chandrayaan follow-ups
  - Enhance deep-space communication & navigation autonomy.

Existing International Laws Governing Space Nuclear Power:

1. **UN Principles (1992)** – procedural safeguards: Mandate safe design, pre-launch risk analysis and emergency reporting, but focus mainly on power-generation reactors.
2. **Outer Space Treaty (1967):** Bans nuclear weapons in orbit but allows peaceful nuclear reactors, creating ambiguity in propulsion applications.
3. **Liability Convention (1972):** Covers damage caused by space objects but offers unclear guidance on accidents involving reactors beyond Earth orbit.
4. **NPT – nuclear material control:** Restricts weaponisation but leaves gaps in oversight for space reactors or nuclear propulsion systems.

The US push towards **nuclear-powered space exploration** marks a transformative step in humanity's deep-space ambitions. While safety, cost, regulatory and geopolitical challenges persist, nuclear propulsion and power systems offer unmatched advantages for **deep-space travel, lunar habitation, and strategic dominance**. Balancing innovation with safety and global cooperation will determine the future trajectory of nuclear space technologies.

1.9 National Judicial Policy and NJAC

Context: Chief Justice of India Surya Kant called for a national judicial policy to reduce divergence across courts, and also stated that the Supreme Court would consider a plea seeking revival of the National Judicial Appointments Commission (NJAC), which challenges the Collegium system. Recent Air Quality Report has ranked New Delhi as the World's most polluted capital.

India's judicial system, despite being one of the largest in the world, faces **systemic inefficiencies**. The National Judicial Policy (2010) aimed to ensure speedy

and affordable justice but has not delivered optimally. Persistent issues in **pendency, judicial appointments, infrastructure, and accountability** continue to affect justice delivery. The debate on reforms frequently includes revisiting the **National Judicial Appointments Commission (NJAC)** within constitutional limits.

Shortcomings of Current Judicial Policies in India

1. **Massive Pendency & Delays-** As of 2024, India faces **over 5 crore pending cases**.
2. Chronic vacancies (approx. **30–35%** in subordinate courts).
3. **Inefficiencies in Judicial Appointments- Uncle Judge Syndrome**
4. **Inadequate Infrastructure:** Only **around 21 judges per million population** (Law Commission recommends 50). Courts lacking: Digital recording systems, Court managers etc.
5. **Accessibility and High Costs:** Litigation expenses are prohibitive for poor/marginalized groups.
6. **Lack of Performance Monitorinh**
7. Resistance from High Courts: High Courts under Articles 214–226, control their own procedures, rosters, and administrative practices. Uniformity may face institutional pushback.
8. **Procedural Complexities**
9. Lack of Alternative Dispute Resolution (ADR) mainstreaming.

How NJAC (or NJAC-like reforms) Can Help—Within Constitutional Limits

1. **Increased Transparency in Appointments**
   - NJAC proposed multi-institutional participation: Judiciary, Executive, Independent members
2. **Enhanced Accountability**
   - Independent members ensure: Merit-based selection, Objective evaluation, Discouragement of nepotism
3. **Reducing Appointment Delays**
   - This would reduce months-long delays in High Court appointments.
4. **Balancing Judicial Independence and Democratic Accountability**
5. **Strengthening Public Trust**
   - A transparent body improves legitimacy and public faith in the judiciary.

Judicial reform is essential for India's democratic health and economic progress. The shortcomings of current policies—ranging from appointment opacity to chronic pendency—require **structural, technological, and administrative reforms**. A revised, constitutionally compliant **NJAC-like institution** can help bring transparency, efficiency, and accountability to judicial appointments without diluting judicial independence. A modern, accessible, and efficient judiciary is crucial for ensuring **citizen-centric justice** and strengthening **rule of law**.

1.10 Man–Animal Conflict in India

Man–Animal Conflict refers to negative interactions between humans and wildlife, leading to loss of life, injury, crop damage, livestock predation, and retaliatory killing of animals.
Fact: India, home to ~8% of global biodiversity and 1.4 billion people, faces rising conflict as human footprint expands into wildlife habitats.

Scale of the Problem (Facts & Figures)

- **Elephants:**
  - India hosts ~30,000 Asian elephants (60% of global population).
  - 2018–23: ~2,500 human deaths due to elephant attacks; 500+ elephants died (often due to train hits, electrocution).
- **Tigers:**
  - India holds ~75% of the world's tigers.
  - ~100 human deaths annually, mostly in Sundarbans, central India.
- **Leopards:**
  - Rising in peri-urban landscapes.
  - 5,800 leopard conflict cases reported between 2015-2021.
- **Crop Loss:**
  - **Annual agricultural losses exceed ₹500–600 crore (MoEFCC estimates).**

Reasons for Rising Man–Animal Conflict

1. Habitat Loss & Fragmentation

- India loses ~1.5 million ha of forest annually to development.
- Wildlife corridors blocked → animals stray into human areas.

2. Encroachment & Expansion of Agriculture

- Cultivation reaches forest edges; elephants attracted to crops like paddy, banana, and sugarcane.

3. Depletion of Natural Prey Base

4. Climate Change

5. Linear Infrastructure

- Highways, railways, canals and power lines intersect wildlife routes.

6. Human Settlements inside or near Forests

- Over 170 tribal villages still inside core tiger habitats (e.g., PTR, STR) leading to recurring conflict.

7. Attraction to Waste

- Leopards, monkeys, bears and elephants drawn to garbage dumps near towns, tea gardens, tourist resorts.

Impact

- Loss of human lives & psychological trauma
- Economic losses: crops, livestock, property
- Retaliatory killings of tigers, leopards, elephants, bears
- Conservation backlash: reduced local support
- Political & social tensions in forest-fringe communities

Government Measures So Far

- Wildlife Protection Act, 1972
- Project Elephant (1992), Project Tiger (1973)
- Eco-Sensitive Zones (ESZs) around PAs
- Compensation schemes by MoEFCC & states
- Haathi Mere Saathi project
- CAMPA funds for mitigation infrastructure
- Lion, Tiger corridors mapping by WII
- Suraksha Fund for quick compensation in some states

Way Forward

1. Landscape-Level Conservation- Recognize wildlife ranges beyond Protected Areas (PAs) & secure critical corridors.

2. Scientific Mitigation Measures

- Early-warning systems: SMS alerts, AI-enabled camera traps, radio-collared elephants.
- Underpasses/Overpasses on highways (as done on NH44 in Pench).

3. Community Participation- Strengthen Joint Forest Management Committees.

4. Reduce Attractants

- Proper waste management in tourist zones.

5. Improve Compensation Mechanisms- Timely, transparent payment through direct DBT.

6. Regulated Development- Mandatory Wildlife Impact Assessment (WIA) for linear projects.

- Avoid infrastructure in key animal passages.

7. Technological Interventions- AI-based prediction maps for elephant movement (pilot in Odisha & Karnataka).

8. Community Incentives- Eco-tourism benefits must reach local people.

9. Relocation of Villages (Voluntary)

Man–Animal Conflict in India is a symptom of deeper ecological imbalance rooted in rapid development, habitat fragmentation and climate stress. A holistic, landscape-based, community-driven approach—backed by science, technology and empathetic governance—is essential to ensure coexistence and protect both lives and biodiversity.

1.11 Labour Codes

To simplify India's outdated and fragmented labour laws, the Government consolidated **29 central labour laws** into **4 Labour Codes**:

1. **Code on Wages, 2019**
2. **Industrial Relations Code, 2020**
3. **Occupational Safety, Health and Working Conditions (OSHWC) Code, 2020**
4. **Social Security Code, 2020**

These aim to modernize labour governance, improve ease of doing business, and expand social security.

Brief Overview of the Labour Codes

1. Code on Wages (2019)

- Universalizes **minimum wages** and **timely payment** for all workers.
- Introduces a **National Floor Wage**.

2. Industrial Relations Code (2020)

- Governs trade unions, industrial disputes, and hiring–firing norms.
- Introduces **fixed-term employment** and changes thresholds for lay-offs and retrenchment.

3. OSHWC Code (2020)

- Consolidates laws relating to working conditions, health and safety.
- Applies to factories, mines, docks, plantations, and certain gig sectors.

4. Social Security Code (2020)

- Extends social security to **gig and platform workers**, **unorganized workers**, and **fixed-**

term employees.
- Includes PF, ESI, maternity, and disability benefits.

Positive Changes / Merits

1. Simplification of Labour Laws- Reduces 29 overlapping laws into 4 codes.

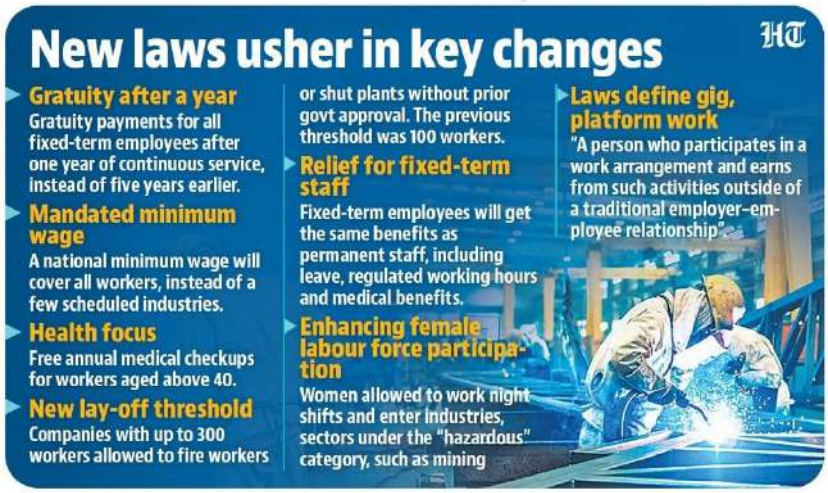
2. Universal Minimum Wage- Ensures coverage for all employees irrespective of sector.
- **National Floor Wage** prevents exploitation in low-wage states.

3. Boost to Formalization- Easier hiring (fixed-term employment), single registration, and harmonized definitions reduce informality.

4. Social Security for Gig & Platform Wo rkers- First time in India's legal framework

5. Ease of Doing Business- Self-certification, web-based inspections, reduced compliance burden.

6. Safety & Health Improvements- Mandatory health and safety standards.
- Provisions for **free annual health checkups**, especially in high-risk sectors.



7. Portability of Benefits- Aadhaar-linked social security ensures portability for migrant workers.

Controversial Points / Criticisms

1. Hire-and-Fire Provisions- Industrial Relations Code increases threshold for lay-offs, retrenchment and closure from **100 to 300 workers** without government approval.

2. Restrictions on Strikes- 14-day notice mandatory for all strikes, including in non-public utility services.

3. Ambiguity in Gig Worker Benefits- Social security for gig workers not fully enforceable without detailed rules and clear funding mechanisms.

4. Longer Working Hours- States allowed to increase work shifts from **8 hours to 12 hours** (with overtime).

5. Centralization of Power- Codes give significant rule-making powers to government, reducing collective bargaining by unions.

6. Implementation Delays

7. Insufficient Focus on Informal Sector

Way Forward

1. Balanced Labour Flexibility- Provide flexibility to firms while protecting core rights—job security, fair wages, social security.

2. Strengthen Social Security Architecture- Create a dedicated **Gig & Platform Worker Welfare Authority**.

3. Build Worker Awareness- Large-scale awareness campaigns for unorganized sector workers on registration, benefits, and grievance redressal.

4. Digital Implementation- Seamless integration of e-Shram portal with PF, ESI, Ayushman Bharat.

5. Cooperative Federalism- Centre and states must harmonize rules to avoid delays and ensure uniform implementation.

6. Strengthen Inspections- Transparent, randomized digital inspection systems to prevent harassment and ensure safety compliance.
7. Inclusive Stakeholder Consultation- Regular dialogue with trade unions, MSMEs, gig platforms, and civil society to refine rules.

The new labour codes represent a **major structural reform** aimed at modernizing India's labour market, promoting ease of doing business, and expanding social security to previously excluded workers. However, concerns regarding job security, weakening of unions, and gaps in implementation must be addressed. A **worker-centric and industry-friendly balanced approach**, supported by digital governance and strong social dialogue, is essential to harness the full potential of these reforms.

1.12 Child Marriage in India

Context: Child marriages in Madhya Pradesh have risen sharply by 47% since 2020, with Damoh district emerging as the worst hotspot in 2025.

Child marriage—defined as marriage before **18 years for girls and 21 for boys** under the Prohibition of Child Marriage Act (PCMA), 2006—remains a social challenge in India. Although declining, it persists due to socio-economic vulnerabilities, gender norms and weak enforcement.

Concerns Associated with Child Marriage

1. Health Risks- Early pregnancy → anaemia, obstructed labour, fistula, premature births. Infant mortality rate significantly higher for teenage mothers.
2. Educational Disruption- Married girls **drop out of schools** early, limiting skill development and employability.
3. Economic Dependence & Vicious Cycle of Poverty
4. Gender-Based Violence
5. Violation of Rights- Contradicts **UNCRC**, SDG 5.3 (eliminate child marriage), and constitutional principles of equality, dignity, and freedom.
6. Weak Legal Enforcement- Despite PCMA 2006, majority of cases are unreported.

Facts & Figures
1. Prevalence
- **NFHS-5 (2019–21): 23%** of women aged 20–24 were married before 18.
  - **Highest prevalence states: West Bengal (41%), Bihar (40%), Jharkhand (36%), Assam (32%).**

2. Teenage Pregnancy:- NFHS-5: **6.8%** of girls aged 15–19 have begun childbearing; highest in Tripura, West Bengal, Andhra Pradesh.
3. Education Link- Girls with **no schooling**: **49%** marry early.
4. Economic Cost- World Bank: Ending child marriage can generate **$4.8 trillion** in economic gains globally by 2030; India accounts for a large share due to population size.

Reasons for Persistence of Child Marriage
1. Poverty & Economic Insecurity- Families consider daughters a "burden".
2. Low Female Education
3. Patriarchal Norms & Social Customs

4. Fear of Sexual Violence- Families marry off girls early believing it ensures "safety".
5. Religion & Custom
- Traditional ceremonies and festivals often considered auspicious for "early marriage".

6. Weak Enforcement of PCMA
7. Humanitarian & Climate Stress- Floods, drought, displacement (e.g., Assam, Bihar) push families to marry off girls early.

Government Measures
- **Prohibition of Child Marriage Act (PCMA), 2006**
- **Beti Bachao Beti Padhao (BBBP)**
- **Kanyashree Scheme (West Bengal), Ladli Yojana (Haryana)**
- **Sukanya Samriddhi Yojana**
- **POSHAN Abhiyan, Rashtriya Kishor Swasthya Karyakram (RKSK)**
- Proposal to **raise legal marriage age for women to 21 (2021 Bill)**

Way Forward (UPSC-Oriented Points)
1. Strengthen Education & Secondary School Access
2. Economic Support for Vulnerable Families
3. Community-Based Behaviour Change
4. Stronger Legal Enforcement
5. Address Root Causes- Reduce poverty through livelihood schemes (NRLM), skill training, social protection.
6. Empowerment of Adolescents
7. Integrate Technology- Real-time tracking of school dropouts.
8. Inter-State Coordination
Child marriage in India is not merely a legal issue but a **deep socio-economic and gender challenge**. While prevalence has declined, persistent structural factors—poverty, patriarchy, weak education and enforcement—sustain the problem. A **multi-dimensional, rights-based and community-driven approach**, with emphasis on girls' education and empowerment, is essential for eliminating child marriage and achieving SDG 5 by 2030.

1.13 ST Classification in Assam

A three-member Group of Ministers (GoM) in Assam has recommended granting Scheduled Tribe (ST) status to **six additional communities** in the state: Tai Ahom, Chutia, Moran, Matak (Motok), Koch-Rajbongshi and the so-called "Tea Tribes / Adivasis".

To accommodate this, the GoM proposes a **three-tier ST classification system** in Assam:
- ST (Plains) — existing ST plains communities
- ST (Hills) — existing hill-based tribes
- ST (Valley) — the six new communities proposed for inclusion

The plan claims that the existing reservation quotas/benefits for ST (Plains) and ST (Hills) groups will remain protected, while ST (Valley) gets separate quotas and rosters.

Why many existing tribal organisations oppose it (and why it's controversial)

- Existing tribal groups argue that the six communities being proposed for ST inclusion do **not meet the constitutional/anthropological criteria** for ST status (like "primitive traits", "geographical isolation", "distinctive culture" etc.).
- There are serious concerns over **dilution of benefits** — because the proposed communities are numerically large/"advanced".
- Some tribal leaders have warned that this may lead to "widespread agitation", fearing permanent loss of "existing tribes' constitutional safeguards" at national level (since ST reservation is nationally recognised under the Constitution).

What the government says / What the proposal tries to do

- The Assam government says the three-tier ST classification was designed so that "the rights and privileges of existing ST communities will not be affected".
- They intend separate reservation rosters for ST (Valley) to ensure fairness in state government recruitment and educational institutions.
- The government has invited tribal organisations for talks — a sign it's trying to engage with the dissenting groups and possibly find a compromise.

What's at stake — Why this issue matters (beyond just classification)

- ST status in India brings **constitutional protection, reservation quotas, welfare benefits, and political representation**. Changing who counts as ST in Assam has wide implications for **jobs, education, land rights, and political balance**.
- There's deep-rooted concern among original tribal communities that this change may **erase their distinct identity, marginalize them in resource access, and weaken their long-term security**.
- Conversely, communities demanding ST status argue that they have been historically neglected or mis-classified, and need ST listing to access welfare and correct past injustices. This tension pits **identity, justice, and politics** against each other — making resolution complex and sensitive.

How are Scheduled Tribes Notified in India?

- **Article 366(25):** "Scheduled Tribes" refers to the tribes or tribal groups that are recognised as STs under Article 342.
- **Article 342:** The President can notify which **tribes or tribal groups** are recognised as Scheduled Tribes for each State or Union Territory, after consulting the Governor.
    - Any later inclusion or removal from this **ST list can be done only by Parliament** through legislation, not by executive notification.

1.14 India's Maritime Doctrine

Context: The Chief of the Naval Staff released the Indian Maritime Doctrine 2025 on India Navy Day (4th December), aligning it with India's long-term strategic vision and maritime priorities.
Key Highlights of 2025 Edition: Formally recognises **"no-war, no-peace"** as a distinct operational category, acknowledging the **grey zone between peace and conflict** as a critical space

where contemporary maritime competition increasingly occurs.

1. **Maritime Interests:** The doctrine identifies India's core interests: Security of coastline, EEZ, and island territories, Safety of Sea Lines of Communication (SLOCs), Protection of offshore assets and undersea cables. Etc.
2. **Maritime Threat Spectrum:** Traditional threats, Non-traditional threats(Piracy, terrorism, smuggling, climate change, cyber threats), Grey-zone challenges (Chinese survey vessels, "maritime militias").
3. **Navy's Roles:** The doctrine categorises naval roles into: **Military Role, Diplomatic Role (**Naval diplomacy through port calls, HADR, anti-piracy operation) & **Constabulary Role (** Anti-piracy, anti-smuggling, coastal security).

4. **Operational Concepts: Mission-based deployment**, **Network-centric warfare**: real-time maritime domain awareness (MDA), **Tri-service integration**: synergy with CDS, maritime command plans and **Blue water capability.**
5. **Force Structuring & modernising.**

Why Maritime Doctrine Matters for India

1. Geography

- India has a **7,516 km coastline**, **1,382 islands**, and controls vital choke points like the **Strait of Malacca approaches**, **Lakshadweep Channel**, and **Eight Degree Channel**.

2. Economic Dependence

- **95% of India's trade by volume** and **70% by value** moves by sea.
- **80% of crude oil** imports transit through vulnerable sea lanes (SLOCs).

3. Strategic Competition

- Chinese naval expansion, militarisation of Indian Ocean islands, and PLA Navy presence near India's EEZ require strong doctrinal clarity.

Significance of Indian Maritime Doctrine

1. Strategic Signalling: Provides clear strategic intent in the Indo-Pacific to adversaries and partners.

2. Enhanced Operational Readiness: Acts as a guide for operational planning and resource allocation.

3. Jointness and Inter-operability: Assists integration with Army, Air Force, and Coast Guard; crucial for theatre commands.

4. Regional Leadership: Supports India's vision of **SAGAR (Security and Growth for All in the Region)** and emergence as a net security provider in the Indian Ocean.

5. Supports Maritime Economy: Ensures secure environment for ports, shipping, fisheries, offshore energy.

Challenges in Implementation

1. Resource Constraints

- Capital budget limitations.
- Shortage of submarines; delays in P-75(I).

2. Chinese Expansion: PLA Navy's presence in IOR, Djibouti base, and potential for bases in Gwadar and Hambantota.
3. Technological Gaps: Underwater domain awareness, cyber security, AI-driven reconnaissance still developing.
4. Coordination Issues: Multi-agency coastal security still evolving.

Way Forward
1. Strengthen Indigenous Maritime Capabilities
2. Expand Naval Footprint
3. Enhance Maritime Domain Awareness
4. Maritime Governance Reforms
5. Diplomatic Leverage
The **Indian Maritime Doctrine** reflects India's evolution into a confident maritime power in the Indo-Pacific. As the strategic centre of gravity shifts seaward, the doctrine serves as both a blueprint for naval operations and a strategic vision document. Effective implementation, backed by technology, diplomacy, and jointness, will be critical for safeguarding India's interests in the turbulent oceans of the 21st century.

1.15 Bioterrorism and associated risk

Context: External Affairs Minister Mr. Jaishankar has warned against bioterrorism and associated threats.

Bioterrorism refers to the deliberate release of biological agents—bacteria, viruses, fungi, or toxins—to cause illness, death, panic, or societal disruption. The WHO describes it as one of the **most complex non-traditional security threats**, especially with the rise of synthetic biology, global mobility, and weak public health systems.

Characteristics
- **Low cost, high impact:** Biological agents are inexpensive compared to nuclear or chemical weapons.
- **Difficult detection:** Many agents have long incubation periods, enabling silent spread.
- **High casualty potential:** Diseases like smallpox, anthrax, or engineered pathogens can cause mass fatalities.
- **Psychological impact:** Fear and misinformation amplify disruption.

Potential Agents
- **Bacteria:** Anthrax (Bacillus anthracis), Plague.
- **Viruses:** Smallpox, Hemorrhagic fevers.
- **Toxins:** Botulinum toxin, Ricin.
- **Genetically engineered pathogens** (emerging threat): CRISPR-based enhancements for virulence.

Drivers of Rising Bioterrorism Risk
1. **Advances in Biotechnology:** Synthetic biology, CRISPR, and gene editing make **creation or modification** of pathogens easier.

2. **Global Connectivity:** Rapid global travel accelerates the spread of infectious diseases.
3. **Proliferation of Dual-Use Research:** Lab research done for public health can be misused for weaponisation.
4. **Weak Health Systems:** Poor surveillance, low laboratory capacity, shortage of epidemiologists create vulnerabilities.
5. **Bio-crime and lone actors:** Options for **small cells** or **individuals** to disseminate biological agents increase risk.

Concerns Associated

1. **Human Security:** Mass casualties, long-term morbidity, psychological trauma.
2. **Economic disruption:** Shutdown of supply chains, agriculture, trade, tourism—as seen during COVID-19.
3. **National Security:** Overwhelms healthcare, creates panic, undermines trust in the state.
4. **International Relations:** Cross-border blame, sanctions, and geopolitical tensions.
5. **Dual-Use Research Risks:** Advances in biotechnology, synthetic biology, and genetic engineering can be misused to create more potent or resistant pathogens.
6. **Low-Cost, High-Impact Threat:** Biological weapons are cheaper to produce compared to nuclear or chemical weapons, making them attractive to non-state actors.
7. **Psychological disruption:** Fear, misinformation, and public panic can destabilise societies, disrupt supply chains, and damage economies.

Bioterrorism Landscape in India

Vulnerabilities

- Dense population and megacities.
- Limited biosafety level-3 and -4 labs historically (though expanding).
- Porous borders, illegal wildlife trade.
- Misinformation ecosystems enabling panic.

Past Cases / Alerts

- 2001 anthrax scares.
- Repeated concerns on cross-border terror groups exploiting pathogens.

Institutional Preparedness in India

1. Legal Framework

- **Disaster Management Act (2005)** for large outbreaks.
- **Environment Protection Act**, **Drugs and Cosmetics Act** for biosafety norms.
- **National Disaster Management Guidelines on Biological Disasters (2016).**

2. Surveillance Mechanisms

- **Integrated Disease Surveillance Program (IDSP).**
- **Indian Council of Medical Research (ICMR)** network of virus research labs.
- **Biosafety Level-3 and 4 laboratories** (NIV Pune, BSL-4 Chennai emerging).

3. Defence Preparedness

- **DRDO** develops detection kits, protective gear, biological threat sensors.
- **Armed Forces Medical Services** maintain rapid response teams.

4. International Collaboration

- Compliance with **Biological Weapons Convention (BWC)**.
- Engagement with WHO's **Global Outbreak Alert and Response Network (GOARN).**

Challenges in Tackling Bioterrorism

1. Lack of rapid diagnostic capacity across districts.

2. Insufficient biosafety compliance in smaller labs.
3. Limited coordination between public health and security agencies.
4. Underinvestment in epidemiology workforce.
5. Cyber-biosecurity threats (hacking DNA printers, altering genomic data).
6. Misinformation leading to public panic (infodemics).
7. Cross-border dimensions – India's neighbourhood has fragile health systems and terror groups.

Way Forward

1. **Strengthen Public Health Infrastructure**
2. **Inter-agency Coordination-** Create a **National Biosecurity Authority** for unified oversight.
3. **Invest in Biotechnology Safeguards-** Mandatory bio-risk assessments of labs.
4. **Build Rapid Response Capability-** Stockpiles of vaccines, antivirals, PPE.
5. **Enhance Surveillance and Early Warning-** AI-based outbreak detection.
6. **Legal and Policy Framework-** Update biosafety regulations; introduce penalties for dual-use misuse.
7. **Public Communication Strategy-** Combat misinformation with transparent communication during biological events.
8. **International Cooperation-** Share expertise in IOR under **SAGAR**.
   - Support BWC reforms for verification mechanisms.

Bioterrorism is a silent, asymmetric, and high-impact threat that can cripple health systems and destabilise nations. India's experience with COVID-19 has underscored the need to treat biological threats as **national security challenges**. Strengthening biosecurity, investing in science, and fostering multi-sectoral coordination will be critical for making India resilient against future biological attacks and ensuring health security in the 21st century.

1.16 India–Russia Relations

The visit of Russian President Vladimir Putin to India in December 2025 for the **23rd Annual Summit** marks a significant moment in the evolution of India–Russia relations. At a time of shifting global geopolitics, sanctions-driven Russian realignments, and India's pursuit of strategic autonomy, the visit reaffirmed the continuity of a historically stable partnership while signalling important recalibrations.

Historical Context

India and Russia share a long-standing "**Special and Privileged Strategic Partnership**," rooted in Cold War cooperation, defence ties, space collaboration, and political support in multilateral fora. However, the post-Ukraine war environment, diversification of India's defence procurement, and Russia's tilt toward China posed challenges requiring strategic reassessment.

Key Outcomes of the 2025 Visit

1. **Reorientation Toward Economic Partnership**
   - Leaders outlined a roadmap to increase **bilateral trade to USD 100 billion by 2030**.
   - Focus shifted from a **defence- and energy-heavy relationship** to a **broader economic**

agenda including pharmaceuticals, engineering goods, agriculture, chemicals, digital technologies and labour mobility.
- India pushed for **correction of the trade imbalance**, as Russian exports (crude oil, coal, fertilisers) dominated trade in recent years.

2. Energy Security Commitments- Russia assured **"uninterrupted" supply of crude oil and coking coal** despite Western pressure.

3. Defence and Strategic Cooperation- Defence ties remain an important pillar, but with a shift from mere procurement to **joint manufacturing, technology transfer**, and cooperation in **aviation, space, and high-end defence systems**..

4. Connectivity & Geopolitical Coordination- Renewed focus on the **International North–South Transport Corridor (INSTC)** and Chennai–Vladivostok maritime route.

5. **Nuclear & space cooperation:** Russia is India's only foreign civil nuclear partner on the ground (e.g., Kudankulam Nuclear Power Plant), and a key collaborator for Gaganyaan astronaut training and space-tech sharing.

6. People-to-People & New-Age Sectors- Negotiations progressed on **labour mobility**, educational exchanges, tourism cooperation and cross-border payment mechanisms.

Significance of the Visit

1. Reaffirmation of Strategic Autonomy- The visit signalled that despite Western pressure, India will maintain an independent foreign policy, engaging all major powers based on national interest.

2. Russia's Turn to the East- With sanctions restricting access to Western markets, Russia is actively diversifying toward Asia. India emerges as a key partner in Moscow's "pivot to the Global South", giving New Delhi enhanced bargaining leverage.

3. Stabilising Factor Amid Global Flux- For India, a stable relationship with Russia is essential for:
- affordable energy,
- critical defence spares,
- diversification of supply chains,
- balance against China-Russia alignment.

4. Economic Opportunities for India- Access to the Russian market can boost India's pharmaceuticals, machinery, textiles, agriculture and open new areas such as defence co-development and digital technologies.

Challenges in the Partnership

1. **Trade imbalance** heavily favouring Russia; limited Indian exports.
2. Geopolitical Pressures & Ukraine War
3. **Russia–China proximity**, which complicates India's security environment.
4. **Western (US/EU) pressure** on Indian purchase of Russian oil and defence systems.
5. **Delayed defence deliveries**, especially due to Russia prioritising its Ukraine theatre.
6. **Connectivity constraints** and payment mechanism difficulties due to sanctions.

Way Forward
- **Deepen Co-production & Technology Sharing in Defence.**
- **Fast-Track Connectivity Projects.**

- **Cooperate on New-Age Technologies & Energy Transition.**
- **Strengthen People-to-People and Educational Links.**
- **Institutionalise Strategic Dialogue Amid Global Flux- Calibrated balancing** between Russia and Western partners to safeguard strategic autonomy.
- **Diversify economic engagement** in areas like pharma, electronics, agro-products, IT and green energy.
- **Enhance defence collaboration** via joint R&D, indigenisation and technology transfer.
- **Operationalise INSTC** and alternative payment systems to reduce vulnerability to sanctions.
- **Strengthen people-centric engagement** through e-visas, scholarships and labour mobility agreements.

President Putin's 2025 visit marked a **transformative phase** in India–Russia relations. While defence and energy remain foundational, the partnership is slowly pivoting toward a **more diversified, economically resilient, and future-oriented relationship**. For India, maintaining a stable Russia channel enhances strategic autonomy, energy security, and its leverage in a rapidly polarising world order.

1.17 India's Quantum Jump

Context: NITI Aayog's "Transforming India into a Leading Quantum-Powered Economy" (prepared via its Frontier Tech Hub, with knowledge partner IBM) sets out a long-term vision: by **2035**, India aims to emerge among the **top three global quantum economies**.

- The roadmap envisages a full-spectrum quantum ecosystem: computing, communication, sensing, materials — with domestic development of hardware, software, cryogenics, and quantum-grade materials; and deployment across strategic sectors (defence, energy, logistics, health, finance).
- Concrete targets include incubating **at least 10 globally competitive quantum startups (each with > US$100 million revenue)**, and capturing **over 50% of global quantum software & services market**.
- The roadmap also emphasises workforce expansion: scaling scientific, engineering, and professional quantum-ready human resource base within coming years.

Why This Matters for India

1. **Technological Sovereignty & Strategic Autonomy**

- Quantum technologies are "dual-use": beyond civilian applications, quantum computing, communication and sensing have deep implications for national security, encrypted communications, defence capabilities, and secure infrastructure.
- Leadership in quantum can help ensure that India is not merely a buyer of foreign tech, but a global innovator — reducing dependence on external powers at a time of growing geopolitical competition.

2. **Economic & Industrial Leap — Deep-tech & High-Value Sectors**

- Quantum tech has the potential to revolutionize sectors: logistics (optimization), energy (grid & renewables management), healthcare (drug discovery, diagnostics), finance (risk modelling, cryptography), materials science, etc.
- Fostering quantum startups and quantum-software industry could attract global markets,

high-end exports and high-skill jobs — aligning with India's aspirations for a knowledge- and innovation-driven economy.

3. **Bridging Research to Real-World Impact (Lab-to-Market)**

- The plan seeks to translate quantum research into practical applications, driving "quantum adoption" across strategic and civilian domains rather than remaining confined to academia.
- Establishing domestic supply-chains (cryogenics, materials, processors) promises "quantum Atmanirbharta" (self-reliance) — vital in a world where supply-chain constraints and export controls increasingly shape technological competition.

4. **National Security & Cyber-Resilience**

- As quantum computing advances globally, existing encryption standards risk obsolescence. The roadmap explicitly flags the need for readiness against "technological surprise" and cryptographic threats.
- Mastery of quantum cryptography, quantum-secure communication, and sensing technologies can boost India's strategic defence, intelligence, and cybersecurity resilience.

Initiatives:

- **National Quantum Mission (2023–2031)** with ₹6000+ crore to build quantum hubs, testbeds, and technologies.
- **Start-up support via iDEX and NQM**, early industry pilots, and India's participation in international collaborations.
- **Quantum communication trials**, QKD networks, and sensing prototypes in strategic sectors.

Constraints Highlighted in the Report

1. **Insufficient Funding Compared to Global Competitors**
2. **Weak Domestic Supply Chain & Hardware Ecosystem**
3. **Shortage of Skilled Human Capital & Limited Industry Participation**
4. **Low R&D Intensity & Weak IP / Research Output**
5. **Risk of Strategic Blind Spots & Security Risks**
6. **Global Geopolitical Risks**: China's dominance in materials, export controls by advanced economies, and global talent competition.

NITI Aayog Roadmap Recommendations:

- **Build domestic quantum hardware & materials ecosystem**: manufacturing for cryo-electronics, detectors, photonics, and processors.
- **Set up quantum-specific standards, testbeds, and certification systems** to ensure global interoperability.
- **Massively scale quantum skilling** through universities, online platforms, and national quantum education programmes.
- **Accelerate industry pilots** in logistics, aviation, energy, pharma, finance, and defence.
- **Strengthen international quantum diplomacy** for market access, supply-chain security and standards leadership.
- **Ensure early transition to PQC** across government and critical infrastructure.
- **Create a national quantum venture fund** and innovation-to-market accelerators.

NITI Aayog's quantum roadmap marks a **paradigm shift** — treating quantum technologies not as niche research but as a strategic frontier for India's technological sovereignty, economic growth and security in the decades to come. The ambition to reach "top-3 global quantum economy" status by

2035 is bold, but feasible only if India addresses structural challenges: funding, supply-chain, hardware capability, human capital and regulatory architecture.

1.18 Struggles of Indian Rupee

Context: Recently the Indian Rupee (INR) has breached the psychologically and economically significant level of ₹90 per US dollar — a record low.

Despite reasonably strong macroeconomic indicators for India (e.g. healthy GDP growth), the rupee's depreciation has accelerated — prompting questions about what has changed. This paradox — strong macro fundamentals but weak currency — reflects the complex interplay of global and domestic forces affecting INR.

Key Factors Driving Depreciation:

1. **Strong US Dollar and Global Monetary Conditions-** The strengthening of the Federal Reserve (Fed) and relatively higher yields in US dollar assets.
2. **Volatile Global Order**: Global risk-off sentiment (geopolitical uncertainty, shifting capital flows) drives investors towards safe-haven currencies like USD — pushing down INR.
3. **Widening Trade and Current Account Deficit (CAD)-** India's heavily depends on imports — especially on crude oil, capital goods, intermediate inputs.
4. **Capital Outflows / Weak Foreign Investment Inflows-** Recent months have witnessed outflows of foreign portfolio investments (FPIs) and subdued foreign direct investment (FDI), reducing demand for INR.
5. **Domestic Economic Dynamics: Import Demand & Inflationary Pressures-** India's growth trajectory necessitates imports of capital goods, energy, electronics and other inputs — pushing up demand for dollars.
6. **Policy and Other issues-** Uncertainty over global trade, Reduced or limited intervention by the Reserve Bank of India (RBI) in forex markets.
7. **US–India Trade Deal Uncertainty.**
8. **High gold imports.**

Negatives & Positives of a Weak Rupee

🔻 **Negative Impacts**

- Imported Inflation & Increased Cost of Living
- Increased Cost for External Debt & Foreign Currency Loans
- Higher Cost of Foreign Travel, Education, Imports
- Erosion of Real Incomes for Many
- Uncertainty & Capital Flight Risk

✅ **Potential (Relative) Benefits**

- Export Competitiveness
- Incentive for Domestic Substitution / Import Substitution
- Benefit to Foreign-Earning Sectors
- Potential Boost for Tourism & Foreign Inflow (if leveraged properly)

Steps to strengthened Indian Rupees

1. **Boost Exports & Reduce Import Dependence-** Promote export-oriented manufacturing and services (through incentives, competitiveness, trade facilitation), to increase foreign exchange inflows.
2. **Expand Rupee-Based Trade Settlement:** Scale up **Special Vostro Rupee Accounts (SVRAs)** with more countries to reduce dollar dependence.
3. **Attract and Sustain Foreign Capital Inflows (FDI & FPI)-** Improve ease of doing business, strengthen governance, regulatory predictability, and policy consistency to make India more attractive to foreign investors.
4. **Deepen Global Market for INR:** Develop a global INR forex market so international banks can trade Rupee round the clock.
5. **Prudent External Account Management and Current Account Correction-** Manage and narrow current account deficit — through measures like energy diversification, encouraging renewable energy, efficient energy use, and export growth.
6. **RBI Intervention & Forex Reserves Management-** The Reserve Bank of India (RBI) may intervene (directly or via swaps) in the foreign-exchange market to smooth excessive volatility and prevent panic depreciation.
7. **Promote Foreign Currency Earners and Remittances-** Encourage sectors that earn foreign currency — IT-services, outsourcing, tourism, remittances from diaspora — through skill development, policy support, and stable environment.
8. **Long-Term Structural Reforms-** Improve competitiveness (labor reforms, infrastructure, technology adoption) to reduce import-intensity and increase export capacity.

For sustainable appreciation and currency stability, India needs a composite strategy: deeper structural reforms, export diversification, import-substitution, stable and growth-friendly policy framework, and prudent forex/reserve management by RBI. Ultimately, strengthening the external account — by aligning imports, exports, foreign investment, and foreign-exchange earnings — will be central.

1.19 New Age Constitutionalism

Context: The government's rapid rollback of its directive mandating the Sanchar Saathi app—after concerns over consent, surveillance and data misuse—has reignited national debate on digital constitutionalism.

The rapid expansion of the digital ecosystem—characterized by large technology platforms, algorithmic governance, big-data surveillance, and transnational information flows—has created new challenges for fundamental rights, accountability, and democratic oversight. **Digital Constitutionalism** refers to the evolving set of principles, norms and regulatory frameworks aimed at ensuring that constitutional values such as **privacy, freedom of expression, equality, rule of law, and due process** are protected in the digital age. It extends the logic of constitutionalism into cyberspace, ensuring that digital power—both state and corporate—is subject to rights-based constraints.

Digital Constitutionalism can be defined as: "A normative framework that attempts to regulate digital technologies, digital platforms, and digital governance in a manner consistent with constitutional values such as fundamental rights, transparency, accountability, and democratic control."

It is a response to the rise of:

- **Big Tech monopolies**,
- **AI-driven decision-making**,
- **State surveillance**,
- **Cross-border data flows**, and
- **Weak digital rights protections**.

Thus, it seeks to create a *constitutional order* for the digital world.

Pillars of Digital Constitutionalism

1. **Protection of Digital Fundamental Rights**
   - Privacy (e.g., GDPR, India's DPDP Act)
   - Freedom of speech and access to information
   - Protection from algorithmic bias
   - Data protection and informational autonomy
2. **Regulation of Digital Power**
   - Checks on state surveillance
   - Regulation of Big Tech platforms
   - Ensuring platform neutrality and competition
3. **Transparency & Accountability in Digital Governance**
4. **Digital Rule of Law-** Predictable, rights-based digital regulation, Due process in digital enforcement actions.
5. **Democratic Participation in Digital Spaces-** Inclusion in digital rule-making.
6. **Protection of Digital Public Sphere-** Platform accountability without undermining free speech

How Digital Constitutionalism Differs from Classical (Old) Constitutionalism

Aspect	Classical Constitutionalism	Digital Constitutionalism
Primary Threat	State overreach	Both state *and* Big Tech overreach
Focus of Rights	Physical spaces, offline activities	Digital rights (data, privacy, AI), online expression
Power Centers	Legislature, executive, judiciary	Tech platforms, algorithms, data monopolies
Territoriality	Bound by national borders	Cross-border digital flows, global internet
Regulatory Needs	Limited state intervention	Strong regulation for platforms, AI, data
Nature of Public Sphere	Newspapers, assemblies	Social media, digital platforms
Accountability Tools	Judicial review, checks & balances	Platform audits, algorithmic transparency, data protection regimes

Advantages of Digital Constitutionalism

1. **Strengthens Digital Rights Protection-** Ensures privacy, freedom of speech, and autonomy in online spaces.
2. **Creates Accountability for Big Tech-** Breaks monopolistic behavior **& e**nsures transparent, fair platform rules.
3. **Protects Citizens from State Overreach-** Regulates surveillance, digital policing, and state access to data.
4. **Improves Trust in Digital Governance-** Transparent and rights-based digital frameworks build user confidence.
5. **Promotes Equitable Digital Ecosystem-** Prevents algorithmic discrimination **& p**rotects

marginalized communities from digital exclusion.

6. Supports Democratic Values- Safeguards against misinformation, targeted propaganda, and online manipulation.

Challenges of Digital Constitutionalism

1. **Jurisdictional Complexity-** Internet is global, but laws are national → conflict of laws.
2. **Big Tech Resistance-** Corporations possess immense lobbying power and technological advantage.
3. **Rapid Technological Change-** Law and constitutional norms evolve slowly; technology outpaces regulation.
4. **Risk of Over-Regulation-** Heavy digital regulation may hinder innovation and economic growth.
5. **Balancing Free Speech and Harm Prevention-** Content moderation risks censorship or political misuse.
6. **Weak Institutional Capacity-** Regulators lack technical expertise to audit algorithms, AI models, or data practices.
7. **Digital Divide-** Constitutional protections are meaningless if large sections of society lack access or literacy.

Digital constitutionalism is an emerging response to the unprecedented concentration of digital power and its impact on democratic institutions. It reimagines constitutional values—privacy, equality, liberty, rule of law—for the age of algorithms, AI and global digital platforms. For India, the journey involves building strong digital rights frameworks, independent oversight bodies, and transparent platform governance while ensuring innovation, growth, and inclusion.

1.20 India–China Relations

India and China—two rising Asian powers and neighbours with civilizational links—share a complex relationship marked by cooperation, competition, and contestation. Their engagement significantly shapes the strategic architecture of Asia and the global order.

Points of Convergence

1. **Shared Global Governance Interests-** Both seek a multipolar world order and reform of global institutions like the UNSC, IMF, and WTO.
2. **Common positions on climate equity**, "Common but Differentiated Responsibilities" (CBDR), and developmental space.
3. **Economic Complementarity-** India offers a large market and service-sector strength; China offers manufacturing scale and capital.
4. **Trade exceeds USD 120+ billion** (despite deficit issues), reflecting deep economic interdependence.

5. **BRICS, SCO & Global South Orientation-** Both work together in BRICS, SCO, G20 for financial reform, counter-terror norms, and development cooperation.
6. **Connectivity & Regional Stability-** Shared interest in stability in Afghanistan,

counterterrorism, and regional economic integration.

7. **Cooperation possible in trans-Himalayan connectivity, supply chains, and disaster management.**
8. **Climate & Environment-** Leading emitters with shared needs for clean-tech transition, green finance, and resilient development.

Points of Divergence / Major Issues

1. **Border Disputes-**Long-standing LAC differences across Western, Middle and Eastern sectors, Galwan (2020) and continued PLA deployments in Eastern Ladakh, disengagement pending in some locations.
2. **China–Pakistan Nexus-** China's political, military, and nuclear support to Pakistan.
    a. CPEC projects pass through PoK, undermining India's territorial sovereignty**.**
3. **Strategic Rivalry in the Indo-**PacificChina's expanding naval presence in the Indian Ocean.
4. **Trade Imbalance & Economic Concerns-** India faces a ~$80–90 billion trade deficit with China.
5. **China's Influence in South Asia-** Growing influence in Sri Lanka, Nepal, Bangladesh, Maldives via BRI.
    a. **"String of Pearls" concerns and debt-related vulnerabilities.**
6. **Technology & Security Issues-** Cyber intrusions, data security concerns, and restrictions on Chinese apps, investments under FDI rules.
7. **Multilateral Frictions-** China's repeated block on UN designation of Pakistan-based terrorists.

Way Forward

1. **Rebuilding Strategic Trust-** Restoration of LAC status quo ante (pre-2020) and completion of disengagement and de-escalation.
2. **Clarification of the LAC-** Technical exchange of maps to avoid differing perceptions.
3. **Leveraging Multilateral Platforms-** Use BRICS, SCO, G20 to maintain dialogue despite bilateral tensions.
4. **Cooperation in global health, climate finance, AI governance, and counterterrorism norms.**
5. **Balanced Economic Engagement-** Diversify supply chains while retaining beneficial trade.
6. **Promote Indian manufacturing (PLI scheme), semiconductor ecosystem, and critical mineral partnerships.**
7. **Calibrated Competition in Indo-Pacific-** Strengthen QUAD, IORA, and SAGAR but maintain strategic autonomy.
8. **Neighbourhood First & Regional Diplomacy-** Counter Chinese influence through connectivity, development partnerships, Line of Credit, and capacity building in South Asia.
9. **People-to-People & Academic Exchanges-** Resume tourism, educational exchanges, and diplomatic training programs.

India–China relations are a blend of convergence and competition. While economic complementarities and multilateral cooperation create space for engagement, unresolved borders and strategic rivalry pose structural challenges. The way forward lies in managing differences, enhancing deterrence, and sustaining dialogue, guided by realism and restraint. For two major Asian powers, coexistence is not a choice but a strategic necessity.

1.21 Issues related to Devolution of Finance in India

Fiscal federalism in India is designed to ensure that resources flow from the Union to the States and from States to Local Governments to enable efficient, equitable public service delivery. However, despite recommendations of successive Finance Commissions and constitutional mandates, devolving financial powers remains an area of persistent friction and asymmetry.

Issues Related to Fiscal Devolution in India

1. **Vertical Imbalance-** The Union controls **~60% of total revenues**, while States bear **~60% of total expenditure responsibilities**, creating structural dependence.
2. **Growing centralization through cesses and surcharges- As** of recent years, **18–20% of Union tax revenue** is collected via cesses/surcharges.
3. **Declining Share of Grants-in-Aid-** The shift from scheme-based grants to tax devolution after the 14th Finance Commission led to:
    - Reduction in discretionary grants,
    - States struggling to finance social sector schemes without adequate support.
4. **Issues with GST Framework-** States surrendered significant taxation powers to the GST Council.
5. **Delayed compensation**, rate rationalisation disputes, and uncertainty over future compensation mechanisms undermine fiscal autonomy.
6. **Weak State Finance Commissions (SFCs)-** SFCs are irregularly constituted; reports are often delayed.
7. **Increased Conditionality in Central Schemes-** CSS (Centrally Sponsored Schemes) impose rigid conditionalities (60:40, 50:50 sharing), often ignoring state-specific needs.
8. **Borrowing Constraints-** FRBM Act caps State borrowing; Union also controls open market borrowings.
9. **Delayed Transfers & Cash Flow Issues-** Central fund release delays, mismatch between budgeted and actual transfers, and poor predictability impair state planning.

Way Forward

1. **Expand the Divisible Pool-** Reduce reliance on cesses/surcharges or bring a portion into the divisible pool.
2. Periodic review of vertical and horizontal devolution to match functional responsibilities.
3. **Strengthen the GST Framework-** Establish a **permanent GST Compensation mechanism** for revenue stability.
4. **Reform Centrally Sponsored Schemes-** Rationalise the number of CSS; introduce **greater flexibility** for States.
5. **Empower State Finance Commissions-** Mandatory constitution every 5 years with clear timelines.
    - Give SFC recommendations legal enforceability similar to Central FC.
6. **Enhance Local Government Revenues**
7. **Decentralised Planning & Integrated Fund Flow**
8. **Relax Borrowing Limits with Conditions-** Allow additional borrowing tied to reforms

(power sector, urban finance, human development outcomes).

9. **Promote Cooperative Fiscal Federalism**

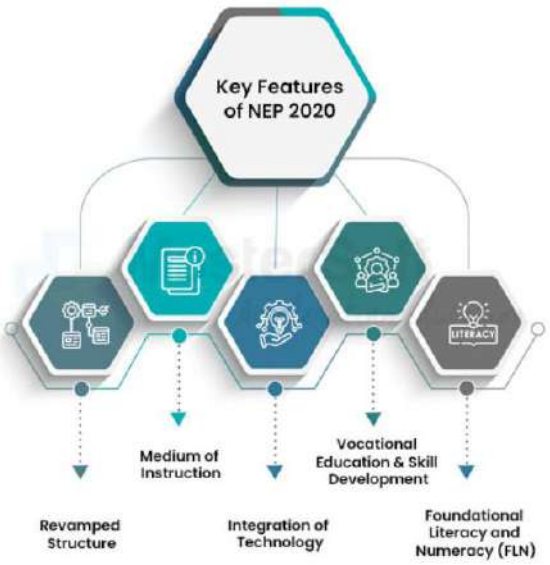
India's fiscal federalism is robust in design but constrained in practice. Real devolution requires expanding the fiscal space of States and Local Bodies, rationalising central control, strengthening institutions like the GST Council and SFCs, and aligning funds with functional responsibilities. A more balanced fiscal architecture will deepen cooperative federalism and enable more equitable, efficient development.

1.22 NEP led Transformation (PIB)

The National Education Policy (NEP) 2020 is the most comprehensive reform of India's education system since 1986. It attempts to shift the system from rote learning to holistic, competency-based education, aligned with 21st-century skills, equity, and universal foundational literacy. In the domain of school education, NEP has initiated structural, curricular, pedagogical and governance reforms.

How NEP 2020 Has Transformed School Education

1. **Structural Reform: 5+3+3+4 System-** Replaces the 10+2 system and aligns schooling with the **early childhood stage**, integrating Anganwadis with formal schooling.
2. Promotes continuity, age-appropriate curriculum, and inclusion of pre-school learning.
3. **Foundational Literacy & Numeracy (FLN) as Priority- NIPUN Bharat Mission** aims at universal FLN by Grade 3.
4. **Competency-Based Curriculum & Assessments-** Shift from memorization to **critical thinking, problem-solving, experiential learning**.
5. **Multidisciplinary and Flexible Learning-** Integration of **art, sports, vocational skills, coding, AI**, and Indian knowledge systems.
6. **Mother Tongue as Medium of Instruction-** Emphasis on teaching in home language/local language till Grade 5 (preferably till 8).
7. **Technology Integration- DIKSHA Platform**, **SWAYAM**, **PM e-Vidya**, and digital content in multiple languages.
8. **School Quality and Governance Reforms- School Quality Assessment and Accreditation Framework (SQAAF)** to benchmark learning and infrastructure.
9. **Professionalization of Teaching-** New teacher education norms, **4-year integrated B.Ed**, continuous professional development (CPD), and teacher performance metrics.



Key Initiatives Under NEP 2020

1. NIPUN Bharat (FLN Mission)- National FLN mission to ensure reading and numeracy skills by Class 3.
2. Vidya Pravesh- A 3-month foundational school readiness module for Grade 1 entrants.
3. PM SHRI Schools- Nationwide model schools showcasing NEP-aligned pedagogy, green

infrastructure, and digital classrooms.
4. National Curriculum Framework (NCF 2023)- Redesigned curriculum, textbooks, learning outcomes, and board exam structure.
5. PARAKH (National Assessment Centre)- Standardises learning outcomes and integrates evaluation reforms.
6. Increased Use of Digital Ecosystem- DIKSHA, e-content in regional languages, smart classrooms, and digital teacher training.
7. Integration of Vocational & Skill Education- Exposure to crafts, coding, robotics, and entrepreneurship from early grades.
1. 8. School Complexes/Clusters- Pooling of resources (teachers, labs, counsellors) among schools to ensure equity and efficiency.

What More Remains to Be Done

1. **Bridging Digital Divide-** Access gaps in rural areas, affordability issues, and digital literacy constraints remain major challenges.
2. **Teacher Shortage & Capacity Gaps-** Over **10 lakh vacancies** nationwide.
3. **Implementation of Mother-Tongue Instruction-** Limited availability of multilingual textbooks and trained teachers.
4. **Examination Reform Needs Deeper Execution-** Board exams still remain largely content-heavy and high-stakes in practice.
5. **Funding Constraints-** Education expenditure still below the targeted **6% of GDP**.
6. **School Merging & Complexes Require Sensitivity-** Risk of alienating students in tribal or remote locations.
7. **Inclusion & Equity Gaps-** Learning losses from COVID-19, gender gaps in certain regions, and challenges for CWSN (children with special needs).
8. **Overlapping Institutions & Governance Bottlenecks-** Need for clarity on roles of NCERT, SCERTs, NCF, school boards, and state education departments.

NEP 2020 is transforming India's school education landscape by shifting from rote-based learning to a **learner-centric, flexible, and competency-based system**. While significant progress has been made—especially in foundational learning, curriculum reforms, teacher development, and digital education—the true success of NEP depends on **adequate investment, strong teacher capacity, reducing inequities, and effective state-level implementation**. Moving forward, India must focus on inclusive, well-funded, and outcome-oriented reforms to fulfil NEP's vision of quality education for all.

1.23 India–USA Trade Related Frictions

In 2025, the Donald Trump administration in the United States imposed steep tariffs on Indian exports — initially 25 %, escalating to 50 % — as part of a new trade policy. As a result, exports from India to the US plunged sharply between May and October 2025 — reportedly by around 28.5%.
Simultaneously, bilateral trade negotiations between the two countries have stalled. According to the Indian Commerce Ministry, talks for a bilateral trade agreement (BTA) are underway, but "geopolitical issues" have overtaken trade — complicating progress.

Thus, a historic period of strategic co-operation between the two nations has been marred recently by palpable economic friction.

Reasons Behind the Friction

1. **US Trade Deficit & Reciprocal Tariff Policy**: The US cited its growing trade deficit with India as justification.
2. **Non-tariff Barriers & Regulatory Concerns**: The US has frequently criticized India's high applied tariffs on a variety of goods (agricultural products, processed foods, medical devices, etc.) along with regulatory measures such as sanitary-and-phytosanitary (SPS) standards and restrictions.
3. **Geopolitical Dimensions — Energy and Defence Ties**: A key trigger for the latest tariff escalation was India's continued energy and defence engagement with Russia — especially imports of discounted Russian oil.
4. **Agriculture & Sensitive Domestic Interests in India**: India has been resistant to US demands for greater access to its agricultural and dairy sectors, citing domestic livelihood concerns and rural political sensitivities. This resistance has been a recurring barrier in trade negotiations.
5. **Market Access & Investment**:
    - **Agriculture**: India seeks access for farm goods (e.g., fruits, shrimp); US seeks market for ethanol.
    - **Investment**: US pushes for eased FDI caps in sectors like insurance/retail; India has restrictions in sensitive areas.
6. **Digital Economy & Data**: **Data Localization**: Conflicting policies on cross-border data flow, digital taxation.
7. **E-commerce**: Disagreements at the WTO on e-commerce rules.
8. **Services & Mobility**: **Visa Issues**: US visa restrictions (H1-B) affect Indian IT professionals.
9. **Services Trade**: Services trade is nearly balanced, but digital services/IT remains key.

Impact of the Friction

- **Export slump & sectoral distress**: Key labour-intensive sectors — like textiles.
- **Small and medium enterprises (SMEs) vulnerable**
- **Economic growth headwinds**: Estimates suggest that persistent trade disruption could lower India's GDP growth by about 0.5 to 1 percentage point.
- **Erosion of trust & strategic uncertainty**
- **Supply-chain disruptions & loss of competitiveness**.

Way Forward:

1. **Diversify Export Markets and Reduce Dependence on US-** India should accelerate efforts to expand exports to other regions (e.g. Africa, Latin America, EU, ASEAN) to reduce dependence on the US market.
2. **Strengthen Export Support Mechanisms Domestically-** Operationalise and scale up export-promotion plans such as interest subsidies, incentive schemes, and duty-drawback enhancements to help manufacturing exporters absorb tariff impacts.
3. Support SMEs and labour-intensive sectors with targeted policy measures — to protect livelihoods and prevent unemployment.
4. **Revive Bilateral Trade Negotiations with Strategic Clarity-** Engage with the US to seek

a balanced interim agreement.

5. **Leverage Strategic Autonomy & Global Geopolitics Wisely-** India should maintain strategic autonomy — balancing its relations with Russia and other global partners.
6. **Longer-term Focus on Domestic Competitiveness and Value Addition.**

For sustainable bilateral relations, pragmatism must be married with strategic vision — ensuring economic interests are protected without compromising national autonomy or long-term growth aspirations.

1.24 Bottlenecks of Aviation Sector

Context: 2025 has been a year of debacle in Indian aviation. From Air India crash to chaos in aviation industry related to rule changes.

Issues in Aviation Sector

1. **Duopoly in Market-** IndiGo controls ~62% of the domestic market, while the Tata Group (Air India + Vistara + AI Express) holds ~29%.
    - IndiGo's massive operational meltdown has reignited debate on market dominance, weak competition, and structural flaws in India's aviation ecosystem.
2. **Regulatory Under-capacity and Institutional Vacancies-** The parliamentary panel report (2025) highlighted that over **53% of sanctioned posts at DGCA are vacant**.
3. **Maintenance, Supply-chain and Technical Failures-** Several carriers grounded large parts of their fleets due to engine failures: in particular, issues with engines.
4. **High Demand:** under pressure to keep high flight frequencies may be keeping older aircraft in service longer than safe or optimal, further risking safety lapses.
    - The rapid expansion of the aviation sector (fleet growth, passenger growth) seems not to have been matched by proportional augmentation of regulatory bandwidth — creating a dangerous mismatch between scale and safety governance capacity.
5. **Safety Oversight & Compliance Gaps** — Weak Enforcement Culture.
6. **Human Resource Shortages:** Pilots, Crew, Safety Staff & ATC.
7. **Reactive, Rather than Proactive, Safety Culture** — Governance Gaps.

Trends of Indian Aviation Market

- **Rapid Passenger Growth-** India is among the **fastest-growing aviation markets globally**.
- Domestic air passenger traffic crossed **150–160 million annually**, recovering strongly after Covid.
- Tier-II and Tier-III cities show double-digit growth.
- Estimated commercial fleet projected to reach **~2,000 aircraft by 2035**.
- **100+ new airports** under UDAN and expansion through *GMR, Adani, AAI.*
- LCCs dominate Indian market (~75% share).
- E-boarding, DigiYatra expansion.
- The number of operational airports has doubled from **74 in 2014 to 157 in 2024**.

Way Forward — Policy & Institutional Reforms

1. **Strengthen Regulatory Institutions — Staffing, Resources & Autonomy**
2. **Enforce a Culture of Safety & Proactive Risk Management**
3. **Upgrade Maintenance Ecosystem & Diversify Technical Base**
4. **Human-Resource Planning & Crew Management Reforms**
5. **Institutionalise Transparent Reporting & Independent Oversight**
6. **Long-term Vision: Domestic Maintenance, Repair, Overhaul (MRO) & Manufacturing Capacity**

Initiatives Taken

1. **Bharatiya Vayuyan Adhiniyam, 2024:** Replaces the archaic Aircraft Act of 1934 to streamline regulations and enhance ease of doing business.
2. **Cape Town Convention Bill, 2025:** Gives statutory protection to aircraft lessors, reducing leasing costs and preventing repossession hurdles (a major issue during the Go First bankruptcy).
3. **Digi Yatra Expansion:** Facial recognition technology is now active at **24 airports**, reducing check-in times and enabling seamless "paperless" travel for over **4 crore passengers**.
4. **Safety & Sustainability: DFDR-CVR Lab:** The DGCA established a new flight recorder analysis lab to speed up accident investigations.
5. **Carbon Neutrality: 80 airports** now run on 100% green energy; Delhi and Bengaluru airports have achieved the highest.
6. **FTO Liberalization:** Abolished airport royalty fees for Flying Training Organizations (FTOs) to encourage domestic pilot training and reduce costs for cadets.

India's civil aviation sector — once a symbol of rising aspiration and connectivity — is now at a critical juncture. The recent spate of safety lapses, grounded planes, capacity crunch and regulatory failures reflect deep structural and governance voids. If left unaddressed, these problems could undermine not only passenger safety and public trust, but also derail India's ambition to emerge as a global aviation hub.

What is required now is **systemic reform**: building institutional capacity; strengthening safety compliance; upgrading technical and human-resource infrastructure; nurturing a culture of accountability; and ensuring long-term self-reliance in maintenance and manufacturing. Only through such comprehensive efforts can India reconcile rapid growth with the uncompromising demands of aviation safety and international standards.

1.25 Curbing Hate Speech

Context: Karnataka has become the first Indian state to introduce a dedicated legislation to curb hate speech and hate crimes — the Karnataka Hate Speech and Hate Crimes (Prevention) Bill, 2025.

Hate speech has emerged as a major governance and societal challenge in India, especially with the growing penetration of digital platforms. It fuels social disharmony, threatens public order, and undermines constitutional values such as equality, fraternity and dignity.

What is Hate Speech?
There is **no single statutory definition** in India. However, **Supreme Court** and **international norms** broadly define hate speech as:
Any expression (spoken, written, visual, or online) that incites violence, discrimination, hostility, or hatred against an individual or group based on identity markers such as religion, caste, ethnicity, gender, language, or nationality.

India's Legal and Institutional Framework to Curb Hate Speech
1. Indian Penal Code (IPC) / Bharatiya Nyaya Sanhita (BNS)
- **Sections 153A / BNS equivalent** – Promoting enmity between groups.
- **Section 295A** – Deliberate acts to outrage religious feelings.

2. Information Technology Act, 2000
- **Section 69A** – Blocking of online content.
- Intermediary Guidelines (2021) mandate removal of unlawful content.

3. Election Commission of India (ECI)
- **Model Code of Conduct** prohibits communal appeals.
- Can censure candidates, bar campaigning temporarily.

4. Law Commission Recommendations

Key Supreme Court Judgements on Hate Speech
1. *Pravasi Bhalai Sangathan v. Union of India (2014)*
- Urged Parliament to frame a specific law on hate speech.
- Said existing laws are inadequate and poorly enforced.

2. *Shreya Singhal v. Union of India (2015)*
- Struck down **Section 66A IT Act**.
- Distinguished **advocacy**, **incitement**, and **mere discussion**.

3. *Amish Devgan v. Union of India (2020)*
- Expanded interpretation of hate speech.
- No need for *actual* violence; likelihood of disturbance is enough.

4. Shaheen Abdulla v. Union of India and Ors, 2022: The Supreme Court (SC) observed a rising climate of hate and directed police to take suo motu action without waiting for formal complaints.

Why Regulating Hate Speech in India is Difficult?
1. **Absence of a Clear Legal Definition-** Existing IPC/BNS provisions are vague → leads to arbitrary use.
2. **Thin Line Between Free Speech and Hate Speech-** Article 19(1)(a) vs. 19(2) reasonable restrictions.
3. **Political rhetoric** often masks hate speech as "free expression".
4. **Digital Proliferation-** Rapid spread, anonymity, encrypted platforms.
5. **Political Polarization-** Hate speech often linked to electoral mobilization.
6. **Weak Institutional Capacity-** Low digital literacy among law-enforcement agencies.
7. **Under-reporting-** Victims fear backlash or lack trust in law enforcement.

Way Forward
1. **A Clear, Narrow, and Precise Statutory Definition-** Implement the **Law Commission's recommendations**.
2. **Strengthening Enforcement Mechanisms-** Special cyber cells in each state.

3. **Algorithmic Transparency & Accountability-** Mandate social media platforms to detect and remove harmful content quickly.
4. **Independent Regulator / Social Media Ombudsman-** For oversight, grievance redressal, and compliance monitoring.
5. **Electoral Reforms-** Stricter penal consequences for communal campaigning.
6. **Promote Counter-Speech & Digital Literacy-** Encourage civil society, educators, and influencers to counter hate narratives.
7. Awareness on fact-checking and responsible online behavior.
8. **Community-Based Approaches-** Interfaith dialogues, peace committees, and local grievance platforms.
9. **Balance Between Freedom and Restrictions-** Ensure restrictions are **proportionate**, not chilling to legitimate dissent.

Hate speech threatens the core values of the Indian Constitution—fraternity, dignity, and equality. While India has taken steps through legal, judicial and institutional mechanisms, the **digital age requires a more updated, balanced, and proactive approach**. A combination of **clear laws, robust enforcement, responsible platforms, and societal awareness** is essential to curb this growing menace.

1.26 Contempt of Court

Context: Contempt power not a sword to silence criticism: SC.
Contempt of Court refers to any act that **scandalises the authority of courts, obstructs the administration of justice, or disobeys court orders**. Its purpose is to maintain the **dignity, authority, and efficacy** of the judiciary. In India, contempt powers are derived from **Articles 129 and 215** of the Constitution and defined in the **Contempt of Courts Act, 1971**.

Evolution of Contempt Jurisprudence in India
1. Colonial Origins- Contempt law in India traces its origin to **English common law**, meant to protect the authority of colonial courts.

- The **Contempt of Courts Act, 1926** was the first codified Indian law empowering High Courts to punish for contempt.

2. Post-Independence Developments

- **Constitution (1950):**
  - Article 129 → Supreme Court as a "court of record" with power to punish for contempt.
  - Article 215 → Same power for High Courts.
  - Article 19(2) permits "reasonable restrictions" on free speech in interest of contempt of court.

3. Contempt of Courts Act, 1971: The Act in India was enacted based on the recommendations of the H.N. Sanyal Committee that defined **Civil Contempt & Criminal Contempt.**

Civil contempt	Criminal Contempt
Civil contempt means willful disobedience to any judgement, order, writ or other	**Criminal contempt means the publication of any matter or doing an act which**

process of a court or wilful breach of an undertaking given to a court.	**1. scandalizes or lowers the authority of a court; or** **2. prejudices or interferes with the due course of a judicial proceeding; or** **3. interferes or obstructs the administration of justice in any other manner.**

Key Judicial Landmarks

1. **S. Mulgaokar case (1978):** Justice V.R. Krishna Iyer advocated **restraint** in invoking contempt.
2. **Arundhati Roy case (2002):** Reignited debate on misuse of criminal contempt.
3. **Justice Karnan case (2017):** First time a sitting High Court judge jailed for contempt.

Issues Associated with Contempt of Court in India

1. **Vague and Overbroad Definition-** Term "**scandalising the court**" is subjective and undefined. Can be used against fair criticism—threat to **free speech**.
2. **Outdated Colonial Nature-** UK itself abolished "scandalising the court" in 2013, calling it "anachronistic". But India still retains broad criminal contempt.
3. **Potential for Judicial Overreach-** Judges act as **victims, prosecutors, and adjudicators** in their own contempt cases.
4. Raises concerns about **rule of law and accountability**.
5. **Chilling Effect on Transparency-** Fear of contempt discourages journalists, legal scholars, and citizens from critiquing: Judicial delays, Wrongful decisions, Administrative inefficiencies Hampers judicial accountability.
6. **Limited Safeguards-** Absence of an **independent review mechanism** before initiating contempt.
7. **Misuse in Civil Contempt-** Courts sometimes invoke it in **routine administrative matters**, weakening its seriousness.

Suggested Reforms and Way Forward

1. **Narrow the Scope of Criminal Contempt-** Limit contempt strictly to: **Clear obstruction of justice**, **Threats to judges**, **Interference in judicial proceedings**.
2. Remove "scandalising the court" from the statute, like the UK.
3. **Strengthen Freedom of Speech-** Protect fair criticism of judgments, judicial functioning, and administration.
4. Allow defence of **truth**, **public interest**, and **good faith**, with wider interpretation.
5. **Establish Independent Screening Mechanism-** Set up a **committee of retired judges or eminent jurists** to examine if a contempt case deserves to be initiated.
6. Avoid judges hearing contempt against themselves.
7. **Prefer Civil Remedies Over Criminal Punishment-** Use fines, directions, or administrative actions instead of imprisonment.
8. **Improve Judicial Transparency-** Strengthen: Open court system, Live-streaming, Reasoned judgments
9. **Judicial Training and Sensitisation-** Encourage judges to adopt **constitutional morality**, **restraint**, and **tolerance of criticism**.
10. **Legislative Reform-** Amend the 1971 Act to reflect modern democratic values.

Contempt of court remains essential to **protect the authority of the judiciary** and ensure **unhindered administration of justice**. However, its criminal component—especially "scandalising

the court"—is a colonial relic that sometimes conflicts with **freedom of speech, transparency, and democratic accountability**. India must adopt a **balanced, proportionate, and rights-centric approach**, ensuring that courts remain respected institutions while allowing legitimate criticism to flourish in a constitutional democracy.

1.27 India's Food and Nutritional Paradox

India faces a unique **dual burden of malnutrition**:

- On one side: **undernutrition, hunger, micronutrient deficiencies**, and child stunting.
- On the other: **over-nutrition, obesity, food waste**, and rising non-communicable diseases (NCDs).

  This paradox coexists within the same society, states, communities, and even households, reflecting deep structural challenges in India's food and health systems.

Magnitude of the Paradox: Key Data

1. Hunger and Undernutrition

- **Global Hunger Index 2024** ranks India **111/125**, with a "serious" hunger level.
- **NFHS-5 (2019–21)**: **Stunting:** 35.5%, **Wasting:** 19.3% (one of highest in world), **Underweight children:** 32.1%, **Anaemia:** 57% in women, 67% in children.

2. Obesity and Lifestyle Diseases

- **NFHS-5:** Obesity among adults increased from *21% (NFHS-4)* to **24% in men** and **41% in women** in certain states.
- **ICMR–2023 Study**: 101 million Indians have diabetes, 315 million have hypertension.
- **Lancet 2023:** Childhood obesity growing at 9–12% annually in urban India.

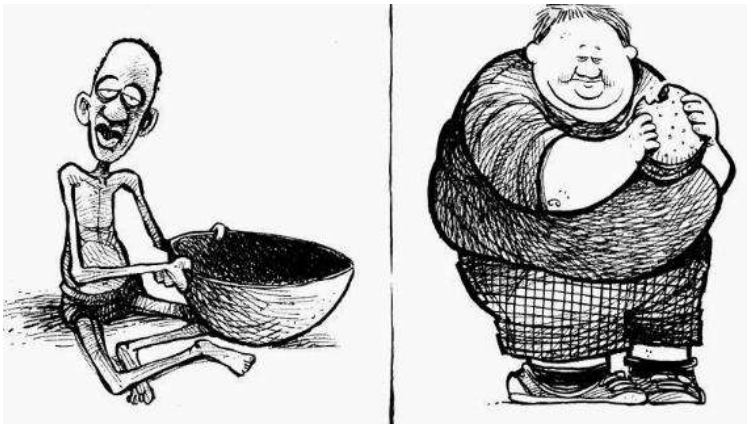
3. Food Waste Paradox

- **UNEP Food Waste Index 2023:** India wastes **~68 million tonnes of food annually**, among highest globally.
- Meanwhile, **over 20% of households** reduce meal size due to lack of food security (NFHS-5).

4. Inequitable Access

- **Consumer Expenditure Survey (2023):** Urban consumers spend 3× more on food variety than bottom-40% households.
- **POSHAN Abhiyaan evaluation:**
  - Only ~60% of targeted beneficiaries receive full nutrition services.

Why Does This Paradox Exist?



1. **Unequal Food Distribution:** India produces **surplus food grains**, yet hunger persists due to: Inefficient PDS delivery, Leakages in supply chain & Poor storage (loss of ~10% grains annually).
2. **Rising Urbanisation and Poor Dietary Choices:** Transition to cheap, ultra-processed, calorie-dense foods → obesity.
3. **Poverty and Purchasing Power Inequality-** Calorie-rich but nutrient-poor diets

dominate low-income groups. Affordability crisis for fruits, proteins, pulses.

4. **Weak Social Protection Implementation-** ICDS, Mid-Day Meal Scheme, and PDS coverage remains uneven.
5. **Agriculture–Nutrition Disconnect-** Food system focuses on **cereal-centric production** rather than: Pulses, Millets, Vegetables, Animal protein.
6. **Cultural Dietary Patterns-** High carbohydrate intake, low protein diversity. Junk food penetration even in rural markets.
7. **Health Infrastructure Gaps-** Only **1.36% of GDP** spent on health (National Health Accounts 2023).
8. **Lack of Nutrition Literacy-** Limited awareness on: Portion size, Balanced nutrition, Infant feeding practices.
9. **Food Wastage at Multiple Levels-** Farm-gate losses, improper storage, retail wastage, buffet culture. Absence of a national policy on food waste prevention.

Way Forward: Multi-dimensional Solutions

1. **Strengthen Food Security & Distribution-** Universalise PDS and integrate **Smart PDS** with Aadhaar, ONORC along with nutritious products.
2. **Shift to Nutrition-Smart Agriculture-** Promote: Millets (post International Year of Millets 2023), Pulses, oilseeds, vegetables, Biofortified crops (e.g., zinc-rich rice, iron-rich bajra), Incentivise crop diversification under MSP.
3. **Improve Coverage of Nutrition Programmes-** Strengthen **ICDS, Poshan 2.0, PM-POSHAN**, and **Anemia Mukt Bharat**.
4. **Tackling Obesity & Unhealthy Diets-** Introduce **front-of-pack labelling** for processed foods. Regulate marketing of junk foods to children.
5. **Food Waste Reduction Strategy-** Launch a **National Food Waste Prevention Mission**. Promote community fridges, Mandatory food donation by restaurants of unsold safe food, Food recovery networks (like Feeding India)
6. **Improve Public Health Infrastructure-** Increase health expenditure to **2.5% of GDP** (National Health Policy target).
7. **Nutrition Literacy & Behaviour Change-** School curriculum integration with nutrition awareness.
8. Social campaigns on healthy eating, breastfeeding, and food hygiene.

India's paradox of simultaneous hunger and obesity is a reflection of **deep-seated inequalities and systemic deficiencies** in food distribution, lifestyle, agriculture, and public health. Addressing this requires a **nutrition-centric development model** that combines equitable food access, healthier dietary practices, and a sustainable food system. Only a holistic, multi-sectoral approach can help India move from "food security" to "nutrition security" in the coming decade.

1.28 "One Nation One Licence One Payment: Balancing AI Innovation and Copyright"

Context & background (brief): Department for Promotion of Industry and Internal Trade (DPIIT) released a working paper titled *"One Nation One Licence One Payment: Balancing AI Innovation and Copyright"* proposing a mandatory, nation-wide blanket licence (plus a central royalty mechanism) that would allow Generative AI developers to train models on "lawfully accessed"

copyrighted works in return for statutory payments to creators. The paper is out for consultation and has already provoked wide debate among creators, industry groups and policymakers.

WHAT IS CREATOR ECONOMY?

It is a collective of creators, platforms (Instagram, YouTube, Snapchat et al), brands and third-party intermediaries like talent management agencies who come together to generate revenue via content-driven models such as advertising, sponsorships, subscriptions, commerce, live-streaming, among other things

Aims of the proposal

1. **Legal clarity for AI training:** Create a clear statutory route for AI developers to use copyrighted material for training.
2. **Fair remuneration for creators:** Ensure copyright holders (authors, journalists, musicians, filmmakers, visual artists etc.) receive compensation when their works.
3. **Simplify compliance at scale:** Replace millions of bilateral negotiations with a centralised, administrable blanket licence and a collective royalty distribution system.
4. **Promote domestic AI growth with safeguards:** Align policy goals for IndiaAI and domestic AI capacity building while attempting to protect the creative economy.

Why this move is needed — the case for reform

1. **Mismatch between current copyright law and GenAI practices:** Modern Generative AI is trained on massive datasets collected from the open web; traditional licensing models and judicial doctrines (fair use/limited exceptions) were not written for scale-at-which models consume creative works. This legal uncertainty creates risk for both creators (no revenue) and firms (litigation exposure).
2. **Threat to creator incentives:** If models can freely learn from works without compensation, creators argue that incentives to produce original content may be eroded — a market-failure argument behind statutory remuneration.
3. **Administrative practicality:** Individual licensing with millions of small rights-holders (including unregistered creators) is practically impossible.
4. **Strategic sovereignty & market leverage:** By setting a domestic rule-book, India can try to shape how global AI firms operate inside its market — both to capture economic gains and to ensure cultural/creative policy objectives are met. mint

Key features proposed

- **Mandatory blanket licence** for training on "lawfully accessed" copyrighted works.
- **Statutory remuneration right** — royalty payments into a centralised fund/collective which then distributes to rights-holders.
- **Possible retroactivity or coverage of past training** (reported as a debated/controversial element in media coverage).

Challenges — legal, economic and practical

1. **Innovation cost & market deterrence:** Industry warns a mandatory levy could act like a tax on models, raising product costs or prompting firms to shift development/training offshore to avoid payment obligations.
2. **Calculation & distribution complexity:** Measuring which works contributed to model behaviour, attributing value, and fairly distributing pooled royalties to millions of diverse creators is extremely complex.
3. **Boundary problems (what is "lawfully accessed" or "used"):** Defining the scope and technical definitions of "use" for models is legally and technically fraught.
4. **Retroactivity & liability exposure:** Proposals that cover past training datasets could impose large, unforeseen liabilities on existing models and operators.
5. **Consent and moral rights:** A blanket, non-opt-out scheme may be perceived as overriding

creators' consent and moral-rights expectations, creating political and legal pushback.

6. **International fragmentation & trade risks:** If India's model diverges sharply from other major jurisdictions, it could complicate cross-border data flows, multinational compliance and trade relations.

Way forward

1. **Phased & proportionate approach:** Start with a pilot/short list of content categories to test metrics and administration before scaling to all creative works. This lowers immediate disruption while learning lessons.
2. **Transparent, mixed measurement regime:** Combine voluntary metadata/registration incentives for creators with sampling-based technical audits (model provenance, dataset logs) to allocate royalties.
3. **Clear definitional guardrails:** Precisely define "lawfully accessed", no retroactivity for past (already-trained models unless exceptional), and narrow "use" definitions.
4. **Industry-creator tripartite governance:** Create an independent, multi-stakeholder body with seats for creators, civil society and industry; mandate transparent rules, appeals, and periodic external audits.
5. **Exemptions for research & small developers:** Carve out limited exceptions for non-commercial research, educational use, and micro-startups.
6. **Incentivise voluntary licensing & technical solutions:** Encourage industry-creator marketplaces, standard machine-readable licences and opt-in registries that can coexist with the statutory route.
7. **International harmonisation & diplomacy:** Use India's proposal as a negotiating position in multilateral fora (WIPO, OECD) to avoid fragmentation and align cross-border norms.

The DPIIT working paper's *"One Nation One Licence One Payment"* model is a bold attempt to square creator rights with rapid AI development in India by seeking legal clarity and remuneration for creators while keeping AI development viable. Its success will depend on careful calibration — clear definitions, proportionality, transparent administration, and safeguards for innovation. Poorly designed mandates (especially retroactive liabilities, opaque allocation or blanket costs without exemptions) risk chilling investment and driving activity offshore; conversely, a balanced, consultative design could make India a global leader in equitable AI governance.

1.29 National Commission for Minorities (NCM)

Context: The **Delhi High Court** sought a response from the **government** over the **delay to fill the vacant posts in the NCM**.

The **National Commission for Minorities (NCM)** was set up in 1992 under the *National Commission for Minorities Act, 1992* to safeguard the interests of India's religious minorities—initially Muslims, Christians, Sikhs, Buddhists, and Zoroastrians; later **Jains** were added in 2014. As an institutional mechanism, NCM plays an advisory, watchdog and grievance-redressal role in ensuring the protection of minority rights guaranteed under Articles 14, 15, 16, 25–30 of the Constitution.

Mandate & Aims of NCM

1. Safeguard Constitutional Rights of Minorities- Monitor the implementation of constitutional safeguards (Art. 29, 30 etc.) and laws for the protection of minorities.
2. Policy Advisory Role- Make recommendations to the Union and State governments on policies affecting minority communities, including education, employment, and welfare.
3. Grievance Redressal- Investigate complaints of: discrimination, deprivation of rights, communal violence, denial of benefits of government schemes.
4. Review of Developmental Schemes- Evaluate the progress of programmes such as the *PM's 15-Point Programme for Minorities*, scholarship schemes, and development initiatives in minority-dominated districts.
5. Research & Awareness- Conduct studies, publish reports and promote inter-faith harmony and national integration.

Issues & Challenges faced by NCM

1. Limited Powers – No Enforcement Authority- The Commission's powers are largely advisory; it cannot impose penalties or enforce its recommendations. This limits its ability to correct rights violations.
2. Lack of Statutory Strength Compared to Other Commissions- Unlike the National Human Rights Commission (NHRC), NCM lacks: civil court powers in many aspects, suo motu investigation powers of sufficient depth, binding authority over governments.
3. Inadequate Representation & Vacancies- Frequent vacancies and inadequate representation from all notified minorities weaken legitimacy and effectiveness.
4. Poor Compliance by States- State Minority Commissions are absent or weak in many states, leading to poor coordination and uneven protection across India.
5. Low Awareness Among Beneficiaries- Minority communities often lack awareness of grievance mechanisms, leading to under-reporting of discrimination cases.
6. Politicisation & Trust Deficit- Perceptions of political influence in appointments and functioning sometimes hinder trust among communities.
7. Limited Resources & Research Capacity Budgetary constraints and limited research staff hamper the commission's ability to monitor large-scale development programmes.

Way Forward

1. Strengthen Legal Powers- Enhance enforcement powers akin to the NHRC—civil court powers, binding recommendations, and suo motu investigation authority—to improve impact.
2. Mandate State-Level Commissions- Make State Minority Commissions compulsory to ensure better coordination and coverage across all states and UTs.
3. Transparency in Appointments- Adopt merit-based, transparent selection procedures; ensure balanced representation from all six notified minorities.
4. Build Data & Monitoring Systems- Strengthen data collection on discrimination, access to education, employment, and welfare schemes to support evidence-based policymaking.
5. Improve Outreach and Awareness- Increase visibility of NCM offices, use digital grievance platforms, and conduct awareness drives in minority-dominated regions.
6. Strengthen Early-Warning Systems for Communal Tensions- Develop district-level monitoring cells to address communal tensions promptly and promote dialogue platforms.
7. Periodic Review of Minority Status- Create clear criteria for designating or reviewing minority status to ensure transparency and avoid political controversy.

The National Commission for Minorities remains a key institution in India's pluralistic framework, designed to uphold the rights and dignity of religious minorities. However, its effectiveness is

limited by weak legal authority, inadequate resources and structural constraints. A more empowered, transparent and data-driven NCM—supported by robust state-level mechanisms—can significantly strengthen India's constitutional vision of equality, secularism, and inclusive development.

1.30 Mexico's Tariff Hike Against India and Asian Imports

Mexico's Senate approved a substantial increase in import tariffs — up to 50 per cent — on a broad range of products from countries with which it does not have a free trade agreement, including India, China, South Korea, Thailand and Indonesia. The measure will come into effect from **January 1, 2026**, and covers over **1,400 tariff lines** including automobiles, auto parts, textiles, plastics, steel and other engineered goods.

Reasons Behind Mexico's Tariff Hike

1. **Protection of Domestic Industry-** The Mexican government justifies higher tariffs as a tool to **shield local manufacturing sectors and safeguard employment.**
2. **Strategic Alignment with the United States-** Mexico's largest trading partner is the United States. The tariff move coincides with mounting **US pressure on Mexico to curb deepening trade ties with China.**
3. **Revenue Augmentation-** Analysts estimate that the revised duties could generate approximately **$3.7 billion in additional revenue** for the Mexican government in 2026.
4. **Correcting Trade Distortions-** Mexican policymakers have also invoked concerns about **trade imbalances and import dependence**.

Impact and Challenges for Indian Exports

1. **Loss of Competitiveness-** A steep increase in tariffs — especially on high-value items such as **passenger vehicles** — will significantly raise the landed cost of Indian goods jeopardising nearly **$1 billion in automotive exports** for Indian firms including Volkswagen, Hyundai, Nissan and Maruti Suzuki, among others.
2. **Disruption of Established Supply Chains-** Indian exporters have used Mexico as a gateway into North American markets and as part of global supply chains. Companies have to **reconsider supply chain strategies and market focus**.
3. **Sectoral Exposure-** Beyond automobiles, sectors like **textiles, steel and aluminium, plastics, and engineered goods** are exposed to tariff hikes of up to 35–50%.
4. **Trade Diversion and Market Loss-** Higher tariffs could prompt Mexican importers to **diversify sourcing** toward alternative suppliers — from Latin America, the US, or FTA partners — reducing India's market share and weakening bilateral trade relations.

Policy Options and Solutions

1. Negotiation of Trade Agreements- Pursue a **bilateral Free Trade Agreement (FTA)** or a **Partial Scope Agreement** with Mexico to secure tariff concessions.

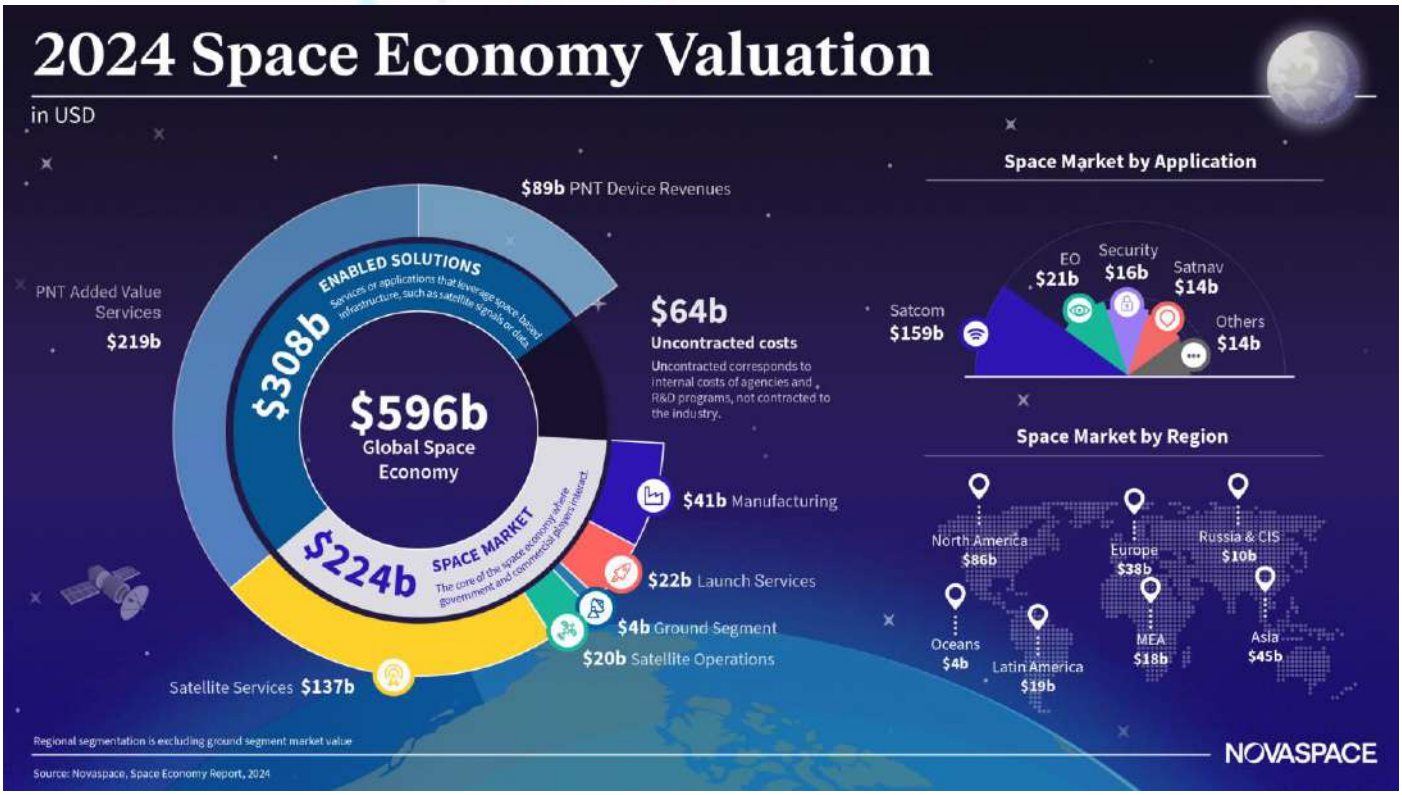
2. Diplomatic Engagement- India should leverage **diplomatic channels and economic dialogues**

to articulate concerns, emphasising mutual benefits of stable trade ties.
3. Export Diversification- Indian exporters must **diversify destinations** beyond Mexico and Latin America by exploring emerging markets in Africa, Southeast Asia etc.
4. Value Addition and Branding- Focus on **enhanced value addition and product differentiation** to maintain competitiveness.
5. Supply-Chain Realignment- Encourage Indian firms to consider **local assembly or joint ventures in Mexico or neighbouring FTA markets** to circumvent high import duties.
6. Engagement at Multilateral For a- Use platforms like the **WTO** to raise concerns about discriminatory tariff escalation and advocate for transparent, predictable trade rules.

Mexico's tariff hike represents a significant shift towards trade protectionism with implications for India's export strategy. While prompted by legitimate domestic policy objectives — protecting industries, aligning with geopolitical partners and boosting revenue — the measure poses real challenges for Indian exporters by raising costs, disrupting supply chains, and threatening market access. A calibrated policy response involving trade negotiation, market diversification, diplomatic engagement and supply-chain adaptation is essential to safeguard India's export interests in an increasingly complex global trading environment.

1.31 Space Governance

Outer space, once a domain of scientific cooperation and peaceful exploration, has increasingly become an arena of strategic competition, commercial exploitation and geopolitical rivalry. The growing race for space is driven by national security imperatives, technological breakthroughs and the emergence of private actors, raising serious concerns about sustainability and governance.



Growing Race for Space

1. **Strategic–Military Dimension**: Space is now recognised as a **critical warfighting domain** (along with land, sea, air and cyber).
    - Countries like the **USA, China, Russia and India** have established dedicated **space commands/agencies**. E.g. Testing of **Anti-Satellite (ASAT) weapons** (e.g., India's Mission Shakti, China's 2007 test) signals militarisation.
2. **Commercialisation and New Space Economy-** Rise of private players such as **SpaceX, Blue Origin, OneWeb**, and ISRO-backed startups.
    - Expansion of satellite-based services: **navigation, communication, earth observation, climate monitoring**.
    - Growing interest in **space mining, tourism and lunar missions**.
3. **Geopolitical Competition-** Competition for **strategic orbits and radio frequencies**.
    - New alliances such as **Artemis Accords** vs alternative frameworks.
    - Space as a tool of **power projection, surveillance and deterrence**.
4. **Scientific and Exploratory Ambitions**
    - Missions to **Moon, Mars and asteroids**.
    - Plans for **space stations, lunar bases and deep space exploration**.

Gaps in Global Space Governance

1. **Outdated Legal Framework-** Core treaties like the **Outer Space Treaty (1967)** were framed during the Cold War.
2. Inadequate provisions for **private players, commercial activities and resource extraction**.
3. **Weak Regulation of Militarisation-** No clear prohibition on **conventional weapons** in space.
4. **Absence of Space Traffic Management-** No binding global regime to manage **satellite congestion and collision risks**.
5. Growing problem of **space debris**.
6. **Lack of Enforcement Mechanisms-** UN Committee on the Peaceful Uses of Outer Space (COPUOS) lacks **binding authority**.
7. **Fragmented Norm-setting-** Competing norms and coalitions (e.g., Artemis Accords) risk **norm fragmentation**.

Challenges Arising from the Space Race

1. **Weaponisation and Security Risks-** Increased risk of **conflict escalation and miscalculation**.
2. Vulnerability of satellites to cyber and kinetic attacks.
3. **Space Debris and Sustainability-** Over **30,000 trackable debris objects**, threatening operational satellites.
4. **Inequality and Space Divide-** Dominance of technologically advanced nations and corporations.
5. Limited access for developing countries.
6. **Regulatory Uncertainty for Private Sector-** Lack of clarity on **liability, ownership of resources and dispute resolution**.
7. **Ethical and Environmental Concerns-**Exploitation of celestial bodies without consensus.

Way Forward

1. **Updating Global Space Laws-** Modernise the Outer Space Treaty to address **commercialisation, private actors and resource use**.
2. Develop legally binding agreements on **space debris mitigation and ASAT restrictions**.

No First Placement of Weapons in Outer Space (NFP).

3. **Global Space Traffic Management-** Establish an international authority for **space situational awareness and traffic coordination**.
4. Mandatory debris mitigation and end-of-life disposal norms.
5. **Inclusive and Equitable Governance-** Ensure participation of **developing countries** in norm-setting.
6. **Capacity-building** through technology sharing and cooperation.
7. **Strengthening Multilateral Institutions-** Empower **UN COPUOS** with monitoring and compliance roles.
8. **Encourage consensus-based global frameworks** over fragmented alliances.
9. **Responsible Role of Emerging Space Powers-** Countries like India can act as **norm**
10. **Promoting Peaceful Use of Outer Space-** Advance initiatives like **entrepreneurs**, advocating peaceful, affordable and sustainable space use.
11. Promote South–South cooperation and open-access space data.

The growing race for space reflects humanity's technological progress and strategic anxieties. However, without robust and inclusive global governance, outer space risks becoming congested, contested and conflict-prone. A cooperative, rule-based and sustainability-oriented approach is essential to ensure that space remains a **global commons for the benefit of all humankind**.

1.32 Revamping MGNREGS

The **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), 2005** is a rights-based social security legislation that guarantees **at least 100 days of wage employment in a financial year** to every rural household whose adult members volunteer to do unskilled manual work. It aims to enhance **livelihood security**, reduce distress migration and create durable rural assets.

Features of MNREGA

- **Legal entitlement**: Employment on demand; unemployment allowance if work is not provided within 15 days.
- **Decentralised implementation**: Planning and execution by **Gram Panchayats**.
- **Wage parity**: Wages linked to state-wise MGNREGA rates (aligned with minimum wages).
- **Asset creation**: Focus on water conservation, land development, drought proofing, rural connectivity.
- **Transparency tools**: Social audits, mandatory muster rolls, Direct Benefit Transfer (DBT).

Issues Faced by MGNREGA

1. Financial and Administrative Issues

- **Inadequate and delayed fund releases** from the Centre.
- **Wage payment delays**, undermining the legal guarantee and discouraging participation.
- Rising **pending liabilities** with states.

2. Wage-related Concerns

- MGNREGA wages in many states are **below market**

wages, reducing attractiveness.
- Irregular revision of wages and lack of linkage with inflation.

3. Implementation Bottlenecks
- **Excessive centralisation** through digital controls, limiting Panchayat autonomy.
- Technical glitches in **Aadhaar-based payment systems** leading to exclusions.
- Poor capacity of local bodies for planning and record-keeping.

4. Quality of Assets
- Creation of **low-quality or non-durable assets** in some regions.
- Weak convergence with agriculture, watershed and climate adaptation programmes.

5. Social and Structural Challenges
- **Low participation of women and vulnerable groups** in certain regions.
- Political interference and occasional corruption despite safeguards.
- Seasonal nature of work limits year-round income security.

How MGNREGA Can Be Revamped

1. Strengthening Financial Architecture
- Ensure **timely and adequate budgetary allocations** based on demand.
- Automatic fund release mechanisms to prevent delays.
- Clear settlement of pending wage and material liabilities.

2. Wage and Employment Reforms
- Link MGNREGA wages to **Consumer Price Index–Rural (CPI-R)**.
- Consider increasing guaranteed days from **100 to 150 days** in distress-prone areas.
- Align wages closer to local minimum wages.

3. Improving Implementation and Decentralisation
- Restore **Gram Panchayat autonomy** in planning and execution.
- Simplify digital processes; provide offline alternatives to avoid exclusion.
- Capacity building of Panchayat officials and field staff.

4. Asset Quality and Convergence
- Focus on **climate-resilient and livelihood-enhancing assets** (water harvesting, soil health, afforestation).
- Stronger convergence with **PMKSY, NRLM and climate action plans**.
- Outcome-based monitoring rather than mere person-days.

5. Enhancing Transparency and Inclusion
- Strengthen **social audits** and grievance redressal mechanisms.
- Improve worksite facilities, especially for **women workers**.
- Encourage participation of SCs, STs and migrant-returnee workers.

MGNREGA remains a cornerstone of India's rural social protection architecture, especially during economic distress and climate shocks. Revamping the scheme through adequate financing, decentralised governance, fair wages and sustainable asset creation can transform it from a relief programme into a powerful instrument of **inclusive and resilient rural development**.

Q. Among the following who are eligible to benefit from the "Mahatma Gandhi National Rural Employment Guarantee Act"? (2011)
(a) Adult members of only the scheduled caste and scheduled tribe households
(b) Adult members of below poverty line (BPL) households
(c) Adult members of households of all backward communities
(d) Adult members of any household
Ans: (d)

Mains Question

Q. "An essential condition to eradicate poverty is to liberate the poor from the process of deprivation." Substantiate this statement with suitable examples. **(2016)**

Q. "Poverty alleviation programs in India remain mere showpieces until and unless they are backed up by political will." Discuss with reference to the performance of the major poverty alleviation programmes in India. **(2015)**

1.33 AMR- The Silent Pandemic

Antimicrobial Resistance (AMR) refers to the ability of microorganisms—bacteria, viruses, fungi and parasites—to resist the effects of medicines, making infections harder to treat. In India, AMR has emerged as a **silent public health emergency**, threatening decades of progress in healthcare, increasing mortality, treatment costs and undermining procedures such as surgeries, chemotherapy and organ transplants.

How AMR is Becoming a Public Health Crisis in India?

- **High Disease Burden + High Antibiotic Use:** India carries a large burden of infectious diseases, leading to **extensive and often irrational antibiotic consumption**.
- **Rising Drug-Resistant Infections:** Increasing prevalence of **drug-resistant TB, typhoid, gonorrhoea, neonatal sepsis and hospital-acquired infections**.
- **Economic and Health Impact:**
  - Longer hospital stays and higher out-of-pocket expenditure
  - Increased mortality, especially among newborns and immunocompromised patients
  - Threat to Universal Health Coverage (UHC)
- **Pandemic Experience:** During COVID-19, indiscriminate antibiotic use despite viral etiology **accelerated resistance trends**.

Reasons for the Growth of AMR in India

1. **Misuse and Overuse of Antibiotics**
   a. Over-the-counter availability without prescription
   b. Self-medication and incomplete antibiotic courses
   c. Empirical prescribing without diagnostics
2. **Weak Regulation and Surveillance**
   a. Poor enforcement of **Schedule H and H1 Drugs Rules**
   b. Inadequate laboratory capacity and fragmented AMR data
3. **Healthcare System Challenges**
   a. High patient load and shortage of trained personnel
   b. Limited access to rapid diagnostic tools, especially in rural areas
4. **Use in Agriculture and Animal Husbandry**
   a. Antibiotics used as **growth promoters in poultry and livestock**
   b. Spillover of resistant microbes through food chain and environment
5. **Poor Sanitation and Infection Control**
   a. Inadequate WASH (Water, Sanitation and Hygiene)
   b. Weak infection prevention and control (IPC) practices in hospitals

Way Forward: Tackling AMR in India

1. **Strengthen Antimicrobial Stewardship**
    a. Rational prescription through **Standard Treatment Guidelines (STGs)**
    b. Mandatory stewardship programs in hospitals
2. **Improve Surveillance and Diagnostics**
    a. Strengthen **National AMR Surveillance Network**
    b. Expand access to affordable **rapid diagnostic tests**
3. **Regulate Antibiotic Use**
    a. Strict enforcement of prescription-only sale
    b. Ban on non-therapeutic use in animals
4. **One Health Approach**
    a. Integrate human, animal and environmental health policies
    b. Inter-ministerial coordination (Health, Agriculture, Environment)
5. **Public Awareness and Behaviour Change**
    a. Mass campaigns on antibiotic misuse
    b. Education of doctors, pharmacists and community health workers
6. **Boost R&D and Innovation**
    a. Incentivise development of **new antibiotics, vaccines and alternatives**
    b. Public–private partnerships and global collaboration

Global Best Practices (2–3 Examples)

1. Sweden – STRAMA Programme
- National antimicrobial stewardship initiative
- Reduced antibiotic use through **guidelines, audits and prescriber accountability**
- Result: One of the **lowest AMR rates in the world**

2. Denmark – DANMAP
- Integrated surveillance of antimicrobial use and resistance in **humans, animals and food**
- Effective implementation of **One Health model**

3. WHO – GLASS (Global Antimicrobial Resistance Surveillance System)
- Standardised global data collection and sharing
- Helps countries identify trends and design evidence-based policies

AMR threatens to push India into a **post-antibiotic era**, where common infections may once again become fatal. Addressing this crisis requires **strong political will, robust regulation, scientific innovation and behavioural change**, guided by a One Health framework and informed by global best practices. Proactive action today is essential to safeguard public health and future generations.

1.34 Indian Ocean as a Base for India's Blue Economy

The **Blue Economy** refers to the sustainable use of ocean resources for economic growth, improved livelihoods and jobs, while preserving the health of marine ecosystems. With a **7,500-km long coastline**, **over 1,300 islands**, and a **2.37 million sq. km Exclusive Economic Zone (EEZ)**, India is uniquely positioned to leverage the **Indian Ocean** as the fulcrum of its blue economy strategy. The Indian Ocean, carrying nearly **50% of global container traffic and 70% of energy trade**, offers immense economic and strategic opportunities for India.

How the Indian Ocean Can Become the Base of India's Blue Economy

1. **Fisheries and Aquaculture**
   a) Marine fisheries, deep-sea fishing and mariculture (seaweed, pearls, cage culture)
   b) Value-addition through processing, cold chains and export infrastructure
   c) Employment generation for coastal communities
2. **Maritime Trade and Ports**
   a) Development of **port-led industrialisation** under *Sagarmala Programme*
   b) Leveraging India's strategic location along major Sea Lines of Communication (SLOCs)
   c) Expansion of shipbuilding, ship repair and logistics services
3. **Offshore Energy Resources**
   a) Exploration of **offshore oil and gas**
   b) Renewable energy: **offshore wind, tidal and wave energy**
   c) Methane hydrates as a potential future energy source
4. **Coastal and Marine Tourism-**Cruise tourism, island tourism (Andaman & Nicobar, Lakshadweep)
5. **Marine Biotechnology and Minerals**
   a) Bio-prospecting for pharmaceuticals, enzymes and nutraceuticals
   b) Deep-sea minerals such as polymetallic nodules (under ISA regulations)
6. **Digital and Knowledge Economy**
   a) Submarine cable networks
   b) Ocean data services, hydrography and marine research

Challenges in Harnessing the Indian Ocean for Blue Economy

1. **Environmental Degradation**
   a. Overfishing, coral bleaching and marine pollution (plastic, oil spills)
   b. Climate change impacts such as sea-level rise and ocean acidification
2. **Institutional and Governance Gaps**
   a. Fragmented governance across ministries
   b. Absence of a comprehensive **National Blue Economy Policy**
3. **Technological and Capacity Constraints**
   a. Limited deep-sea exploration technology
   b. Low private sector participation and investment
4. **Socio-Economic Issues**
   a. Marginalisation of traditional fishing communities
   b. Skill gaps and lack of access to credit and insurance
5. **Geopolitical and Security Concerns**
   a. Strategic competition in the Indian Ocean Region (IOR)
   b. Maritime piracy, illegal fishing and maritime boundary disputes

Way Forward

1. **Adopt an Integrated Blue Economy Policy**
   a. Holistic policy covering environment, livelihoods, security and growth
   b. Align with **SDG-14 (Life Below Water)**
2. **Strengthen Maritime Infrastructure**
   a. Modernise ports, coastal shipping and inland waterways
   b. Promote green ports and smart logistics

3. **Promote Sustainable Fisheries**
    a. Shift to scientific stock assessment and regulated fishing
    b. Expand mariculture and reduce pressure on near-shore resources
4. **Invest in Marine Research & Technology**
    a. Deep Ocean Mission for seabed exploration and ocean climate studies
    b. Indigenous R&D in offshore renewables and biotechnology
5. **Empower Coastal Communities**
    a. Skill development, fisher cooperatives and social security
    b. Promote community-based coastal tourism
6. **Enhance Regional Cooperation**
    a. Leverage platforms like **IORA, SAGAR doctrine and Quad**
    b. Cooperative maritime security and shared ocean governance

The Indian Ocean holds the potential to transform India into a **maritime-driven, sustainable and inclusive economy**. By balancing economic ambitions with ecological responsibility and strategic foresight, India can convert its surrounding oceans into a **pillar of national growth, regional leadership and long-term resilience**—making the blue economy a cornerstone of *Viksit Bharat*.

1.35 Refocus on Nuclear Energy

The **Sustainable Harnessing of Advancement of Nuclear Energy for Transforming India (SHANTI) Bill** is a proposed legislative initiative aimed at modernising India's nuclear energy framework to meet **clean energy, energy security and climate commitments**. It seeks to unlock India's nuclear potential by enabling **advanced nuclear technologies**, greater private participation and alignment with India's long-term development goals such as *Net Zero by 2070*.

How SHANTI Bill Builds on India's Nuclear Strengths?

1. **Strong Indigenous Nuclear Capability-** India has a **three-stage nuclear programme** based on Pressurised Heavy Water Reactors (PHWRs), Fast Breeder Reactors (FBRs) and Thorium utilisation.
    - SHANTI builds upon India's expertise in **PHWR design, fuel cycle management and reactor operation**.
2. **Abundant Thorium Reserves-** India possesses nearly **25% of the world's thorium reserves**.
    - The Bill encourages R&D and deployment pathways for **thorium-based and advanced fuel cycles**.
3. **Advanced Nuclear Energy for Enriched Life (ANEEL) Vision-** SHANTI institutionalises and scales the **ANEEL approach**, focusing on nuclear energy beyond electricity—such as **process heat, hydrogen production and desalination**.
4. **Encouraging Private Sector Participation-** Moves beyond the state monopoly model by enabling **public–private partnerships**, especially in **Small Modular Reactors (SMRs)** and ancillary manufacturing.
5. **Strengthening Global Cooperation-** Builds on India's civil nuclear agreements and NSG-compliant safeguards to promote **technology collaboration, fuel security and export potential**.

Strategic Significance for India

- Supports **baseload clean power**, complementing solar and wind

- Enhances **grid stability** amid renewable intermittency
- Reduces dependence on fossil fuel imports
- Positions India as a **responsible nuclear technology leader** in the Global South

Challenges and Concerns

1. **Safety & Public Perception-** Persistent concerns due to historical nuclear accidents.
2. **Legal and Liability Issues-** Existing **Civil Liability for Nuclear Damage Act, 2010** deters foreign and private investment
3. **High Capital Costs and Long Gestation-** Nuclear projects are capital-intensive with long construction timelines
4. **Regulatory and Institutional Bottlenecks**
5. **Technology and Fuel Constraints-** Sanctions-era legacy issues still affect access to cutting-edge technology.

Way Forward

1. **Strengthen Independent Nuclear Regulation**: Enhance autonomy and capacity of AERB
2. **Reform Liability Framework**: Balanced risk-sharing without diluting safety
3. **Invest in R&D**: SMRs, thorium reactors, nuclear hydrogen and waste recycling
4. **Public Engagement**: Transparency, stakeholder consultation and awareness
5. **International Collaboration**: Joint development of advanced reactors and fuel assurance mechanisms

The **SHANTI Bill represents a paradigm shift**—from nuclear energy as a niche strategic sector to a **mainstream driver of sustainable development**. By leveraging India's indigenous strengths, advancing technology, and reforming governance, SHANTI can help India achieve **clean energy security, climate resilience and technological leadership**. However, its success will depend on **balancing safety, sustainability, affordability and public trust**, making nuclear energy a true instrument of national transformation.

1.36 Terror Outfits & AI

Artificial Intelligence (AI), while transformative for development and governance, can become a potent threat if exploited by terrorist organisations. The convergence of **terrorism and emerging technologies** has the potential to fundamentally alter the nature of violence, internal security and societal stability.

Issues Society May Face if Terror Outfits Gain Advantage of AI

1. **Enhanced Lethality and Precision of Attacks-** AI-enabled **autonomous drones**, facial recognition and target-tracking can allow terrorists to conduct **high-precision attacks** with minimal manpower.
2. **Disinformation and Psychological Warfare-** Use of **deepfakes, synthetic audio and AI-generated propaganda** to: Incite communal violence, Spread panic during crises, Undermine trust in state institutions and democratic processes

3. **Cyber Terrorism and Infrastructure Sabotage-** AI can help terrorists identify vulnerabilities in: Power grids, Banking systems, Transport and health infrastructure
4. **Radicalisation and Recruitment-** AI-driven algorithms can: Micro-target vulnerable individuals online, Personalise extremist narratives across social media platforms. Makes **online radicalisation faster and harder to detect**.
5. **Financing and Operational Secrecy-** AI-assisted money laundering, crypto-tracking evasion and encrypted communications increase **financial opacity**.
    - Automated bots can manage logistics, recruitment and propaganda at scale.
6. **Erosion of Social Trust-** Difficulty in distinguishing real from fake content leads to: Mistrust among communities, Reduced credibility of media and governance institutions, Social polarisation.

Key Challenges in Addressing AI-Enabled Terrorism

1. **Rapid Pace of Technological Change-** Law enforcement and legal frameworks lag behind **fast-evolving AI capabilities**.
2. **Dual-Use Nature of AI-** Same tools used for development (facial recognition, generative AI) can be misused, making **regulation complex**.
3. **Jurisdictional and Cross-Border Issues-** Terror groups operate across borders while **AI platforms and servers are globally distributed**.
4. **Attribution Problem-** AI-driven attacks make it harder to: Identify perpetrators, Establish legal responsibility, Prove intent.
5. **Capacity and Skill Deficit-** Security agencies often lack **AI expertise, infrastructure and trained manpower**.

Way Forward

1. **Strengthening Legal and Regulatory Frameworks-** Enact **AI-specific security regulations** addressing misuse, accountability and liability.
2. Update anti-terror laws to include **digital and AI-enabled crimes**.
3. **Technological Counter-Measures-** Develop **AI for counter-terrorism-** AI-based threat detection, Deepfake identification tools, Predictive analytics for radicalisation patterns.
4. **International Cooperation-** Global norms on **responsible AI use** under platforms like- UN, G20, FATF (for terror financing).
5. **Capacity Building of Security Agencies-** Invest in: AI training for police and intelligence agencies, Dedicated cyber-terror and AI cells, Public-private partnerships with tech firms.
6. **Platform Accountability and Ethics-** Social media and AI developers must: Deploy robust content moderation, Share threat data with governments, follow **"security by design" principles.**
7. **Societal Awareness and Resilience-** Promote **digital literacy** to identify misinformation and deepfakes.
8. Strengthen community-based counter-radicalisation programmes.

AI can act as a **force multiplier for terrorism**, posing multidimensional threats to society, governance and national security. Addressing this challenge requires a **balanced approach**—leveraging AI's benefits while instituting strong safeguards through law, technology, international cooperation and societal vigilance.

1.37 Why Free Speech is essential?

Freedom of speech and expression, guaranteed under **Article 19(1)(a)** of the Indian Constitution, is the **cornerstone of democracy**. It enables citizens to participate meaningfully in governance, hold authorities accountable, and ensure the free flow of ideas essential for social progress.

Importance of Free speech in a democracy

1. **Foundation of Democratic Participation-** Enables informed public debate, dissent and **electoral choice**.
2. **Accountability and Transparency-** Acts as a **check on misuse of power** through media, civil society and whistle-blowers. Facilitates exposure of corruption and maladministration.
3. **Marketplace of Ideas-** Competing ideas allow truth to emerge (John Stuart Mill). Encourages innovation, reform and social change.
4. **Protection of Minority and Dissenting Voices-** Prevents **majoritarian tyranny** by safeguarding unpopular opinions. Essential for pluralistic societies like India.
5. **Individual Autonomy and Dignity-** Integral to **personal liberty** and self-expression (Article 21 linkage).

Due Restrictions on Freedom of Speech

Under **Article 19(2)**, reasonable restrictions can be imposed in the interest of:

- **Sovereignty and integrity of India**
- **Security of the State**
- **Friendly relations with foreign States**
- **Public order**
- **Decency or morality**
- **Contempt of court**
- **Defamation**
- **Incitement to an offence**

How Judiciary and Administration Sometimes Obstruct Free Speech

Judicial Constraints

- **Broad interpretation of contempt of court** may discourage legitimate criticism.
- Judicial delays can lead to **"process as punishment"** in speech-related cases.
- Injunctions or gag orders in sensitive cases may curb public debate.

Administrative Overreach

- Misuse of **colonial-era laws** (sedition – now read narrowly, UAPA, IT Act provisions).
- Internet shutdowns and prior restraints on protests.
- Arbitrary arrests for social media posts.

Selective Enforcement

- Disproportionate action against critics while overlooking similar violations by others.
- Chilling effect on journalists, activists and artists.

Balancing Free Speech and Restrictions

1. **Narrow and Precise Laws-** Review and repeal **vague and overbroad provisions** affecting speech.
2. Codify clear definitions of hate speech and incitement.

3. **Judicial Self-Restraint-** Apply **doctrine of proportionality** consistently.
4. **Administrative Sensitisation-** Train police and administrators on constitutional limits of speech regulation.
5. **Strengthening Institutional Safeguards-** Independent media regulators instead of executive control.
6. Fast-track courts for speech-related cases.
7. **Digital Governance Framework-** Transparent content moderation norms.
8. **Promoting Civic Responsibility-** Encourage ethical speech, fact-checking and media literacy.
9. Counter misinformation through **counter-speech**, not coercion.

Freedom of speech is not absolute but its restriction must remain **the exception, not the norm**. A democratic society thrives when **dissent is protected**, not punished, and when restrictions are applied **sparingly, fairly and constitutionally**. Achieving this balance is essential to preserve both **liberty and order** in India's democracy.

1.38 National Supercomputing Mission

The **National Supercomputing Mission (NSM)** is a flagship initiative of the Government of India aimed at **enhancing indigenous supercomputing capability** and making high-performance computing (HPC) accessible to researchers, academia, industry and government. It is a key pillar of India's quest for **technological self-reliance and data-driven governance**.

Overview of the Mission

- **Launched in:** 2015
- **Implemented by: Ministry of Electronics & Information Technology (MeitY)& Department of Science & Technology (DST)**
  - **Implementing agencies: C-DAC** (Centre for Development of Advanced Computing), **IISc, Bengaluru**
- **Objective:** To install a **national network of supercomputers** with progressively higher indigenous content.

Key Components

1. **Deployment of Supercomputers**
   - Installation across **IITs, IISERs, central universities and national labs**.
   - Focus on domains such as climate modelling, genomics, material science and AI.
2. **Indigenous Technology Development**
   - Development of **Indian HPC software stack** and system integration capability.
   - Progress towards indigenous processors (e.g., PARAM series).
3. **National Knowledge Network (NKN) Integration**
   - Interconnecting supercomputers for **shared access and collaboration**.
4. **Human Resource Development**
   - Training scientists, engineers and students in **HPC and computational science**.

How NSM Helps the Nation

1. **Scientific Research & Innovation-** Enables advanced simulations in: Weather and climate forecasting, Space research and astrophysics, Drug discovery and genomics
2. Reduces dependence on foreign computing infrastructure.
3. **Strategic and National Security-** Supports defence R&D, cr yptography, nuclear simulations and aerospace design.
4. Enhances **strategic autonomy** in sensitive domains.
5. **Digital Governance and Public Services-** Improves disaster prediction (cyclones, floods).
6. Data-driven policymaking in health, agriculture and urban planning.
7. **Economic Growth & Industry Support-** Boosts innovation in: Semiconductors, Automotive and aerospace design, AI and data analytics
8. Strengthens India's **knowledge economy**.
9. **Capacity Building-** Creates a skilled workforce in **high-end computing**, essential for emerging technologies like AI and quantum computing.

Challenges in Implementation

1. High Capital and Operational Costs- Supercomputers require significant investment in Hardware, Cooling, Power infrastructure

2. Limited Indigenous Hardware- Continued reliance on imported processors and components.

3. Skilled Manpower Shortage- Insufficient number of trained HPC professionals and computational scientists.

4. Uneven Utilisation- Under-utilisation in some academic institutions due to lack of awareness or expertise.

5. Rapid Technological Obsolescence- Fast pace of global advancements demands frequent upgrades.

Way Forward

1. Deepen Indigenisation- Accelerate development of **indigenous processors and interconnects**.

2. Slign NSM with **Semicon India Programme** and **PLI schemes**.

3. Strengthen Academia–Industry Collaboration

4. Focus on Energy-Efficient HPC- Invest in **green supercomputing** to reduce power and carbon footprint.

5. Expand Skill Development- Integrate HPC training in higher education curricula.

6. Integrate with Emerging Tech Missions- Convergence with: **National AI Mission**, **Quantum Computing Mission**, **Digital Public Infrastructure (DPI)** initiatives

The National Supercomputing Mission is a **strategic enabler** for India's scientific, economic and security ambitions. While challenges remain in cost, capacity and indigenisation, a focused push on **self-reliance, skills and integration with emerging technologies** can transform NSM into the backbone of India's future digital and innovation ecosystem.

1.39 India Oman Relations

India–Oman relations are among **India's oldest overseas linkages**, rooted in geography, trade, and people-to-people contacts.

Evolution of relation with Oman

1. **Ancient & Medieval Period- Maritime trade** between the **Indus Valley / western Indian coast** and Oman dates back to **3000 BCE**. Oman acted as a crucial node in **Indian Ocean trade**, linking India with Arabia, East Africa and the Mediterranean.

2. **Colonial Period-** Omani ports, especially **Muscat**, remained closely linked with Indian ports like **Surat, Kutch and Bombay**.
   - The **Omani Rupee** circulated in Oman until 1970, highlighting deep economic interdependence.

3. **Post-Independence Era-** India was among the **first countries to establish diplomatic relations with Oman (1955)**. Relations strengthened after **Sultan Qaboos' ascension in 1970**, marking Oman's modernization phase.
   - Since the 1990s, ties expanded to **energy, defence, trade and diaspora welfare**.

4. **Contemporary Phase-** Elevation to a **Strategic Partnership**. Regular **high-level visits**, defence cooperation agreements, and growing economic engagement.
   - Oman viewed as a **gateway for India to the Gulf and Africa**.

Points of Convergence

1. **Strategic & Security Cooperation-** Oman provides **strategic access to Duqm Port**, enhancing India's **Indian Ocean presence**.
2. Joint military exercises: **Naseem Al Bahr** (Naval), **Al Najah** (Army).
3. Shared interest in **maritime security, counter-piracy and freedom of navigation**.
4. **Energy Security-** Oman is a **reliable supplier of crude oil and LNG** to India.
   - Cooperation in **oil storage**, petrochemicals and renewable energy.
5. **Economic & Trade Relations-** Bilateral trade includes **petroleum products, fertilizers, textiles, machinery**.
   - Oman supports Indian investment in **IT, healthcare, manufacturing and logistics**.
6. **Indian Diaspora-** Over **700,000 Indians** live in Oman.
7. **Regional Stability-** Oman's **independent and neutral foreign policy** aligns with India's strategic autonomy.
8. Convergence on peaceful resolution of conflicts in **West Asia**.

Points of Friction / Challenges

1. **Trade Imbalance & Limited Diversification-** Trade heavily dominated by **energy imports**, limiting value-added engagement.
2. **Competition in the Gulf-** India faces stiff competition from **China, the US and EU** in

infrastructure, ports and technology.
3. China's Belt and Road Initiative (BRI) presence in the region challenges India's influence.
4. **Labour Market Constraints- Omanisation policy** prioritizes employment for Omani nationals, affecting Indian workers.
5. **Regional Geopolitical Volatility-** Tensions in the **Gulf, Red Sea, and Iran region** can affect shipping, energy security and diaspora safety.

Way Forward

1. **Deepen Strategic Partnership-** Expand defence cooperation to **joint training, maritime domain awareness and logistics sharing**.
2. Institutionalize dialogue on **Indian Ocean security**.
3. **Economic Diversification-** Promote Indian investment in **renewables, green hydrogen, fintech, pharmaceuticals and food processing**.
4. Utilize Oman as a **logistics hub** linking India with **Africa and Europe**.
5. **Energy Transition Cooperation-** Move beyond fossil fuels to **clean energy collaboration**, especially solar and green hydrogen.
6. **Diaspora-Centric Approach-** Strengthen mechanisms for **skill upgradation**, social security and legal protection of Indian workers.
7. Encourage **knowledge-based migration** aligned with Oman Vision 2040.
8. **Multilateral & Regional Engagement-** Coordinate positions in **IORA, UN, and regional maritime forums**.

India–Oman relations are anchored in **civilizational links, strategic trust and maritime geography**. While challenges persist in trade diversification and regional geopolitics, the relationship enjoys strong fundamentals. By leveraging Oman's strategic location and India's economic and technological strengths, both countries can transform their partnership into a **pillar of stability and prosperity in the Indian Ocean region**.

1.40 Food Safety Concerns of India

Context: The Food Safety and Standards Authority of India (FSSAI) has launched a nationwide egg safety drive after a viral video alleged the presence of nitrofurans—a banned antibiotic—in eggs of a popular brand.

Food safety refers to the **handling, preparation and storage of food** in ways that prevent contamination and ensure it is safe for consumption. In India, rapid urbanisation, changing food habits, globalised supply chains and climate stress have intensified **food safety concerns**, making it a critical public health and governance issue.

Growing Food Safety Concerns in India

1. **Chemical Contamination- Pesticide residues** beyond permissible limits in fruits and vegetables, **Antibiotic residues** in milk, poultry and meat, **heavy metals** (lead, arsenic, mercury) detected in rice, spices and fish.

- **Recent example-** Reports of **antibiotic overuse in poultry feed** contaminating meat and eggs.

2. **Food Adulteration-** Mixing of **synthetic colours, industrial dyes, non-edible oils and fillers** in food items. Artificial ripening of fruits using **calcium carbide or banned chemicals**.
    - **Recent example-** Adulteration in **spices, edible oils and milk** highlighted during state food safety drives.
3. **Microbial & Biological Hazards-** Foodborne diseases due to **bacteria (Salmonella, E. coli), viruses and fungi**.
    - **Recent examples-** Seasonal outbreaks of **food poisoning** linked to contaminated cooked food.
4. **Unsafe Processed & Ultra-Processed Foods-** Rising consumption of **high salt, sugar and trans-fat foods**.
5. Inadequate labelling and misleading health claims.
6. **Climate Change–Induced Food Risks-** Rising temperatures increase **fungal toxins (aflatoxins)** in grains and nuts.

Challenges Faced by India

1. **Weak Enforcement Capacity-** Shortage of **food safety officers, inspectors and laboratories**.
2. Del ays in testing and prosecution reduce deterrence.
3. **Dominance of Informal Food Sector-**Large unorganised sector including **street vendors, small eateries and local markets**.
4. **Fragmented Supply Chains-** Long, multi-layered supply chains make **source identification and recalls difficult**.
5. **Low Consumer Awareness-** Limited awareness about **food labels, expiry dates and complaint mechanisms**.
6. Acceptance of unsafe practices due to affordability concerns.
7. **Regulatory & Federal Challenges-** Uneven implementation of the **Food Safety and Standards Act (FSSA), 2006)** across states.
8. Limited coordination between Centre, States and local bodies.

Remedies / Way Forward

1. **Strengthening Food Safety Governance-** Enhance implementation of **FSSA, 2006** with stricter penalties and faster adjudication.
2. **Infrastructure & Capacity Building-** Expand **NABL-accredited labs, mobile food testing vans**, and trained personnel.
3. **Technology & Traceability-** Adoption of **digital traceability, QR codes, blockchain and AI-based surveillance**.
4. **Formalisation of Informal Sector-** Licensing, training and hygiene certification for **street food vendors and MSMEs**.
5. **Consumer Awareness & Behavioural Change-** Mass campaigns on **safe food practices, labels and reporting mechanisms**.
6. **Climate-Resilient Food Systems-** Promote **safe pesticide use, climate-smart agriculture**

and resilient storage systems.

7. Early warning systems for contamination risks.

Food safety concerns in India reflect the intersection of **public health, economic inequality, governance capacity and environmental stress**. Addressing them requires a **whole-of-government and whole-of-society approach**, combining regulation, technology, awareness and ethical practices. Ensuring safe food is central to **human capital development, nutritional security and sustainable growth**.

1.41 Evaluating FTAs

Free Trade Agreements (FTAs) are **bilateral or regional treaties** between countries to **reduce/eliminate tariffs and other barriers** on specified goods and services, and to provide preferential market access through mutually agreed rules (tariff schedules, rules of origin, sanitary & phytosanitary and technical measures, dispute-settlement, etc.). FTAs aim to liberalise trade while protecting policy space for governments.

How FTAs can improve trade relations

1. **Market access & tariff reduction:** Lower tariffs increase competitiveness of exports and expand market reach.
2. **Certainty & rules:** FTAs provide predictable rules (Rule of Origin) that lower trade costs and encourage investment.
3. **Integration of value-chains:** Preferential access encourages firms to integrate into regional/global value chains.
4. **Services & investment links:** Modern FTAs often include services, investment and mobility provisions that deepen economic ties beyond goods.
5. **Political & strategic cooperation:** FTAs consolidate strategic partnerships and institutionalised consultations on trade issues.

India's FTA footprint

- **Number of FTAs:** India has signed **around 13 active FTAs/PTAs** and several ongoing negotiations (EU, US, Australia CECA, etc.).
- **Trade performance concern:** India's **trade deficit with FTA partners widened** in the decade after signing some FTAs (one estimate: from **~US$54 billion in 2013–14 to ~US$105 billion in 2018–19**).
- **Utilisation indicators:** Use of FTAs is rising in some pacts (example: **77,234 certificates of origin issued under the Australia FTA in 2024–25** vs 64,864 in 2023–24 — a 19% rise), showing growing but uneven uptake.

Why India has not reaped the full potential of its FTAs? — key reasons

1. **Asymmetric trade outcomes / import surge:** After some FTAs, **imports from partners rose faster than India's exports**, worsening trade balances.
2. **Low utilisation due to rules of origin (RoO) complexity & compliance costs:** Many

exporters find the administrative burden (documentation, certification, proving origin) **costlier than the tariff benefits**, especially for small and medium enterprises.

3. **Non-tariff barriers (NTBs) & regulatory divergence:** Even with tariff cuts, **SPS, technical standards, licensing and customs procedures** limit market access.
4. **Narrow product coverage & services gap:** Several FTAs have limited coverage for key Indian strengths (e.g., services, digital trade, some manufactures).
5. **Inadequate stakeholder consultation and strategic alignment:** Negotiations have at times suffered from poor industry consultation and mismatched objectives — negotiators may prioritize tariff lines without mapping domestic competitiveness.
6. **Infrastructure, supply-side constraints and standards readiness:** Indian firms often lack scale, quality standards, testing & certification infrastructure to meet partner market requirements.
7. **Weak trade facilitation & awareness at exporter level:** Low awareness about FTAs, their rules and digital tools among MSMEs and exporters results in under-utilisation despite potential gains.

Way forwards

A. Improve design & negotiation

1. **Targeted, strategic FTAs:** Prioritise agreements that complement India's comparative advantages (services, pharmaceuticals, chemicals, engineering, IT).
2. **Pre-negotiation impact assessment & stakeholder mapping:** Mandate ex-ante sectoral impact analyses and formal consultations with industry.

B. Raise utilisation & reduce transaction costs

3. Simplify Rules of Origin & automate compliance.
4. Capacity building for exporters.

C. Tackle non-tariff barriers & standards- Mutual recognition agreements (MRAs) & regulatory cooperation.

D. Strengthen supply side & institutional support

6. **Improve supply-chain competitiveness:** Invest in logistics, cold-chain etc.
7. **Export promotion aligned with FTAs.**

E. Monitoring, review & safeguard

8. **Dynamic monitoring mechanism:** Periodic review of FTA outcomes.
9. **Dispute settlement & quick remedy cells.**

FTAs can be powerful instruments to deepen trade ties, attract investment and integrate India into global value chains — **but benefits are neither automatic nor uniform**. India's challenge has been managerial and structural: designing FTAs strategically, reducing administrative frictions, bolstering supply-side readiness, and ensuring adequate stakeholder engagement. Correctly targeted reforms — simpler RoO, digital facilitation, exporter capacity building and ongoing monitoring — can substantially increase FTA utilisation and convert preferential access into sustained export gains for India.

1.42 Eradication of Naxalism

Naxalism, or Left Wing Extremism (LWE) in India, is a Maoist-inspired armed insurgency by groups seeking to overthrow the Indian state through armed rebellion, fueled by socio-economic

inequality, particularly affecting tribal and underdeveloped regions. Originating from the 1967 Naxalbari uprising in West Bengal.

Reduction of Naxalism in India — Key Statistics

- The number of *most affected Left-Wing Extremism (LWE)-affected districts* has fallen from **12 to just 6** in recent years.
- Naxal-related violence has reduced by *about 81%* since 2010, from roughly **1,936 incidents in 2010 to about 374 in 2024**.
- Combined *security personnel and civilian fatalities* are down *85%* (from ~1,005 in 2010 to ~150 in 2024), indicating reduced intensity of conflict.

Approach of Government Against Naxalism

India's comprehensive strategy combines **security operations, development, governance and rehabilitation**:

1. **Security & Enforcement**
    a. **Fortified infrastructure:** Over *570 fortified police stations.*
    b. **Enhanced mobility & technology:** Use of *helicopter landing pads, drone surveillance, satellite imagery, intelligence analytics.*
    c. Targeted operations: High-impact operations (e.g., in Chhattisgarh's Abujmarh).
2. **Development & Governance**
    a. Road connectivity: Over *14,000 km of roads* in LWE areas.
    b. Education expansion: 216 *Eklavya Model Residential Schools* in tribal areas.
    c. Aspirational District Programme.
3. **Rehabilitation and Reintegration**
    a. Encouraging surrenders: Rehabilitation programmes include legal aid, healthcare, education, and employment support to former insurgents.
4. **Policy & Coordination**
    a. Unified strategy: Operation *Kagar* and other coordinated plans integrate central and state efforts to clear insurgent strongholds and hold gains.
    b. Administrative decisions — e.g., *review of criminal cases against surrenderees* — improve trust and formal reintegration.

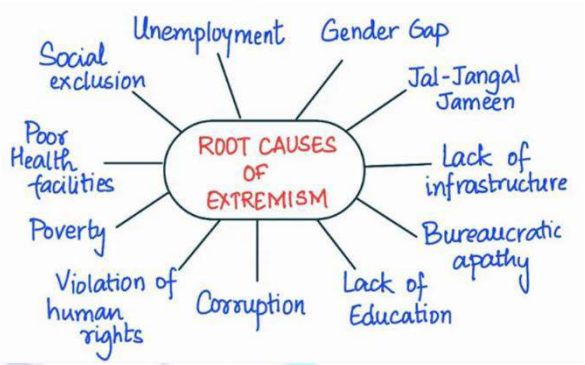
Strategic target: The Government has set a national goal to make India *Naxal-free by 31 March 2026* through intensified operations and development.

Schemes & Policy Instruments to Eradicate Naxalism

1. **Security Related Expenditure (SRE) Scheme:** Central assistance to states for police & CAPF deployment in LWE areas.
2. **Special Central Assistance (SCA):** Development funds for most affected districts to improve infrastructure and services.
3. **Pradhan Mantri Gram Sadak Yojana (PMGSY):** Roads in LWE areas reduce isolation and spur economic activity.
4. **Eklavya Model Residential Schools (EMRS):** Quality education for tribal youth, key to breaking cycles of insurgent recruitment.
5. **Aspirational District Programme:** Boosts healthcare, education, livelihoods, governance in previously excluded districts.
6. Surrender and rehabilitation packages that offer **education, vocational training, job placements and legal support** to former insurgents.

New Dimensions of Naxalism in Today's India

1. Even as violence declines, new challenges emerge:
2. **Fragmented Ideology-** Memory of unequal development still resonates; some Naxal outfits shift to *subtle economic or extortion networks* rather than overt violence.
3. **Criminal Hybridisation-** Links with other criminal networks (smuggling, illicit mining) blur pure ideological motivations.
4. **Socio-economic roots remain-** Persistent **poverty, land rights issues, exploitation** — if unaddressed — can revive local grievance narratives.
5. **Adaptation to surveillance-** Declining manpower has pushed cadres to reconfigure logistics and local support networks — harder to track in dense forests.



Remedies & Policy Implications

1. **Strengthen Persistent Security Presence-** Expand real-time intelligence sharing & tech adoption (drones, AI analytics) to preempt resurgence.
2. Continue fortified outposts as *civic-security hubs* combining services with law enforcement.
3. **Deepen Development Integration-** Boost employment and market access in tribal regions; integrate digital connectivity, skill programmes and microfinance initiatives.
4. Fast-track land rights and resource entitlements to reduce alienation.
5. **Education & Youth Engagement-** Expand quality education and livelihood training tied to local economic opportunities to undercut insurgent recruitment.
6. **Community Participation-** Empower Gram Sabhas and local governance to lead development planning — reduce dependency on insurgent patronage.
7. **Rehabilitation & Social Reintegration-** Expand attractive surrender packages, including financial incentives, counselling, and community acceptance programmes.
8. **Legal & Judicial Support-** Fast-track review of cases against surrendered insurgents to build trust and reduce judicial delay.

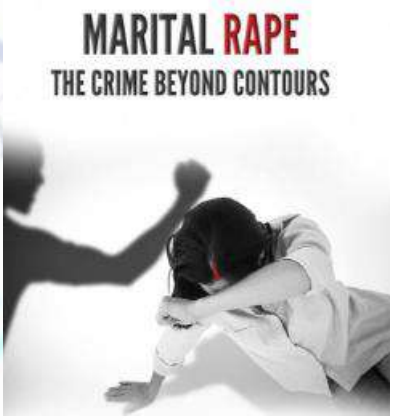
India's fight against Naxalism over the last decade demonstrates that **security operations alone are insufficient**; only a **holistic strategy combining force, development and reintegration** can bring peace. The significant reduction in violence, affected districts and fatalities highlights the effectiveness of this *multi-pronged approach*, while ongoing challenges underscore the need for *structural socio-economic reforms*. A sustained focus on **education, infrastructure, community empowerment and technology-aided governance** remains central to achieving a *Naxal-free India by 2026*.

1.43 Marital Rape

Marital rape refers to **non-consensual sexual intercourse by a husband with his wife**. While rape is criminalised under Indian law, **marital rape remains an exception**, raising serious concerns regarding **women's bodily autonomy, dignity, and constitutional rights**.

Issues Associated with Marital Rape

1. **Violation of Fundamental Rights**
   - Infringes **Article 21** (Right to life, dignity, bodily integrity).
   - Discriminates against married women, violating **Article 14** (Right to equality).
2. **Perpetuation of Patriarchy**
   - Reinforces the notion that marriage implies **irrevocable sexual consent**.
   - Treats women as subordinate within marriage.
3. **Physical and Mental Trauma**
   - Leads to **sexual violence, unwanted pregnancies, STDs**, and long-term psychological harm.
   - Often accompanied by domestic violence.
4. **Lack of Legal Remedy**
   - Married women cannot seek justice under rape laws.
   - Civil remedies (DV Act) are **inadequate for addressing sexual assault**.
5. **Under-reporting**
   - Due to social stigma, economic dependence, and fear of family breakdown.



What Do Indian Laws Say?

Indian Penal Code (IPC)

- **Section 375 (Exception 2)**:

Sexual intercourse by a man with his own wife, **wife not being under 18 years of age**, is not rape.

- Thus, **marital rape is not a criminal offence**.

Protection of Women from Domestic Violence Act, 2005

- Recognises **sexual abuse** within marriage.
- Provides **civil remedies** (protection orders, maintenance), **not criminal punishment**.

Judicial Developments

- **Independent Thought v. Union of India (2017)**:
  - Raised age of consent for married girls to **18 years**, partially diluting the exception.
- Ongoing constitutional challenges argue marital rape exception is **arbitrary and unconstitutional**.

Arguments FOR Criminalisation of Marital Rape	Arguments AGAINST Criminalisation of Marital Rape
Consent & Sexual Autonomy • **Marriage does not imply perpetual consent.** • **Consistent with right to privacy and bodily autonomy (*Puttaswamy judgment*).**	**Misuse of Law** • Fear of false or exaggerated cases. • Parallels drawn with alleged misuse of Section 498A IPC.

Equality Before Law **• Differential treatment of married and unmarried women is unjustified.** **• Violates Article 14 and India's obligations under CEDAW.**	**Impact on Institution of Marriage** • Criminal law intrusion may destabilise family structure. • Marriage viewed as a private domain.
Global Best Practices **• Criminalised in UK, USA, Canada, South Africa, etc.** **• India lags behind international human rights standards.**	**Evidentiary Challenges** • Difficulty in proving absence of consent within marriage. • Risk of increased litigation with low conviction rates.
Deterrence Against Sexual Violence **• Recognises seriousness of domestic sexual abuse.** **• Sends a strong normative message against gender-based violence.**	**Alternative Remedies Exist** • Protection of Women from Domestic Violence Act, 2005 recognises sexual abuse and provides civil relief.

Way Forward

1. **Remove Marital Rape Exception-** Amend **Section 375 IPC** to recognise consent-based sexual relations, irrespective of marital status.
2. **Safeguards Against Misuse-** Mandatory **preliminary inquiry**, gender-neutral investigation, judicial oversight.
3. **Strengthen Support Systems-** Counseling, shelter homes, legal aid, trauma care.
4. **Gradual & Nuanced Reform-** Consider graded punishment or contextual sentencing.
5. Sensitisation of police and judiciary.
6. **Societal Awareness-** Public discourse on **consent, gender equality, and marital rights**.
7. Educational reforms to challenge patriarchal norms.

Marital rape is not merely a legal issue but a **constitutional and human rights concern**. While concerns of misuse and societal impact are valid, they **cannot override a woman's right to bodily autonomy and dignity**. A balanced approach—criminalisation with safeguards—can uphold justice without undermining social stability.

1.44 Viksit Bharat-Guarantee for Rozgar and Ajeevika Mission (Gramin) Bill

The **Viksit Bharat-Guarantee for Rozgar and Ajeevika Mission (Gramin) Bill, 2025** (VB-G RAM G) was passed by Parliament to **overhaul the long-standing Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)**, a flagship rights-based rural employment law. The new statute aims to **restructure rural livelihood security** under India's broader development vision, **Viksit Bharat @2047**.

How the VB-G RAM G Bill Aims to Strengthen/Revamp MGNREGA

Key Changes in the New Bill	Intended Strengthening Impact
Increase in guaranteed days to 125 days of wage employment per rural household (from 100 under MGNREGA).	Enhances **income security** for rural households.
Shift from open-ended funding to normative state allocations with 60:40 Centre–State share (90:10 for	Encourages **efficiency and accountability** in expenditure.

Northeast/Himalayan states).	
Plan-based work (VGPPs) prepared by Gram Panchayats, aligning works with local infrastructure and climate goals.	Promotes **meaningful work** and creation of **durable rural assets**.
Seasonal pause provision (up to 60 days during peak agricultural seasons).	Aims to **reduce labour conflicts** between MGNREGA work and farm labour demand.
Unemployment allowance clause if work is not provided within stipulated time.	Retains a form of **wage protection** for denied workers.
Use of technology (biometric payments, geo-spatial tools, real-time tracking).	Improves **transparency and reduces leakage**.

Overall, the government presents the Bill as a **modernised and result-oriented rural employment framework**, moving beyond the earlier criticisms of MGNREGA's operational inefficiencies and leakages.

Issues and Loopholes

1. **Weakening the Legal Guarantee-** MGNREGA's **rights-based, demand-driven employment guarantee** has been replaced with a **supply-driven, budget-capped scheme**.
    - Under the new model, **workdays could be limited** by state allocations, potentially curbing actual employment availability.
2. **Centralised Control with Fiscal Caps- Normative allocations** determined by the Centre may act as **de facto caps** on workdays, especially in high-demand years.
3. Any additional expenditure beyond provisions must be met by states, **increasing fiscal pressure on poorer states**.
4. **Seasonal Suspension Risks-** Allowing up to **60 days of suspension** during agricultural seasons might reduce income.
5. **Implementation & Consultation Concerns-** Opposition parties decried the **lack of stakeholder consultations** (workers, states, civil society) prior to introduction.
6. **Disproportionate State Burden-** Requirement for states to bear a significant share of funding and full cost of unemployment allowance could **strain already stretched state finances**.

Way Forward

1. **Preserve Rights-Based Entitlement-** Reintroduce a **demand-driven element** or statutory obligation on the Centre to ensure employment up to 125 days **irrespective of budget caps**.
2. **Balanced Funding Mechanism-** Provide **automatic central stabilisation funds** for low-income and drought-prone states to prevent regional disparities.
3. **Strengthen Planning & Local Participation-** Invest in **capacity building of Panchayats** for effective VGPP preparation.
4. Ensure **social audits and community monitoring** to link work with genuine asset creation.
5. **Safeguard Seasonal Income- I**nstead of a hard pause, adopt **flexible scheduling** that balances agriculture demands with livelihood needs, especially in distress periods.
6. **Inclusive Dialogue-** Constitute a **Parliamentary Standing Committee/consultative forums** including labour unions, states, economists, and development experts to refine implementation rules.

7. **Protect Worker Rights-** Guarantee timely and weekly **wage payments**, robust **unemployment allowance enforcement**, and grievance redressal mechanisms at village and district levels.

The **VB-G RAM G Bill** represents a significant attempt to reform rural employment policy. While it offers potential benefits such as increased workdays, focused asset creation, and technological enhancements, there are **legitimate concerns** around dilution of legal guarantees, fiscal constraints on states, and potential exclusion risks. A balanced approach with **institutional safeguards, stronger funding support, and participatory planning** can help ensure that the legislation delivers on both **employment security and sustainable rural development**.

PYQ
Among the following who are eligible to benefit from the "Mahatma Gandhi National Rural Employment Guarantee Act"? (2011)
(a) Adult members of only the scheduled caste and scheduled tribe households
(b) Adult members of below poverty line (BPL) households
(c) Adult members of households of all backward communities
(d) Adult members of any household
Ans: (d)

1.45 Central Information Commission (CIC)

Context: The President appointed Raj Kumar Goyal as Chief Information Commissioner and 8 new Information Commissioners, thereby fully constituting the Central Information Commission (CIC) for the first time in 9 years.

The **Central Information Commission (CIC)** is a statutory body established under the **Right to Information Act, 2005** to **protect, promote, and enforce citizens' right to information**. It plays a pivotal role in enhancing **transparency, accountability, and good governance** in public administration.

Functions of the Central Information Commission

1. **Adjudication of RTI Appeals-** Hears **second appeals** against decisions of Central Public Information Officers (CPIOs).
2. Decides cases where information has been **denied, delayed, or inadequately provided**.
3. **Complaint Redressal-** Enquires into complaints regarding: Refusal to accept RTI applications, Non-appointment of PIOs, Unreasonable fees or procedural violations.
4. **Enforcement Powers-** Can **direct public authorities** to provide information.
5. Has powers similar to a **civil court** for summoning documents and witnesses.
6. **Imposition of Penalties-** Can impose a penalty of **₹250 per day (up to ₹25,000)** on erring officials.
7. **Advisory Role-** Advises government on: **RTI implementation**, record management.
8. **Monitoring & Reporting-** Submits **annual reports** to the Central Government, laid before Parliament.

Selection Committee

Member	Position
Prime Minister	Chairperson
Leader of Opposition in Lok Sabha	Member
Union Cabinet Minister (nominated by PM)	Member

Terms and Service Condition

Aspect	Provision
Tenure	Determined by the **Central Government** (no fixed 5-year term)
Salary & Allowances	Prescribed by the **Central Government**
Reappointment	Not explicitly barred, subject to government rules
Pension	Adjusted against previous government pension, if any
Removal	By President on grounds of misbehaviour/incapacity (after SC inquiry)
Oath	Taken before the President or a person appointed by him/her.

Issues Faced by the CIC

1. **Backlog-** Persistent vacancies in the post of **Chief Information Commissioner and Information Commissioners l**eads to **huge pendency of appeals**, delaying justice.
2. **Dilution of Independence- RTI Amendment Act, 2019** empowered the Central Government to determine tenure and service conditions.
3. **Weak Enforcement-** Penalties are **rarely imposed**.
    - Orders sometimes not complied with by public authorities.
4. **Lack of Awareness & Capacity-** Poor awareness among citizens and officials.
    - Inadequate training of PIOs results in routine denials.
5. **Digital & Infrastructure Constraint-** Limited use of technology for **e-hearings** and case management.
    - Poor record management in many departments.
6. **Exemptions & Misuse**

Remedies / Way Forward

1. **Timely Appointments-** Fill vacancies through a **transparent and time-bound selection process**.
2. **Strengthen Independence-** Provide **statutory safeguards** for tenure and service conditions.
3. Reduce executive dominance in appointments.
4. **Improve Enforcement-** Mandatory compliance tracking of CIC orders.
5. **Capacity Building-** Regular **training of PIOs** on RTI law and record management.
6. **Leverage Technology-** End-to-end **digital RTI ecosystem** (online filing, virtual hearings).
7. **Promote Proactive Disclosure**Strict enforcement of **Section 4 disclosures** to reduce RTI burden.

The Central Information Commission is a **cornerstone of India's transparency framework**. However, delays, vacancies, and perceived dilution of autonomy undermine its effectiveness. Strengthening its **independence, capacity, and enforcement powers** is essential to realise the true spirit of the RTI Act and deepen democratic accountability.

1.46 Insurance Sector Reforms

The *Sabka Bima, Sabki Raksha (Amendment of Insurance Laws) Bill, 2025* has been passed by the Indian Parliament to **modernise the regulatory framework of the insurance sector** by amending key legislations including the *Insurance Act, 1938*, the *Life Insurance Corporation (LIC) Act, 1956*, and the *Insurance Regulatory and Development Authority Act, 1999*. The legislation aims to deepen insurance penetration, attract investment, enhance consumer protection and strengthen India's insurance architecture.

Key Provisions of the Bill

1. **100% Foreign Direct Investment (FDI)-** The Bill **increases the FDI cap in Indian insurance companies from 74% to 100%**, allowing full foreign ownership subject to prescribed conditions.
2. **Liberalisation of Reinsurance-** For foreign reinsurers, the **Net Owned Fund (NOF) requirement is reduced** significantly from ₹5,000 crore to ₹1,000 crore, making India more attractive as a reinsurance destination.
3. **Regulatory Strengthening-** The Insurance Regulatory and Development Authority of India (**IRDAI**) is endowed with **enhanced powers**, including stricter enforcement authority, investigation powers, and the ability to **recover wrongful gains.**
4. **Policyholder Protection & Education Fund-** A **Policyholders' Education and Protection Fund** will be established, administered by IRDAI, to promote insurance awareness and safeguard consumer interests.
5. **Simplification of Compliance-** The Bill **raises the threshold** for IRDAI approval on share transfer from 1% to 5% of paid-up capital, **removes minimum capital requirement** for cooperative insurers, and expands the definition of intermediaries.
6. **Increased Operational Freedom-** LIC gains greater operational autonomy, including the ability to open zonal offices without prior government approval and manage overseas operations more flexibly.

How the Bill Strengthens the Insurance Sector

1. **Capital Infusion & Global Integration-** By allowing **100% FDI**, the Bill opens the doors for more foreign capital.
2. **Competitive & Inclusive Market-** Increased competition from global players can lead to **better pricing, diversified product offerings**, and improvements in underwriting.
3. **Strengthened Regulation & Consumer Safeguards-** Enhanced regulatory powers for IRDAI improve **oversight over market practices**, help curb **mis-selling**, and strengthen **grievance redressal mechanisms**.
4. **Operational & Structural Efficiency-** Simplified compliance procedures, reduced capital barriers for co-operative insurers, and expanded definitions for intermediaries contribute to **ease of doing business**.

Loopholes and Criticisms

1. **Composite/Licence Integration Not Fully Addressed-** The Bill does not uniformly implement **composite licensing** that allows insurers to sell life, health, and general insurance under a single licence — a practice common in several advanced markets.

2. **Captive Insurance for Corporates-** It remains **silent on explicit provisions for captive insurance entities**, limiting sophisticated risk management options for large Indian corporates.
3. **Continuation of Some Regulatory Hurdles-** Although compliance procedures have been rationalised, certain **regulatory requirements and approval thresholds** may still be more rigid than necessary for fostering rapid innovation and market entry.
4. **Distribution and Last-mile Reach-** While opening up the market is expected to enhance reach, the Bill does not **mandate specific frameworks** for last-mile distribution in remote or informal sectors.

Way Forward

1. **Enable Full Composite Licensing-** Introduce a **comprehensive composite licence regime** enabling firms to offer life, health, and general products seamlessly, improving consumer convenience and operational synergy.
2. **Strengthen Last-Mile Distribution-** Leverage **Digital Public Infrastructure (DPI)** (India Stack, e-KYC, UPI) and partnerships with postal networks, CSCs, cooperatives.
3. **Promote Innovation & Risk-Based Products-** Encourage product innovation (parametric, usage-based, micro-insurance) and **risk management solutions** for emerging areas (cybersecurity, climate risks) to make insurance more relevant to modern needs.
4. **Data-Driven Supervision-** Deploy **RegTech and SupTech tools** for real-time monitoring, fraud detection, and predictive risk assessment to improve regulatory efficiency without stifling growth.
5. **Policyholder Education & Trust Building-** Strengthen policyholder education through sustained campaigns and transparent grievance redressal mechanisms to build credibility and participation.

1.47 Artificial Intelligence and the Job Market

Artificial Intelligence (AI) is rapidly transforming economies by automating tasks, augmenting human capabilities, and reshaping labour markets. While fears persist that AI will lead to large-scale job losses, history suggests that technological change often **redefines work rather than eliminates it**. For India—poised to reap its demographic dividend—AI presents both a challenge and an unprecedented opportunity.

Relevance of AI in the Job Market

1. **Productivity and Efficiency Gains-** AI enhances productivity by automating repetitive, data-intensive tasks in sectors such as manufacturing, finance, logistics, and healthcare.
    - It enables **faster decision-making**, predictive analytics, and optimisation of resources.
2. **Creation of New Job Roles-** Emergence of new occupations such as: AI/ML engineers,Data scientists, Prompt engineers, AI ethicists and auditors, Human-AI interaction designers

3. Demand for **hybrid skills** combining domain knowledge with AI literacy.
4. **Job Augmentation Rather than Replacement-** AI acts as a **force multiplier**: Doctors using AI diagnostics, Teachers using personalised learning tools, Farmers using AI-based advisories.
5. **Sectoral Transformation**
    - **Manufacturing**: Smart factories, predictive maintenance
    - **Services**: AI-driven customer support, fintech, legal tech
    - **Agriculture**: Precision farming, climate risk forecasting
    - **Governance**: AI for service delivery, grievance redressal, policy design

Apprehension of Job market regarding AI

1. **Short-Term Displacement vs Long-Term Gains-** AI can **displace routine, low-skill, repetitive jobs** (clerical work, basic data processing).
    - However, historical experience (Industrial Revolution, IT revolution) shows: Net job creation over time, Shift in nature of work, not disappearance
2. **Polarisation Risk-** Risk of: **Job polarisation** (high-skill vs low-skill), Wage inequality if reskilling does not keep pace.
    - The real threat is **not AI itself**, but **lack of preparedness**.
3. **Human Advantage Remains Central-** AI lacks: Emotional intelligence, Ethical judgement, Creativity and empathy.
    - Jobs involving **care, leadership, social interaction, creativity**, and complex decision-making are least vulnerable.
4. **Myth vs Reality**

    ✗ AI replaces all jobs → *Myth*

    ✓ AI replaces tasks, not entire occupations → *Reality*

What India Must Do to Reap AI Benefits Along with Demographic Dividend

1. **Massive Skilling and Reskilling Drive-** Shift from degree-centric to **skills-centric education**.
2. Focus on: AI literacy for all, Coding, data analytics, cloud computing, Soft skills (creativity, problem-solving, adaptability).
3. Expand initiatives like: **Skill India Mission**, **IndiaAI Mission**, Industry-academia partnerships.
4. **Education System Reform-** Integrate: Computational thinking**,** Ethics of AI, Interdisciplinary learning from school level.
5. **Promoting Job-Creating AI Use-Cases-** Encourage AI in: MSMEs and startups (job-rich sectors), Agriculture and rural economy, Healthcare and education.
6. Avoid over-automation in labour-abundant sectors without reskilling safeguards.
7. **Strengthening Digital Public Infrastructure (DPI)**
8. **Ethical, Inclusive and Responsible AI-** Adopt **human-centric AI governance**:
9. **Social Protection and Transition Support-** Strengthen: Unemployment support**,** Portable social security, Career transition assistance, Enable workers to move smoothly across sectors.

AI is not a job-eating monster but a **powerful general-purpose technology** that can either deepen inequality or drive inclusive growth—depending on policy choices. For India, the convergence of AI and its demographic dividend can become a **virtuous cycle** if investments are made in skills, education, ethical governance, and job-creating innovation. The future of work is not **human versus AI**, but **human plus AI**.

1.48 India's Fertiliser Subsidy Burden: Status, Challenges and Reforms Needed

Facts & Figures:

- **Magnitude of subsidy:** Fertiliser subsidy is one of India's **largest non-merit subsidies**.
  - **FY 2022-23:** ~₹2.25 lakh crore (peak due to global price shock after Russia-
  - **FY 2024-25 (BE):** ~₹1.64 lakh crore.
  - This accounts for **15–20% of total subsidies**.
- **Major components: Urea subsidy:** ~70% of total fertiliser subsidy which encourages **excessive urea use** → N:P:K ratio distorted to **~7:2.8:1** (ideal: **4:2:1**).

Why India Needs to Rationalise Fertiliser Subsidy

a) Fiscal sustainability

- High subsidy crowds out spending on **health, education, irrigation & R&D**.
- Makes fiscal consolidation difficult.

b) Correct nutrient imbalance

- Overuse of nitrogen leads to:
  - Lower crop productivity in the long run.
  - Higher greenhouse gas emissions (N_2O).

c) Reduce import vulnerability

- Global price shocks directly inflate subsidy bill.
- Strategic autonomy in agriculture compromised.

d) Promote sustainable agriculture

- Aligns with **natural farming**, **soil health restoration**, and **climate goals**.

Challenges in Carrying Out Fertiliser Reforms

a) Political sensitivity

- Fertiliser prices directly affect **small & marginal farmers (86%)**.
- Any price rise risks electoral backlash.

b) Identification of beneficiaries

- Incomplete land records and tenant farming complicate targeting.
- Risk of exclusion errors under DBT.

c) Regional disparities

- Different crop patterns and soil conditions demand flexible pricing.

d) Industry concerns

- Domestic fertiliser units depend on assured subsidies for viability.
- Sudden reforms may affect investment and production.

e) Behavioural challenges

- Farmers accustomed to cheap urea resist balanced fertilisation.

Way Forward: Rationalising Without Hurting Farmers

a) Direct Benefit Transfer (DBT) to farmers

- Move from **price subsidy to income support**.
- Build on JAM trinity and PM-KISAN database.
- Pilot **nutrient vouchers** instead of product-based subsidy.

b) Gradual urea price rationalisation

- Phase-wise increase linked with:
  - Cash compensation to farmers.
  - Awareness on balanced fertilisation.

c) Strengthen Nutrient Based Subsidy (NBS)

- Include **urea under NBS** to remove price distortion.
- Dynamic revision of subsidy rates.

d) Promote alternatives

- Organic manure, bio-fertilisers, nano-urea.
- Scale up **Nano DAP & Nano Urea** adoption.

e) Soil-health centric approach

- Universalise **Soil Health Cards (SHC)** with real-time digital updates.
- Link subsidy benefits with soil test recommendations.

f) Domestic capacity & diversification

- Expand fertiliser plants using green hydrogen.
- Secure overseas mineral assets (phosphate & potash).

India's fertiliser subsidy, while crucial for food security, has become **fiscally unsustainable and ecologically distortive**. The reform challenge lies in **balancing farmer welfare with economic rationality**. A calibrated transition towards **DBT, nutrient neutrality, and sustainable agriculture**, supported by technology and awareness, offers the most viable path forward.

1.49 Navigating Indo-Bangla Relation

India–Bangladesh relations are among India's **most comprehensive neighbourhood partnerships**, marked by deep historical, cultural and economic ties. However, **recent anti-India rhetoric in sections of Bangladesh's political and public discourse** has exposed certain **structural and perception-based fault lines**, requiring careful diplomatic recalibration.

Strain Points in Indo–Bangladesh Ties

1. Political Narrative & Domestic Politics in Bangladesh

- Periodic **nationalist rhetoric portraying India as hegemonic** resurfaces, especially during **electoral cycles**.
- Allegations of Indian interference in Bangladesh's internal politics fuel public resentment.
- Use of India as a **mobilising tool by opposition and radical groups**.

2. Teesta River Water Sharing

- Despite agreements on most rivers, **Teesta water-sharing remains unresolved**.
- Delay due to federal constraints within India has created **trust deficit**, especially in northern Bangladesh.

3. Border Management Issues

- **Border killings**, illegal migration allegations, and smuggling (cattle, drugs) remain sensitive.

- Despite improved coordination, these issues receive **high media traction** in Bangladesh.

4. Rohingya Refugee Crisis

- Bangladesh hosts over **1 million Rohingya refugees**, straining its economy and security.
- Perception that India has not exerted adequate pressure on Myanmar for repatriation.

5. Trade Asymmetry & Non-Tariff Barriers

- Bangladesh enjoys duty-free access to India, yet:
  - Complaints persist about **Indian non-tariff barriers**, port delays, and standards compliance.
- Fear of Indian dominance under regional connectivity projects.

6. Growing Influence of External Powers

- Expanding Chinese footprint in infrastructure and defence creates **strategic anxieties**.
- Sections in Bangladesh view closer alignment with China as leverage against India.

Convergence of Indo–Bangladesh Relations

1. Shared History & Liberation Legacy

- India's role in **Bangladesh's 1971 Liberation War** remains a foundational bond.
- Deep cultural, linguistic and civilisational ties.

2. Economic Interdependence

- India is among Bangladesh's **top trading partners**.
- Bangladesh is India's **largest trade partner in South Asia**.
- Growing cooperation in energy, railways, ports and inland waterways.

3. Connectivity & Regional Integration

- Bangladesh is central to:
  - **India's Act East Policy**
  - Development of **North-East India**
- Transit, power trade, and BBIN initiatives offer mutual gains.

4. Counter-Terrorism & Security

- Bangladesh's zero-tolerance policy against anti-India insurgent groups.
- Strong intelligence and security cooperation.

5. Climate Change & Disaster Management

- Shared vulnerability to floods, cyclones, sea-level rise.
- Scope for joint leadership in **climate adaptation diplomacy**.

What Needs to Be Done: India's Strategic Response

1. Narrative Correction & Public Diplomacy

- Move beyond elite-centric diplomacy to **people-centric engagement**.
- Strengthen cultural, educational and media exchanges to counter misinformation.

2. Address Water Diplomacy with Federal Consensus

- Fast-track a **politically viable Teesta framework**.
- Promote basin-level river management and climate adaptation cooperation.

3. Economic Sensitivity

- Simplify trade procedures, address non-tariff concerns.
- Encourage **Bangladeshi investments in India's NE** to create mutual stakes.

4. Security Cooperation without Optics of Dominance

- Quiet, intelligence-led cooperation on extremism.
- Avoid securitisation of migration in public discourse.

5. Proactive Rohingya Diplomacy

- Actively engage ASEAN, Myanmar and UN mechanisms.

- Support sustainable solutions rather than temporary humanitarian relief alone.

The recent strain in Indo–Bangladesh relations is **not structural but situational**, rooted more in **domestic politics and perception gaps** than in irreconcilable interests. India must respond with **strategic patience, empathy and cooperative federalism**, while reinforcing the deep convergence that binds the two countries.

1.50 Globalizing Indian Higher Education System

In an increasingly knowledge-driven world, the globalisation of higher education is critical for enhancing **quality, competitiveness, innovation, and soft power**. Despite being home to one of the world's largest higher education systems, India's universities remain **under-represented in global rankings** and international academic networks. This reflects structural and policy constraints that hinder global integration.

Issues in Indian Higher Education Hindering Globalisation

1. **Regulatory Over-centralisation-** Multiple regulators (UGC, AICTE, professional councils) lead to **overlapping mandates**.
   - Limited **institutional autonomy** in curriculum design, faculty hiring, and collaborations.
2. **Quality Deficit & Global Rankings-** Very few Indian universities feature in **top 200 global rankings**.
   - Weak performance on parameters like: Research output, Citations, International faculty & students.
3. **Low Internationalisation-** International students form **<1%** of total enrolment in India (vs 8–10% in developed countries).
   - **Barriers include:** Visa issues, Lack of globally aligned curricula, Limited English-medium and credit-transfer programmes.

4. **Inadequate Research Ecosystem- Low R&D spending (~0.7% of GDP)**.
   - Limited industry–academia collaboration.
   - Poor access to global research funding and networks.
5. **Faculty-related Constraints-** Shortage of high-quality faculty.
   - Rigid recruitment norms restrict hiring of **foreign and diaspora faculty**.
   - Brain drain of Indian talent to foreign universities.
6. **Infrastructure & Digital Gaps-** World-class facilities limited to a few institutions (IITs, IISc).
7. **Cultural & Administrative Barriers-** Conservative academic culture discourages interdisciplinary learning.
   - Lengthy approval processes for- Joint degrees, Twinning programmes, Credit mobility.

NITI Aayog's Recent Suggestions to Globalise Indian Higher Education

1. **Making India a Global Education Hub-** Position India as a **destination for international students**, especially from:Global South, Africa, ASEAN countries.

2. **Liberal Entry of Foreign Universities-** Encourage **top 200 global universities** to set up campuses in India.
3. Ensure regulatory clarity through **UGC (Setting up of Campuses of Foreign Higher Educational Institutions) Regulations, 2023**.
4. **Academic & Financial Autonomy-** Grant **graded autonomy** to high-performing institutions.
5. **Internationalisation at Home-** Promote: Joint & dual degree programmes, Credit transfer mechanisms, International curriculum benchmarking.
6. **Strengthening Research & Innovation-** Align with **National Research Foundation (NRF)**.
7. **Attracting Global Talent-** Flexible norms for: Hiring foreign faculty, Visiting professorships, Diaspora engagement.
8. **Ease of Mobility-** Simplified visa, work permits, and stay norms for: International students, Faculty members.

Way Forward

1. **Reform Governance & Regulation-** Move towards a **single higher education regulator** with outcome-based oversight.
2. Shift from input control to **performance-based regulation**.
3. **Invest in Research & Global Networks-** Raise public and private R&D spending to **1.5–2% of GDP**. Incentivise universities to join **global research consortia.**
4. **Build World-Class Universities-** Scale up initiatives like: **Institutions of Eminence (IoE), Global Centres of Excellence** in frontier areas (AI, climate, biotech).
5. **Strengthen International Student Ecosystem-** Create: International student offices, Affordable housing, Cultural integration programmes.
6. **Curriculum & Pedagogy Reform-** Embed: Interdisciplinary education, Experiential and problem-based learning, Global best practices.
7. **Leverage Digital Globalisation**
8. **Promote Academic Soft Power-** Use education diplomacy through: G20, QUAD, India–Africa partnerships.

India's aspiration to become a **global knowledge hub** requires deep reforms in governance, research funding, and international engagement. While **NITI Aayog's recommendations** and **NEP 2020** provide a strong policy foundation, success will depend on **effective implementation, sustained investment, and cultural transformation**. Globalising Indian higher education is not merely an economic goal, but a strategic imperative for India's long-term development and global influence.

1.51 Aravalli Range

The **Aravalli Range**, one of the **oldest mountain systems in the world**, stretches across **Gujarat, Rajasthan, Haryana and Delhi**. Rich in minerals, the region has witnessed **extensive legal and illegal mining**, triggering a long-standing controversy between **economic development and environmental protection**.

Controversy Regarding Mining in the Aravalli Range

- **Rampant illegal mining** of limestone, quartzite, marble and building stone, especially in **Haryana and Rajasthan**.

- **Supreme Court and NGT interventions**:
  - Bans and restrictions on mining in notified Aravalli areas.
  - Emphasis on **precautionary principle** and **sustainable development**.
- **Regulatory dilution attempts**:
  - Re-classification of Aravalli land.
  - Mining under the pretext of **minor minerals** to bypass stringent Environmental Impact Assessment (EIA).
- **Cumulative environmental impact ignored**:
  - Fragmented clearances granted to small mining leases.
- **Centre–State conflict**:
  - States highlight employment and revenue.
  - Environmental groups stress irreversible ecological damage.

The controversy reflects a **development–environment trade-off** in a fragile ecosystem.

Ecological Importance of the Aravalli Range

1. Barrier Against Desertification

- Acts as a **natural shield**, preventing the eastward expansion of the **Thar Desert**.

2. Groundwater Recharge

- Facilitates **rainwater percolation** and sustains aquifers in water-stressed regions like **Rajasthan and Delhi NCR**.

3. Biodiversity Conservation

- Supports **semi-arid ecosystems** with species such as leopards, hyenas, nilgai and diverse birdlife.
- Hosts **sacred groves (Orans)** reflecting traditional conservation practices.

4. Climate Regulation & Air Quality

- Functions as the **green lung of NCR**, reducing dust storms and air pollution.
- Acts as a **carbon sink** mitigating climate change impacts.

5. Soil Conservation

- Prevents **soil erosion and land degradation** in a fragile landscape.

Way Forward

- **Declare ecologically sensitive zones (ESZs)** in critical Aravalli regions based on scientific mapping.
- **Strict enforcement of judicial orders** and zero tolerance towards illegal mining.
- **Cumulative impact assessment** for all mining activities, including minor minerals.
- **Alternative livelihoods** for mining-dependent communities (eco-tourism, afforestation, renewable energy).
- **Inter-state coordination mechanism** for holistic Aravalli conservation.
- **Large-scale ecological restoration** through native afforestation and watershed management.
- **Use of technology** (satellite monitoring, GIS) to detect illegal mining in real time.

The Aravalli controversy underscores the need to move from **extractive development to ecological stewardship**. Protecting this ancient mountain range is vital not only for biodiversity

and groundwater security, but also for **climate resilience and human well-being** in north-west India. A balanced approach rooted in **sustainability, rule of law and community participation** is the only viable path forward.

1.52 India–New Zealand Trade Deal

India and **New Zealand have concluded a Free Trade Agreement (FTA)** in December 2025 after intensive negotiations spanning about **nine months**. The pact represents a significant deepening of bilateral economic engagement. Under the deal:

- New Zealand will **eliminate or significantly reduce tariffs on about 95 % of its exports to India**, facilitating easier access for Kiwi goods.
- India is set to provide **zero-duty access for its exports** to New Zealand, enhancing market opportunities for Indian products.
- Both countries agreed to mobilise **approximately USD 20 billion of New Zealand investment into India over the next 15 years** to support production, technology and services cooperation.
- The agreement is expected to be signed within three months and implemented thereafter.

This FTA is one of India's fastest concluded trade deals and builds on India's broader strategy of diversifying and deepening trade linkages globally.

Significance of the Deal

1. **Economic Gains:**
   - **Tariff liberalisation** will benefit Indian labour-intensive export sectors such as **textiles, leather, gems & jewellery, engineering goods, pharmaceuticals, and marine products** through zero duty access.
   - New Zealand gains **predictable and enhanced access** to India's large and growing market for forestry products, seafood and dairy.
2. **Investment and Services:**
   - The deal includes **commitments on investment**, financial cooperation and provisions that can boost collaboration in **digital payments, fintech, and services sectors.Strategic & Diplomatic:**
   - Aligns with India's **Indo-Pacific trade strategy** of forging diversified partnerships.
   - Enhances people-to-people linkages through **visa and mobility agreements**.
3. **Market Expansion:**
   - Aims to **double bilateral trade by 2030** from relatively modest current levels.

Voids Still to Be Tapped

Despite the promise, several potential areas remain **underexploited**:

1. **Deeper Market Penetration:** India's share in many New Zealand import categories remains low; millions of dollars of export potential across niche segments (e.g., processed foods, agro-products) are untapped.
2. **Services & Digital Trade:** While tariff cuts help goods, deeper liberalisation in **services (professional, education, tourism)** and **digital trade** rules could unlock further value.

3. **Supply Chain Integration:** Integration into **regional value chains**, especially in high-tech manufacturing and agri-tech collaborations, is still nascent.
4. **Geographical Indications (GIs):** Although commitments exist, leveraging GI recognition for Indian products in NZ markets is an area for future expansion.

Challenges

1. **Trade Balance and Disparities:** India's **higher average tariff regime** contrasts with New Zealand's low tariffs, making equitable benefits challenging.
2. **Agricultural Sensitivities:** Key sectors — especially **dairy** — posed sticking points. New Zealand's leading dairy exports were largely excluded, limiting potential gains for NZ producers and reflecting India's domestic protection priorities.
3. **Implementation Barriers: Non-tariff barriers**, regulatory differences, SPS standards, and customs procedures could still impede seamless trade flows if not harmonised further.
4. **Political Hurdles:** In New Zealand, some political opposition regards the deal as suboptimal, potentially affecting parliamentary approval.

Way Forward

1. **Deepen Regulatory Cooperation:** Address **non-tariff barriers** (SPS, technical regulations) through joint mechanisms to reduce compliance costs and ensure smoother trade.
2. **Focus on Services & Digital Trade:** Expand market access in **services**, digital data flows, and fintech cooperation to complement goods liberalisation.
3. **SME and MSME Support:** Provide **capacity building** for Indian MSMEs to take advantage of new markets via trade facilitation, quality upgrades and export promotion.
4. **Sectoral Roadmaps:** Develop **action plans** for sectors like **agri-tech, education services, renewable energy and healthcare** to convert trade potential into reality.
5. **Monitoring & Review:** Institutionalise a periodic **joint review mechanism** to assess trade performance, resolve emerging concerns and adapt to economic shifts.

The India-New Zealand FTA is a **milestone in bilateral relations**, opening up new avenues for trade, investment and cooperation. It reflects India's strategic push for diversified economic engagement, while laying a foundation for sustained growth in bilateral commerce. However, realising its full potential will depend on deeper integration, overcoming asymmetries and proactive policy support going forward.

1.53 Parliamentary Privileges

Parliamentary privileges are **special rights, immunities and exemptions** enjoyed by **Members of Parliament (MPs)** individually and collectively by each House, to ensure the **independent, dignified and effective functioning of the legislature** without external interference.
They are not meant for personal benefit of MPs, but for the **institutional autonomy of Parliament**.

Broadly, privileges include:

- **Freedom of speech in Parliament**
- **Freedom from arrest** in civil cases during sessions
- **Power to punish for breach of privilege or contempt**
- **Right to regulate internal proceedings**

Immunity from judicial scrutiny for parliamentary proceedings (subject to limits)

Constitutional Status

Parliamentary privileges derive their authority from the **Constitution of India**:

Article 105 – Parliament

- **Article 105(1):** Freedom of speech in Parliament
- **Article 105(2):** No legal proceedings for anything said or voted in Parliament
- **Article 105(3):** Powers, privileges and immunities of each House and its members shall be **such as were enjoyed by the House of Commons of the UK at the commencement of the Constitution**, until defined by Parliament by law.

Article 194 – State Legislatures

- Mirrors Article 105 for State Legislative Assemblies and Councils.

Key Point: Parliamentary privileges in India are **largely uncodified**, resting on constitutional provisions, conventions, and judicial interpretation.

Role of Supreme Court in Shaping Parliamentary Privileges

The Supreme Court has played a crucial role in **balancing parliamentary privileges with constitutional supremacy, fundamental rights, and judicial review**.

1. **Pandit M.S.M. Sharma v. Sri Krishna Sinha (1959)** Known as the **Searchlight case**.
    - SC initially held that **Article 19(1)(a)** (freedom of speech) does not override **parliamentary privileges**.
    - Parliament's privilege to prohibit publication of proceedings was upheld.
2. **Keshav Singh Case (1965)**
    - SC ruled:
        - Parliamentary privileges are **subject to judicial review**.
        - Legislature **cannot act arbitrarily** or beyond constitutional limits.
3. **Raja Ram Pal v. Speaker, Lok Sabha (2007)**
        - Related to expulsion of MPs in the **cash-for-query scam**.
        - SC held:
            - Parliamentary actions under privilege are **justiciable**.
            - Courts can intervene in cases of **illegality, irrationality, mala fides, or procedural impropriety**.
4. **Amarinder Singh v. Punjab Vidhan Sabha (2010):** SC emphasised that **power to punish for contempt** must be exercised **sparingly and proportionately**.

Should Parliamentary Privileges be Codified?

Arguments in favour of codification	Explanation
Legal clarity and certainty	**Removes ambiguity arising from reliance on British House of Commons conventions.**
Prevents misuse	**Reduces scope for arbitrary action against media, citizens, or political opponents.**
Democratic accountability	**Aligns parliamentary privileges with constitutional morality and fundamental rights.**
Judicial consistency	**Reduces friction between the legislature and the judiciary.**

Arguments against codification	Explanation
Loss of flexibility	**Privileges evolve with parliamentary practice; codification may make them rigid.**
Political consensus difficult	**Codification may be influenced by partisan or majoritarian interests.**
Existing constitutional safeguards	**Judicial review already acts as a check on misuse of privileges.**
Comparative practice	**Even in the UK, parliamentary privileges have evolved mainly through conventions rather than exhaustive statutes.**

Way Forward / Balanced Approach

1. **Partial codification** may be considered:
    - Clearly define **individual privileges** (e.g., freedom from arrest, speech).
    - Lay down **procedural safeguards** for breach of privilege proceedings.
2. Strengthen **internal parliamentary ethics committees**.
    - Ensure privileges are exercised in line with: **Rule of law, Natural justice, Fundamental rights**

Parliamentary privileges are essential for preserving the **independence and dignity of the legislature**, but they **cannot become instruments of arbitrariness**. Supreme Court jurisprudence has ensured that privileges operate **within the constitutional framework**. A calibrated approach—combining **judicial oversight, democratic restraint, and selective codification**—offers the most viable path forward.

1.54 Venezuelan Crisis

The U.S. under President **Donald Trump** has escalated pressure on **Venezuela** by ordering stringent measures to effectively **block Venezuelan oil exports**, including interdiction of oil tankers and penal action against countries purchasing Venezuelan crude. Given Venezuela's vast proven oil reserves and oil's centrality to the global economy, the move has **wide geopolitical and economic implications**, including for India.

What is Trump's Order?

- The U.S. administration has directed **strict enforcement of sanctions on Venezuelan oil**, including **interception/seizure of oil tankers** linked to sanctioned entities.
- Countries importing Venezuelan oil face **secondary sanctions or punitive tariffs**, aimed at choking the Maduro regime's primary revenue source.
- The order reflects a policy of **maximum pressure**, linking Venezuela's oil trade to issues of democracy, security, and alleged links with hostile powers.

Implications for the World

1. Global Oil Markets

- Venezuela possesses **one of the largest proven oil reserves globally**; disruption of its exports tightens supply.

- This can contribute to **volatility and upward pressure on crude oil prices**, especially in an already fragile geopolitical environment.

2. Geopolitical Tensions

- The move sharpens **U.S.–Russia–China rivalry**, as Russia and China maintain strategic and economic ties with Venezuela.
- Interdiction of tankers raises concerns regarding **freedom of navigation and international maritime law**.

3. Global South Concerns

- Many developing countries view unilateral sanctions as **coercive economic measures**, reinforcing debates on fairness of the global order.
- It may set a precedent for **weaponisation of trade and energy**.

Implications for India

1. Energy Security

- India imports nearly **85–90% of its crude oil needs**. Any global supply disruption or price spike directly affects **import bills, inflation, and fiscal stability**.
- Reduced availability of **heavy crude** (which Venezuela exports) can impact Indian refiners.

2. Strategic and Diplomatic Balancing

- India must balance its **strategic partnership with the U.S.** against its principle of **strategic autonomy** and long-standing opposition to unilateral sanctions.
- Compliance with secondary sanctions may constrain India's options in **Latin America and the Global South**.

3. Economic Impact

- Higher crude prices can worsen the **current account deficit**, raise fuel prices, and indirectly affect growth and welfare spending.

Way Forward (For India)

1. **Diversification of Energy Imports:** Broaden sourcing from West Asia, Africa, Brazil, and others to reduce dependence on geopolitically sensitive suppliers.
2. **Strengthen Strategic Petroleum Reserves (SPR)**: Use SPRs to cushion short-term supply shocks and price volatility.
3. **Diplomatic Engagement**: Engage the U.S. for **waivers or flexibility**, while maintaining dialogue with all stakeholders.
4. **Accelerate Energy Transition**: Push renewables, biofuels, and electric mobility to lower long-term oil dependence.

At the Global Level

- Encourage **multilateral dialogue** through UN and international energy forums to address sanctions, maritime security, and energy stability.
- Promote rule-based approaches over unilateral coercive measures.

Trump's order to curb Venezuelan oil exports underscores how **energy has become a tool of geopolitics**. While it may advance U.S. strategic objectives, it risks global market instability and pressures energy-importing countries like India. A mix of **strategic diversification, diplomatic pragmatism, and accelerated energy transition** remains the most sustainable path forward for India.

1.55 Political Funding in India

Political funding is a cornerstone of democratic processes, enabling parties to contest elections and conduct public engagement. However, in India, the scale, composition and transparency of political finance have been subjects of intense debate and judicial scrutiny. Recent trends show both growth in political funding and persistent opacity in sources and utilisation.

Recent Data on Growth of Political Funding in India

1. **Post-Electoral Bonds Era (FY 2024-25):**
   - After the **Supreme Court scrapped the Electoral Bond Scheme**, political parties received **₹3,811 crore** through **electoral trusts** in FY 2024-25, with about **₹3,112 crore (≈82%) going to the BJP**. Congress and other parties received much smaller shares (~8% and ~10% respectively).
2. **Party Bank Balances:** The **BJP reported over ₹6,900 crore** bank balance, while the **Congress declared around ₹53 crore**.
3. **Funding of Regional Parties:** Analysis of FY 2023-24 shows regional parties like **BRS (₹685.51 cr)** and **TMC (₹646.39 cr)** recorded high annual incomes, with significant year-on-year growth.
4. **Sources & Transparency Issues (FY 2023-24):** Only **43.7% of total income of national parties came from known donors**.

Importance of Political Funding

1. **Ensures Functioning of Democracy-** Elections, campaigns, outreach programmes, and organisational activities require substantial resources.
2. **Facilitates Electoral Competition-** Helps create a level playing field, especially when smaller or new parties receive fair and transparent support.
3. **Strengthens Voter Awareness and Participation-** Financial resources support awareness campaigns, rallies, advertisements, and digital outreach.
4. **Supports Institutional Capacity of Parties-** Enables parties to maintain offices, research wings, training programmes, and policy think tanks.
5. **Enables Representation of Diverse Interests-**When regulated, this promotes pluralism in democracy.
6. **Reduces Dependence on Illegal Sources (If Well-Regulated)-** Encourages accountability and ethical politics.
7. **Promotes Political Accountability-** Regulated funding with disclosure norms enables public scrutiny of donor–party relationships. Helps voters assess potential conflicts of interest.

Issues Related to Political Funding in India

1. **Lack of Transparency & Accountability:** Historically, up to **60% of major party contributions came from undisclosed or opaque sources**, especially under the electoral bond framework.
2. **Escalating Costs & Inequity:** The **2024 Lok Sabha elections became the most expensive in the world**, with total expenses ~₹1.35 lakh crore, reflecting the growing role of money in electoral competition.
3. **Advantage for large parties:** Large parties with deeper pockets can dominate funding, distorting a **level playing field**.
4. **Disparity Across Parties:** Recent data show stark funding imbalances, with the ruling party enjoying a disproportionate share, raising concerns about **influence and unequal competition**.

5. **Weak Enforcement & Regulation:** Legal expenditure limits for candidates are routinely **exceeded through various channels**, including third-party campaigners, undermining statutory controls.
6. **Risk of Influence & Policy Capture:** Large corporate contributions, whether transparent or not, can create **quid pro quo perceptions**, eroding public trust in policymaking.

How Political Funding Can Be Made More Transparent

1. **Robust Disclosure Standards: Mandatory real-time public disclosure** of all political donations above a minimal threshold (e.g., ₹20,000), including donor identity, size and date, should be enforced and published online.
2. **Strengthening Regulatory Oversight:** Empower the **Election Commission of India (ECI)** with expanded audit, enforcement and sanction powers to ensure compliance by parties and donors.
3. **Public Funding & State Subsidies:** Introduce or expand **state funding of elections** to reduce political reliance on large private contributions, promoting equity and reducing influence of money.
4. **Electoral Trust Reforms:** Ensure that **electoral trusts publish detailed accounts** of donor sources and distribution to parties, closing current informational gaps.
5. **Caps on Campaign Expenditure:** Strengthen and enforce legally binding **campaign expenditure limits** with real penalties for violations, supplemented by digital monitoring of election advertising.
6. **Citizen Access to Information:** Leverage digital platforms to provide a **centralised, searchable database** of party finances, donor lists and audit reports, enhancing public scrutiny.

The landscape of political funding in India is **growing in scale but remains insufficiently transparent**, with risks of unequal influence and weakened democratic accountability. While the scrapping of electoral bonds marks judicial intervention for transparency, **significant reforms** — in disclosure, enforcement, public funding, and regulatory oversight — are essential to ensure a **fair, transparent and equitable political financing regime** befitting India's democratic ethos.

1.56 H-1B Visa

The **H-1B visa** is a U.S. non-immigrant work visa that allows American employers to hire **highly skilled foreign professionals**, chiefly in technology, engineering, and specialised services. Traditionally, H-1B visas were allocated through a **random lottery** when applications exceeded the annual cap. The programme has long been a key pathway for Indian professionals seeking global careers and has become deeply integrated into India–U.S. economic and technological collaboration.

What Is the Issue in light of recent policy changes?

In late 2025, the U.S. introduced a **comprehensive overhaul** of the H-1B programme, comprising the following major changes:

1. **End of Random Lottery-** The longstanding lottery

system has been **abolished** and replaced with a **wage- and skill-weighted selection process**.

2. Under the new rules, visas will be allocated with **priority to higher-paid and more specialised workers**. This fundamentally alters the H-1B allocation method and favours experienced, high-wage employees over entry-level or mid-career talent.
3. **Enhanced Vetting and Screening-**The U.S. has expanded visa screening procedures, including **social media reviews and heightened consular scrutiny**. These changes have slowed appointment availability and caused disruptions such as the cancellation/rescheduling of interviews for many Indian applicants.
4. **$100,000 Fee for New Visas-** A controversial **$100,000 application fee** for new H-1B petitions has been upheld by a U.S. court.
5. **Broader Immigration Tightening-** These moves form part of a wider U.S. strategy to **protect domestic labour markets and curb perceived misuse of work visas**

How It Hampers Opportunities for India

1. **Reduced Access for Early-Career Professionals-** The wage-weighted selection inherently disadvantages **entry level and mid-level workers** — categories where many Indian applicants have traditionally been successful. Lower starting wages translate to smaller probabilities of being selected.
2. **High Costs Discourage Sponsors-** The $100,000 fee burdens employers — especially **mid-sized and outsourcing firms** — reducing their willingness to sponsor foreign workers.
3. **Family and Career Disruptions-** Heightened vetting, interview backlogs, and procedural hurdles disrupt job start dates, education plans, and family stability for Indian professionals and dependents.
4. **Impact on Indian IT and Tech Ecosystem-** The Indian IT sector has historically leveraged H-1B mobility to service U.S. clients. These policy shifts may weaken that model, squeezing margins and pushing firms to rethink.

Broader Strategic Implications

1. Brain Drain vs Brain Gain- While restriction of outbound mobility can reduce **brain drain**, it simultaneously risks losing the **global exposure and remittances** that Indian professionals generate. The shift offers a complex trade-off between keeping talent domestically and harnessing global opportunities.

2. Competitiveness and Innovation- Critics argue that limiting foreign skilled workers may constrain U.S. competitiveness, given labour shortages in key sectors (e.g., IT, STEM). This bilateral dynamic also affects India's role in global value chains.

Way Forward: Strategic and Policy Responses

1. **Bilateral Diplomatic Engagement-** India and the U.S. must engage constructively to **clarify concerns**, streamline processes, and address operational issues like interview backlogs and screening transparency. Regular high-level dialogues and joint task forces could mitigate friction.
2. **Focus on Skill Upgradation-** India should enhance **skill development** to align its workforce with global wage and talent expectations. Promoting **higher-value specialisations, advanced degrees, and research credentials** will improve Indian professionals' competitiveness under the wage-based system.
3. **Diversification of Destinations-** Encouraging talent mobility beyond the U.S.—to Canada, the EU, Australia, and emerging tech hubs—can reduce dependence on a single destination and tap into other skilled immigration pathways.

4. **Strengthening India's Domestic Ecosystem-** The government must invest in innovation, R&D, and startup growth, so that skilled Indians can find **world-class opportunities within the country**, helping to retain talent and build a stronger domestic economy.
5. **Remote Work and Global Delivery Models-** Indian firms and professionals can harness **remote work** and **offshore delivery centre expansions**, enabling global companies to tap Indian talent without the need for physical relocation to the U.S.

The overhaul of the H-1B visa regime reflects shifting U.S. policy priorities focused on domestic labour protection and immigration control. While posing challenges for Indian professionals and industry, this moment also presents an opportunity for India to **recalibrate its human capital strategies**, diversify talent pathways, and reinforce its role as a global innovation hub. A balanced approach — combining diplomacy, skill enhancement, and domestic capacity building — will be essential in navigating this transition.

1.57 Health Services Through PPP

India's public healthcare system faces persistent challenges of **infrastructure gaps, manpower shortages, and uneven access**, especially in Tier-II, Tier-III cities and rural areas. To address these constraints and accelerate healthcare expansion, the government has recently encouraged **hospitals and medical infrastructure through the Public–Private Partnership (PPP) model**. This move aligns with the objectives of **Ayushman Bharat, National Health Policy 2017, and Sustainable Development Goal-3 (Good Health and Well-being)**.

Significance / Benefits of PPP Hospitals

1. Expansion of Healthcare Infrastructure

- Mobilises **private capital and expertise** to bridge infrastructure deficits.
- Enables faster creation of **hospitals, diagnostic centres, trauma units**, especially where public investment is limited.

2. Improved Access & Equity

- PPP hospitals in **underserved and aspirational districts** improve access to secondary and tertiary care.
- Supports schemes like **PM-JAY**, ensuring cashless treatment to poor and vulnerable sections.

3. Efficiency and Quality of Services

- Private sector brings **managerial efficiency, advanced technology, and innovation**.
- Reduces patient load on overcrowded government hospitals.

4. Cost Optimisation for Government

- Shares financial and operational risks with private partners.
- Allows government to focus resources on **preventive and primary healthcare**.

5. Skill and Technology Transfer

- Facilitates adoption of **modern medical equipment, digital health solutions, and best practices**.
- Enhances capacity building of public healthcare workforce.

Directive Principles of State Policy (Part IV) *(Non-justiciable but fundamental in governance)*

- **Article 38** – State to promote welfare of the people and reduce inequalities (includes health outcomes).
- **Article 39(e)** – Protection of workers' health and strength.
- **Article 39(f)** – Healthy development of children.
- **Article 41** – Right to public assistance in cases of sickness and disability.
- **Article 42** – Provision for just and humane conditions of work and maternity relief.
- **Article 47** – **Primary constitutional mandate on health**:
  - State shall raise the level of **nutrition**, **standard of living**, and **public health**.
  - Improvement of public health is a **primary duty of the State**.

Fundamental Rights (Part III) *(Judicially enforceable – health via interpretation)*

- **Article 21 (Right to Life)**
  - Interpreted by the Supreme Court to include the **Right to Health**.
- **Article 14** – Equality before law → Non-discriminatory access to healthcare.
- **Article 15(3) & 15(4)** – Special provisions for women and socially backward classes (health schemes).

Fundamental Duties (Part IVA)- Article 51A(g) – Duty of citizens to protect and improve the **natural environment**, indirectly linked to public health.

Concerns and Challenges

1. Commercialisation of Healthcare

- Risk of **profit-driven motives overshadowing public welfare**.
- Possibility of over-charging or denial of services to non-profitable patients.

2. Accountability and Regulation Issues

- Weak contract enforcement and **regulatory oversight** may lead to service dilution.
- Asymmetry of power between government and large private players.

3. Equity and Exclusion Risks

- Poor patients may face **informal payments or limited access**, despite public funding.
- Urban bias in PPP investments.

4. Quality and Standardisation

- Variation in quality of care if **uniform clinical standards** are not enforced.
- Risk of neglecting preventive and public health services.

5. Fiscal and Contractual Risks

- Poorly designed PPP contracts may cause **long-term fiscal liabilities** for states.
- Renegotiation disputes and project failures.

Way Forward

1. Robust Regulatory Framework

- Strengthen **healthcare regulation**, pricing norms, and grievance redressal mechanisms.
- Ensure transparency through **independent monitoring authorities**.

2. Well-Designed PPP Contracts

- Clearly define **service obligations, affordability clauses, performance indicators, and exit options**.
- Risk-sharing must be equitable and realistic.

3. Focus on Equity and Universal Access

- Mandatory reservation of beds for **PM-JAY and vulnerable groups**.
- Incentivise PPP hospitals in **rural and backward regions**.

4. Capacity Building of Government
- Enhance contract management skills at state and district levels.
- Use **digital dashboards and audits** to track outcomes.

5. Integrate with Public Health Goals
- PPP hospitals should complement—not replace—public healthcare.
- Emphasis on **preventive care, maternal health, and disease surveillance**.

Hospitals under the PPP model can be a **powerful instrument to strengthen India's healthcare delivery system**, provided public interest remains paramount. With **strong regulation, equitable design, and outcome-based monitoring**, PPPs can combine the efficiency of the private sector with the inclusiveness of public welfare, advancing India's journey towards **Universal Health Coverage**.

1.58 The rise of China as a world leader and implications on India

China's recent role in hosting and facilitating a ceasefire understanding between **Thailand and Cambodia** signals its growing aspiration to act as a **regional stabiliser and global diplomatic power**. Such mediation efforts reflect Beijing's attempt to reshape global governance norms and challenge the traditional dominance of Western-led institutions.

Growing Role of China on the Global Stage

1. **Emerging Diplomatic Mediator**
   - China is increasingly projecting itself as a **conflict mediator**, especially in Asia and the Global South.
   - Earlier examples include **Saudi Arabia–Iran rapprochement** and active diplomacy in **Myanmar and Afghanistan**.
2. **Alternative to Western-led Order**
   - Positions itself as a **non-interfering, sovereignty-respecting power**, appealing to developing nations.
   - Offers diplomacy without political conditionalities, unlike Western institutions.
3. **Leveraging Economic Influence**
   - Economic tools such as **Belt and Road Initiative (BRI)** enhance China's political leverage.
   - Mediation is often backed by trade, investment, and infrastructure incentives.
4. **Strengthening Regional Leadership**
   - In Southeast Asia, China seeks to emerge as a **primary security and diplomatic interlocutor**, diluting ASEAN's internal mechanisms.
5. **Norm-setting Power**
   - China aims to shape **new norms of conflict resolution**, privileging bilateralism over multilateral institutions like the UN.

Challenges for India Due to China's Rising Global Role

1. **Erosion of India's Strategic Space**
   - China's deeper engagement in India's extended neighbourhood (ASEAN, South Asia)

may **limit India's influence**.
    - ASEAN countries may increasingly balance India against China.
2. **Marginalisation in Regional Diplomacy**
    - India risks being perceived as a **secondary actor** in regional conflict management.
    - Reduced space for India's *Act East Policy* diplomacy.
3. **Security Concerns**
    - China's mediator role may translate into **long-term security presence** or influence in Southeast Asia.
    - Implications for **freedom of navigation** and Indo-Pacific balance.
4. **Narrative Challenge**
    - China projects itself as a **peace-broker**, while India is often viewed as a rule-based but less proactive diplomatic actor.
    - Weakens India's claim as the **voice of the Global South**.
5. **Strategic Encirclement**
    - Combined with China's influence in **Pakistan, Nepal, Sri Lanka, and Myanmar**, such diplomacy contributes to strategic pressure on India.

What India Needs to do?

1. **Proactive Regional Diplomacy**
    - Enhance India's role as a **problem-solver**, not just a stakeholder.
    - Actively offer mediation support in South and Southeast Asia where acceptable.
2. **Strengthen Act East Policy**
    - Deepen political and security engagement with **ASEAN**, beyond trade and connectivity.
    - Institutionalise high-level strategic dialogues and defence cooperation.
3. **Leverage Multilateral Platforms**
    - Use forums like **Quad, East Asia Summit, BIMSTEC, IORA** to shape regional security discourse.
    - Advocate multilateral conflict-resolution mechanisms.
4. **Economic Statecraft**
    - Increase infrastructure, digital, and development partnerships as credible alternatives to BRI.
    - Expand lines of credit and capacity-building initiatives.
5. **Narrative and Soft Power Projection**
    - Promote India's image as a **rules-based, democratic, and inclusive power**.
    - Leverage cultural diplomacy, development partnerships, and Global South leadership.
6. **Strategic Autonomy with Partnerships**
    - Balance relations with major powers while safeguarding autonomy.
    - Avoid reactive diplomacy; focus on long-term strategic positioning.

China's mediation in the Thailand–Cambodia ceasefire is emblematic of its transition from a regional power to a **global diplomatic actor**. While this challenges India's strategic interests, it also underscores the need for India to move from **reactive balancing to proactive leadership**. By combining diplomacy, development, and multilateralism, India can safeguard its interests and emerge as a credible alternative pole in the evolving global order.

1.59 Doping and Sports Governance

Doping refers to the use of **prohibited performance-enhancing substances or methods** by athletes, undermining fairness, health, and integrity of sports. Internationally governed by the **World Anti-Doping Agency (WADA)** and enforced in India by the **National Anti-Doping Agency (NADA)**, strict compliance is essential for global sporting credibility.

India: Highest Doping Offenders — Key Statistics

- According to **WADA's 2024 Anti-Doping Testing Figures**, India recorded **260 positive doping cases** out of **7,113 samples tested**, topping the **global list of doping offenders** for the **third consecutive year**.
- This makes India the only nation with **triple-digit positive cases**, significantly ahead of other countries.
- India's **positivity rate** stood at approximately **3.6%**, one of the highest among countries that tested over 5,000 samples.

Doping Menace is Eroding Governance in Indian Sport

1. **Credibility Crisis:** Persistent top rankings in global doping violations tarnish India's image as a **credible sporting nation**, especially when aspiring to host **mega events** like the **2036 Olympics**.
2. **Weak Enforcement Perception:** Repeated offender status suggests systemic gaps in **doping prevention, detection, and sanctioning frameworks**, undermining deterrence.
3. **Athlete Trust Deficit:** Rising violations erode **athlete confidence** in fair play, and deter grassroots talent from unbiased competition.

4. **Public Disillusionment:** Sports fans and stakeholders become disenchanted with athletic achievements, questioning their legitimacy.
5. **Institutional Strain:** Recurrent high cases reflect weaknesses in coordination between NADA, sports federations, and training institutions, indicating **governance lapses** at multiple levels.

Challenges Faced by Authorities in Tackling Doping

1. **Structural and Regulatory Challenges**
   - **Testing and Laboratory Standards:** India's national laboratory faced suspension by WADA in past years for non-compliance with international standards.
   - **Enforcement Gaps:** Inadequate procedural efficiency — including delayed hearings and lack of streamlined adjudication — weakens the anti-doping regime.
   - **Awareness Deficit:** Coaches, support staff, and athletes lack sufficient **education on banned substances and supplements**, leading to inadvertent violations.
2. **Resource and Capacity Constraints**
   - **Limited Testing Coverage:** Despite increases, India still tests far fewer athletes compared to larger nations, challenging comprehensive monitoring.
   - **Legal and Financial Barriers:** Athletes often lack access to affordable legal support and timely appeal processes, compounding governance issues.
3. **Cultural and Competitive Pressures**

- **Performance Pressure:** Winning incentives without adequate ethical grounding encourage reliance on prohibited performance enhancers.
- **Supplement Misuse:** Misleading or contaminated supplements contribute to inadvertent doping cases.

Way Forward: Strengthening Anti-Doping Governance in India

1. **Institutional Reforms**
   - **Ensure WADA Compliance:** Upgrade and maintain **WADA accreditation** standards for national laboratories without interruption.
   - **Independent Adjudication:** Establish swift, transparent, and **independent anti-doping adjudication panels** to reduce procedural delays and build trust.
   - **Legal Aid Mechanisms:** Facilitate **affordable legal support** and faster appeal channels for athletes.
2. **Education and Awareness**
   - **Mandatory Education Modules:** Conduct regular anti-doping education for athletes, coaches, medical staff, and nutritionists at all levels.
   - **Awareness Campaigns:** Leverage media and federations to disseminate clear guidance on prohibited substances and risks of doping.
3. **Strengthening Detection and Prevention**
   - **Intelligence-Led Testing:** Use strategic, risk-based testing rather than only random sampling.
   - **Collaboration with FSSAI and NFHS:** Partner with food safety and sports science bodies to check contamination in supplements.
4. **Cultural Shift and Ethical Emphasis**
   - **Ethics in Sports Curriculum:** Include ethical training in athlete development programs to instil values of **fair play and integrity**.
   - **Incentive Redesign:** Reward clean sport performance and recognise anti-doping compliance.

India's position as the **highest doping offender globally** is a critical governance challenge that jeopardises sporting integrity and national aspirations on the global stage. Addressing this menace requires a **multi-pronged approach** — strengthening institutions, enhancing education, reforming legal processes, and cultivating an ethics-centred sporting culture. Only through robust governance and sustained commitment can Indian sport regain credibility and protect its athletes and reputation.

1.60 Racial Abuse faced by people from North-East states in Mainland India

The recent killing of a **Chakma student in Uttarakhand** has once again drawn attention to the **persistent racial discrimination and violence faced by people from North-East India** in different parts of the country. Such incidents are not isolated but reflect **deep-rooted prejudices, stereotyping, and social exclusion**, raising serious concerns for **India's constitutional values, unity, and moral conscience**.

Nature of Racial Abuse Faced by North-East Indians

North-East Indians often face discrimination due to their **distinct physical features, cultural**

practices, food habits, and linguistic diversity.

- **Verbal abuse and racial slurs** ("chinki", "outsider", etc.)
- **Social exclusion** in housing, workplaces, and educational institutions
- **Physical violence and hate crimes**, often trivialised as "personal disputes"
- **Institutional apathy**, delayed police response, and weak legal deterrence
- **Cultural invisibilisation**, with limited representation in mainstream narratives

These experiences are reported by students, professionals, and migrants in metropolitan as well as smaller cities.

Issues with Racial Abuse

1. Violation of Fundamental Rights (GS Paper I – Society)

- **Article 14** – Equality before law is undermined by discriminatory behaviour.
- **Article 15** – Prohibition of discrimination on grounds of race and place of birth.
- **Article 19** – Right to move freely and reside anywhere in India.
- **Article 21** – Right to life with dignity.

Racial abuse converts **formal citizenship into unequal lived citizenship**, weakening constitutional guarantees.

2. Ethical Erosion (GS Paper IV – Ethics)

- Reflects a deficit of **empathy, respect for diversity, and fraternity**.
- Normalisation of prejudice contradicts values of **human dignity and compassion**.
- Failure to act decisively shows **ethical blindness of institutions** tasked with justice.

3. Threat to Unity and Integrity of India

- **Undermines "Unity in Diversity"**, a core civilisational value.
- Fuels **alienation and mistrust** between regions.
- Reinforces perceptions of **internal colonialism** felt by people of the North-East.
- Weakens national integration efforts and can provide space for **separatist sentiments**.

National unity cannot be sustained by territorial integration alone; it requires **emotional and social integration**.

Structural Causes Behind the Discrimination

1. **Lack of awareness** about North-East history and cultures.
2. **Mainland-centric education and media narratives**.
3. **Stereotyping and racialisation** inherited from colonial constructs.
4. **Weak implementation of legal safeguards**.
5. **Urban anonymity**, reducing social accountability.

Way Forward: Putting an End to Racial Abuse

1. Legal and Institutional Measures

- Strict enforcement of **IPC provisions** and **SC/ST (PoA) Act**, where applicable.
- Effective implementation of **Bezbaruah Committee recommendations**.
- Fast-track investigation of hate crimes against North-East individuals.
- Sensitisation training for **police and local administration**.

2. Educational and Social Measures (GS Paper I)

- Inclusion of **North-East history, culture, and contributions** in school curricula.
- Cultural exchange programmes and student integration initiatives.

- Promoting **inter-regional dialogue** and people-to-people contact.

3. Ethical and Value-Based Interventions (GS Paper IV)

- Strengthening values of **fraternity (Article 51A)** and mutual respect.
- Encouraging **ethical leadership** in institutions to ensure zero tolerance.
- Media responsibility to avoid stereotyping and amplify voices from the margins.

4. Role of Civil Society and Media

- Civil society monitoring of hate crimes.
- Responsible journalism highlighting systemic issues, not isolated events.
- Platforms for **North-East representation** in mainstream discourse.

The killing of a Chakma student is not merely a law-and-order issue but a **moral failure of society**. Addressing racial abuse against North-East Indians is essential for safeguarding **individual dignity, constitutional morality, and national unity**. A truly integrated India must move beyond symbolic unity to **empathetic coexistence**, where diversity is not merely tolerated but celebrated. **An ethical society is not one without differences, but one that treats differences with dignity.**

1.61 Nature-based Solutions (NbS)

As climate change intensifies extreme weather events, biodiversity loss, and resource stress, **Nature-based Solutions (NbS)** have emerged as a **cost-effective, resilient and inclusive approach** to address environmental challenges. The **IUCN** defines NbS as *"actions to protect, sustainably manage, and restore natural or modified ecosystems that address societal challenges effectively while providing human well-being and biodiversity benefits."*

Nature-based Solutions involve **working with nature rather than against it** by using ecosystems such as **forests, wetlands, mangroves, grasslands, rivers, and urban green spaces** to tackle challenges like climate change, disasters, food insecurity, and water stress.
Examples include:

- Mangrove restoration for coastal protection
- Urban forests for heat mitigation
- Wetland revival for flood control

Core Principles of Nature-Based Solutions (As per **IUCN Global Standard on NbS**)

1. **Address Societal Challenges-** Climate change, disaster risk, food and water security.
2. **Benefit Biodiversity and Ecosystem Integrity-** Enhance species diversity, ecosystem functions.
3. **Ecosystem-based Approach-** Landscape-scale and integrated management.
4. **Economic Viability-** Cost-effective with long-term benefits.
5. **Inclusive Governance-** Participation of local communities and indigenous people.
6. **Adaptive and Evidence-based Management-** Continuous monitoring and flexibility.
7. **Balance Trade-offs-** Equitable distribution of costs and benefits.
8. **Mainstreaming into Policy Frameworks-** Integration with climate, development, and sectoral policies.

Role of Nature-Based Solutions in Addressing the Climate Crisis

1. Climate Mitigation

- **Afforestation and Reforestation:** Forests act as **carbon sinks**. *Example:* India's **Green**

India Mission.

- **Blue Carbon Ecosystems:** Mangroves, seagrasses store **4–10 times more carbon** than terrestrial forests. *Example:* Mangrove restoration in **Sundarbans**.

2. Climate Adaptation & Disaster Risk Reduction

- **Flood Control:** Wetlands absorb excess rainfall. *Example:* **East Kolkata Wetlands** reducing urban floods.
- **Coastal Protection:** Mangroves act as natural barriers against cyclones and storm surges. *Example:* Odisha coast mangrove belts post-1999 super cyclone.
- **Landslide Prevention:** Forest cover stabilises slopes in Himalayas.

3. Agriculture & Food Security

- **Agroforestry:** Trees on farms improve soil fertility and microclimate. *Example:* India's **National Agroforestry Policy**.
- **Soil Conservation:** Contour bunding, cover crops reduce erosion.
- **Pollination Services:** Conserving habitats for bees increases crop productivity.

4. Water Security

- **Watershed Management:** Enhances groundwater recharge. *Example:* **Ralegan Siddhi model**.
- **River Floodplain Restoration:** Improves water flow and reduces flood intensity.

5. Urban Climate Resilience

- **Urban Forests & Green Roofs:** Reduce **urban heat island effect**. *Example:* **Miyawaki forests** in Indian cities.
- **Permeable Surfaces:** Enhance rainwater infiltration.

6. Biodiversity Conservation

- **Protected Areas and Corridors:** Climate-resilient habitats for species migration. *Example:* Elephant corridors in Central India.
- **Community-led Conservation:** *Example:* Sacred groves in Western Ghats.

7. Livelihoods & Inclusive Development

- **Eco-tourism:** Sustainable income without ecosystem degradation.
- **Non-Timber Forest Produce (NTFP):** Enhances climate-resilient livelihoods for tribals.

Advantages of Nature-Based Solutions

1. Cost-effective and scalable
2. Multi-co-benefits (climate, biodiversity, livelihoods)
3. Enhances **climate justice** and community participation

Challenges and Limitations

1. Risk of **greenwashing**
2. Land-use conflicts
3. Long gestation period
4. Need for strong governance and monitoring

Way Forward

1. Integrate NbS into **Nationally Determined Contributions (NDCs)**.
2. Strengthen scientific monitoring and impact assessment.
3. Promote **community stewardship and indigenous knowledge**.
4. Align NbS with **SDGs and climate finance mechanisms**.

Nature-based Solutions offer a **holistic and ethical pathway** to address the climate crisis by aligning **ecological sustainability with human development**. In a climate-constrained world, NbS reaffirm the principle that **nature is not a constraint to development, but its strongest ally**.

1.62 Gig workers

Recent Strikes Called by Gig Workers

- **Nationwide strike on *December 31, 2025*:** Gig and platform workers across India (food delivery, quick commerce, e-commerce logistics) called a nationwide strike, particularly affecting Swiggy, Zomato, Zepto, Blinkit, Amazon and Flipkart platforms.
- The action **follows a strike on *December 25, 2025***, where thousands of workers switched off apps or stayed offline in protest.

Key Demands:

1. **Fair and transparent wage structures** and a minimum per-km rate.
2. **Ban/limits on ultra-fast delivery (like 10-minute delivery)** to reduce pressure and safety risks.
3. **Social security benefits** — health insurance, accident cover, maternity leave, pension and formal worker recognition.
4. **Regulation of work allocation & grievance mechanisms** to curb algorithmic penalties and ID blocks.

Challenges Faced by Gig Workers

A. Labor Rights & Protections

- Most gig workers are classified as *independent contractors*, meaning **no minimum wage, social security, or formal employee entitlements**.
- They lack **health insurance, paid leave, retirement support, or job security**.

B. Income Instability

- Earnings highly **unpredictable and depend on demand and incentives**, complicating financial planning and access to credit.

C. Unsafe Work Conditions

- Workers are pressured to meet **tight delivery timelines** (like 10 min delivery), increasing accidents and stress.
- Many have complained about **unsafe road conditions**, lack of safety gear, or support after accidents.

D. Algorithmic Control & Transparency

- Platforms use opaque algorithms to set **pay, targets, penalties**, with poor dispute redressal and arbitrary ID blocks.

E. Long Hours & Health Impact

- Gig work often involves **10–12 hour days**, with little rest or mandated breaks.

Importance of Gig Workers

A. Growing Workforce

- India's gig workforce is expanding rapidly: it was ~7.7 million in 2020 and projected to reach ~23.5 million by 2030 (≈4.1% of total workforce).
- NITI Aayog projects ~2.35 crore (23.5 million) gig workers by 2029–30.

B. Backbone of On-Demand Services

- Gig workers power **food delivery, logistics, quick commerce, ride-hailing and home services** — crucial segments of India's digital economy.
- **Blue-collar gig hiring jumped ~92% in 2024**, led by e-commerce and delivery platforms, showing demand growth.

C. Economic Contribution

- Globally, the gig economy accounts for **up to ~12% of the labour market** and is expected to grow significantly.
- Reports suggest the Indian gig sector could potentially support **90 million non-farm jobs, transact ~$250 billion in work volume**, and contribute ~1.25% to GDP in future scenarios.

Why This Matters:

- Gig workers are essential for **last-mile delivery, rapid service fulfilment and flexible labour supply** in a digital-first economy.

Disruptions in this workforce — as seen in those strikes — can directly impact service delivery and consumer convenience.

What Needs to Be Done

A. Legal & Regulatory Framework

1. **Recognise gig workers as "workers" under labour law** to grant basic rights and protections.
2. Extend **minimum wage laws** or guaranteed earnings suited to local living costs.
3. **Social security schemes**: health insurance, accident cover, maternity/paternity leave and retirement savings.

B. Fair Work Practices

1. Regulate **algorithmic transparency** — clear rules for pay, penalties, incentives and grievance redressal.
2. Ban unsafe ultra-fast delivery promises (like 10- or 20-minute targets) that push workers into risky behaviour.

C. Safety & Welfare

1. Ensure **road safety training, protective equipment**, and timely compensation after accidents.
2. Create **rest break mandates** and curb excessive working hours.

D. Social Dialogue- Facilitate **tripartite dialogue** (government, unions, platforms) to set standards in the gig economy.

Gig worker strikes in India (Dec 2025) reflect deep-seated grievances on wages, safety, job security and rights. Gig economy growth is significant — projected to support millions of jobs, especially in delivery and on-demand services. But **absence of labour protections** fuels instability and unrest. Effective policy, legal recognition and social security are urgently needed to make gig work sustainable and fair.

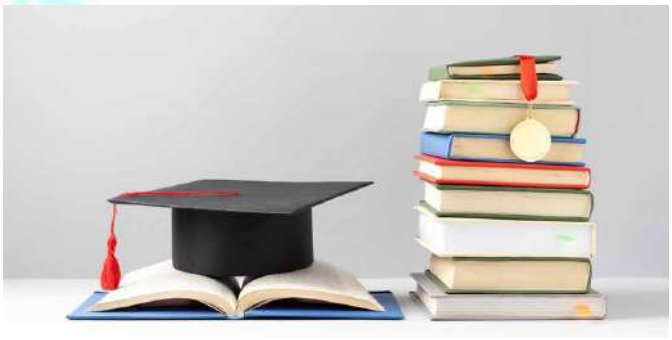
Government Initiatives:

1. **Formal Recognition under New Labour Codes- For the first time**, gig and platform workers (like delivery partners and ride-hail drivers) are **formally recognised** under labour legislation — ending their legal invisibility in the labour ecosystem.
2. **Social Security & Welfare Rights-** Workers are now entitled to benefits such as **health insurance, life & disability cover, maternity benefits, pension and accident insurance** through the labour code framework.
3. **Mandatory Contributions by Platforms- Aggregators (platform companies)** — e.g., food delivery, ride-hail and e-commerce firms — must **contribute to a social security fund** for gig workers.
4. **Portable Benefits & Registration-** Gig workers will get a **unique Aadhaar-linked e-Shram ID**, ensuring **benefits are portable** across jobs and platforms.

1.63 Viksit Bharat Shiksha Adhishthan Bill, 2025

Key Features

1. **Unified Higher Education Regulatory Architecture:** The Bill proposes replacing multiple regulators (UGC, AICTE, NCTE) with a single apex statutory authority called *Viksit Bharat Shiksha Adhishthan* with three specialised councils.
2. **Clear Demarcation of Functions:**
   - *Standards Council* sets academic benchmarks
   - *Regulatory Council* monitors compliance
   - *Accreditation Council* oversees credible evaluation of institutions.



3. **Single-Window Digital System:** Technology-driven, faceless, single-window portal for approvals, inspections and compliance, based on public self-disclosure and outcome-based regulation.
4. **Autonomy with Accountability:** Institutions meeting quality benchmarks can access graded academic and administrative autonomy. Public disclosure of key data (finance, faculty, outcomes) is mandated to enhance transparency.
5. **Student Feedback in Accreditation:** Student insight and feedback will be incorporated into accreditation and quality assurance, incentivising institutions to improve learning outcomes.
6. **Strict Action Against Illegal Institutions:** Robust penalties (e.g., fines, closure) for unapproved "degree mills" to protect students and credentials.
7. **Alignment with NEP 2020:** The Bill aims to operationalise the vision of NEP 2020 by reducing regulatory fragmentation, promoting multidisciplinary learning, research and global engagement.

How It Will Improve the Education System

1. **Streamlining Governance & Regulation:** Replacing overlapping bodies simplifies compliance, reduces administrative burden, and creates a coherent regulatory ecosystem.
2. **Promoting Institutional Autonomy:** Outcome-based autonomy encourages innovation in curriculum, pedagogy, multidisciplinary programmes and research culture – crucial for

knowledge-economy readiness.

3. **Enhancing Transparency & Accountability:** Public access to institutional data and student feedback mechanisms can improve institutional governance and build trust among stakeholders.
4. **Improving Quality & International Competitiveness:** Unified standards and credible accreditation are likely to raise global recognition of Indian degrees, attract international students and faculty, and raise global rankings.
5. **Tackling Malpractices:** Strong legal deterrents against unregulated institutions protect learners and uphold quality of credentials.

Challenges That Remain

1. **Risk of Over-Centralisation:** Critics argue that power may centralise at the Centre, undermining federal structures and state autonomy in education decision-making.
2. **Capacity & Equity Concerns:** A unified regulatory authority may struggle to address diversity across regions, languages, and local needs, potentially marginalising smaller institutions.
3. **Funding & Infrastructure Constraints:** The Bill does not directly address longstanding issues like low public expenditure on education (well below the NEP-recommended 6% of GDP), faculty shortages and research investment gaps.
4. **Implementation Risks:** A digital, faceless system might reduce human discretion but could also create new accountability issues, especially for rural or marginalised communities with limited digital access.

How These Challenges Can Be Addressed

1. **Ensuring Cooperative Federalism:**
    - Include adequate state representation in councils.
    - Strengthen consultation mechanisms between Centre and states to respect local pedagogical contexts.
2. **Balanced Decentralisation:**
    - Implement region-specific advisory panels within the national framework to cater to classroom realities and diverse needs.
3. **Increase Public Investment:**
    - Gradually raise education spending toward NEP targets (6% of GDP).
    - Provide earmarked funds for research, scholarships, infrastructure and faculty recruitment.
4. **Inclusive Digital Governance:**
    - Complement digital portals with regional support centres.
    - Provide capacity building for institutions in underserved areas to comply with new systems.
5. **Quality Assurance with Equity Lens:**
    - Accreditation criteria must include socio-economic and inclusive education outcomes, not only global metrics.

The **Viksit Bharat Shiksha Adhishthan Bill, 2025** represents a **landmark overhaul of India's higher education regulatory framework**, aiming to unify fragmented regulators, promote autonomy, and align with the vision of the **National Education Policy 2020**. By streamlining governance, integrating outcome-based quality assessment, and leveraging technology for transparent regulation, the Bill has the potential to make Indian higher education more competitive, accountable and student-centric. However, challenges remain in ensuring cooperative federalism,

addressing funding and infrastructure shortfalls, and safeguarding equity in access and quality. Strategic policy adjustments and inclusive implementation can help realise the full promise of this reform for India's knowledge economy and social mobility.

2. PRELIMS BOOSTER

2.1 Kashi Tamil Sangamam

- Part of the **Ek Bharat Shreshtha Bharat** initiative of the Government of India.
- Aims to **celebrate, reaffirm and rediscover** the *age-old cultural and civilizational linkages* between **Kashi (Varanasi)** and **Tamil Nadu**.
- Conducted by **Ministry of Education** in collaboration with **IIT Madras**, **Banaras Hindu University (BHU)** and other organizations.
- Foster **people-to-people connections** between North and South India.
- Showcase shared traditions in **language, literature, music, dance, spirituality**, and **education**.
- Promote **cultural tourism** and academic exchange.

2.2 MH60R Helicopter

- India has signed **Letters of Offer and Acceptance (LOAs)** worth Rs 7,995 crore with the US for five-year sustainment support of the **Indian Navy's MH-60R multi-role helicopters.**
- Previously India had acquired the same for the Navy in 2024.
- The Indian Navy commissioned its **first MH-60R squadron in 2024, at INS Garuda in Kochi.**
- It is an **advanced, all-weather, multi-role platform** with **anti-submarine warfare (ASW)** capability, crucial for India's maritime security.

2.3 Liquid Helium

- The Union Minister of Science & Technology visited the **Quantum Research Laboratories at IIT Bombay** and inaugurated the **Institute's new Liquid Helium Facility**.
- It lays the foundation for indigenous dilution refrigeration units for ultra-low temperature quantum computing and boosts India's capabilities in cryogenics, superconductivity, quantum computing, sensing, photonics, healthcare (e.g., MRI), and green energy.
- **Quantum computing** depends on **dilution refrigerators** at ultra-low temperatures **(below –272°C)**, and the **Liquid Helium Facility** enables **indigenous units**, key to India's **technological self-reliance.**
- **Helium** turns into **liquid helium** at its extremely low boiling point (-268.93°C), creating the **cryogenic conditions** needed for **superconductivity, superfluidity, and quantum computing**, crucial for **quantum research**.

2.4 Sujalam Bharat Summit 2025

- The **Ministry of Jal Shakti** is the host for the **Vision for Sujalam Bharat Summit 2025** in New Delhi.
- To accelerate **water sustainability** in India by promoting **evidence-based policy making**, **sectoral reforms**, and **cooperative federalism** in **water governance**.

- **Encompasses 6 critical thematic areas:** Rejuvenation of Rivers and Springs, Greywater Management, Technology-driven Water Management, Water Conservation, Sustainable Drinking Water Supply, Community Engagement.

2.5 Bioremediation

- **Bioremediation** is the use of **microorganisms, plants, or enzymes** to detoxify, degrade, or remove pollutants from soil, water, or air.
- **Key Techniques**
  - **Phytoremediation** (phytoextraction, phytovolatilization, rhizofiltration)
  - **Mycoremediation** – use of fungi
  - **Biodegradation** – microbial breakdown
  - **Biomagnification reduction** – via uptake/immobilization
  - **Vermi-remediation** – use of earthworms
- **Types of Bioremediation**
  1. **In-situ Bioremediation:** Treatment occurs **at the contamination site**. Examples:
     - **Bioventing:** Supply of air/nutrients to stimulate microbes.
     - **Bioaugmentation:** Adding specific microbial strains to enhance degradation.
     - **Biostimulation:** Adding nutrients to stimulate indigenous microbes.
     - **Phytoremediation:** Plants used for extraction/degradation (e.g., hyperaccumulators).
  2. **Ex-situ Bioremediation**
     Contaminated material is **excavated and treated elsewhere**. Examples:
     - **Bioreactors**, **Composting**, **Landfarming**, **Slurry-phase bioreactors**.

2.6 Rare Earth Elements (REEs)

- REEs are **17 elements** in the periodic table: **15 lanthanides** (La → Lu) + **Scandium (Sc)** and **Yttrium (Y)** (chemically similar).
- **Key Uses: Electronics:** smartphones, laptops, **Magnets:** NdFeB magnets (wind turbines, EV motors), **Defence:** precision-guided missiles, radar systems **Energy:** catalysts, batteries, nuclear reactors and **Green Tech:** solar cells, hydrogen storage.
- **Major producers (2024): China** – ~60–70% of global production
- India has **6th largest reserves** globally.

2.7 Heron Mk II UAV

- **Heron Mk II** is a **Medium-Altitude Long-Endurance (MALE) Unmanned Aerial Vehicle** developed by **Israel Aerospace Industries (IAI)**.
- **Endurance:** Up to **45 hours**
- **Operational Ceiling:** ~ **35,000 ft**
- **Speed:** ~ **150 knots**
- **Range:** Beyond-line-of-sight operations via

SATCOM

- **Capabilities: Day/Night surveillance, Border monitoring, Maritime domain awareness etc.**

2.8 Sanchar Saathi App

- A **citizen-centric telecom platform** launched by the **Department of Telecommunications (DoT)**.
- Aim: Enhance **mobile user safety**, reduce **fraud**, and improve **transparency** in telecom services.
- Lets users verify **authenticity of mobile phones** using IMEI data.
- Reduce cyber fraud (SIM misuse, impersonation).
- Improve consumer protection and digital safety.

2.9 GPS Spoofing

- **GPS Spoofing** is the act of **sending fake GPS signals** to a receiver to mislead it into calculating an incorrect location, time, or velocity.
- **How It Works**
  - Attacker broadcasts counterfeit GPS signals that are **stronger** than real satellite signals.
  - The target device locks onto the fake signals and displays a **false position**.
  - Achieved through software-defined radios, signal repeaters, or hacked navigation systems.
- **Key Sectors Affected: Aviation** – Aircraft navigation errors, **Maritime** – Ships diverted from actual routes, **Military Assets** – Drones misdirected; missile guidance disrupted, **Civil Infrastructure** – Banking, telecom, power grids (GPS time sync), **Vehicles & UAVs** – Self-driving and civilian drones vulnerable.

2.10 Taragiri

- The Indian Navy received **Taragiri (Yard 12653)**, the fourth **Nilgiri-class (Project 17A)** frigate and the **third P17A ship** built by **Mazagon Dock Shipbuilders Ltd (MDL)**.
- It was designed by the **Warship Design Bureau (WDB)** and built using the **Integrated Construction** approach for timely delivery.
- Earlier **INS Nilgiri, INS Udaygiri and Himgiri** were received by the Indian Navy under Project 17A.
- **Project 17A:** It is India's programme to build seven **Nilgiri-class stealth frigates** as an upgraded successor to the **Shivalik class**.
- About **75% of the Nilgiri-class systems are indigenously sourced**. Built for blue-water missions, the frigates can tackle a wide range of threats and **excel in anti-surface, anti-air, and anti-submarine warfare**, making them highly versatile frontline assets.

- P17A ships use **Combined Diesel or Gas (CODOG) propulsion plants**

2.11 Index of Industrial Production (IIP)

A **monthly** indicator measuring the **volume of production** in the industrial sector of India. Reflects short-term changes in **industrial growth**.
Released By: National Statistical Office (NSO), Ministry of Statistics & Programme Implementation (MoSPI).
Base Year: 2011–12 (current)
Components IIP is composed of **3 major sectors**:

1. **Manufacturing – 77.6%** weight
2. **Mining – 14.4%** weight
3. **Electricity – 8.0%** weight

Data Source: NSO collects data from **1,000+ factories and agencies**.

2.12 High speed ejection system for aircraft tested

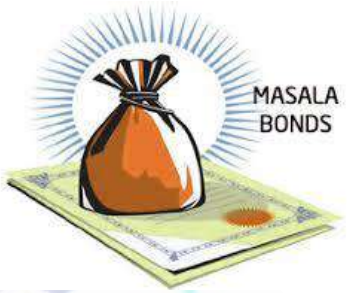
- **Speed achieved:** The test simulated a flight at **800 km/h**.
- **Location / Facility:** The test was carried out at the Terminal Ballistics Research Laboratory.
- **Collaborators:** The test was conducted by DRDO in collaboration with Aeronautical Development Agency (ADA) and Hindustan Aeronautics Limited (HAL).
- This places India among a select group of nations with in-house capability to conduct advanced escape-system testing.
- Ensures safer bailout for fighter pilots in emergencies — critical for combat effectiveness and human safety.
- Defence self-reliance: Reduces dependency on foreign companies for ejection systems, boosting indigenous aerospace capabilities.

2.13 WHO Guideline on the Use of GLP-1

- The **World Health Organization (WHO)** has classified **obesity as a chronic disease** needing lifelong, comprehensive care, and has released its first guidelines on the use of **Glucagon-Like Peptide-1 (GLP-1) weight-loss** therapies to tackle the rapidly growing global obesity crisis.
- **GLP-1:** These medicines can lead to **15–20% weight loss** (similar to bariatric surgery) and also provide benefits for cardiovascular, kidney, liver, and sleep apnea conditions.
- **WHO GLP-1 Guidelines:** Allows conditional long-term use of GLP-1 medicines for adults with obesity, **except pregnant women,** due to lack of evidence on long-term safety.
- **Obesity:** WHO defines obesity as having a Body Mass Index (BMI) of 30 or higher in adults. In India, a person is considered obese if their BMI is 25 kg/m² or higher. Morbid obesity occurs when a person's BMI is 35 or more.
- **Global burden:** Over 1 billion people live with obesity, causing 3.7 million deaths in 2024, with numbers projected to double by 2030. In India, the National Family Health Survey

(NFHS)-5 (2019-21) shows 24% of women and 23% of men are overweight or obese.

2.14 Masala Bond



- Masala Bonds are rupee-denominated bonds issued overseas by Indian entities to raise funds, where the currency risk is borne by the investor, not the issuer.
- First issued globally by **International Finance Corporation (IFC) in 2014** (₹1,000 crore) and officially allowed by **RBI in 2015** under its rupee-denominated bond framework.
- **Investor bears currency risk**, unlike ECBs where Indian borrowers carry forex risk.
- **Eligible issuers:** Indian corporates, NBFCs, REITs, InvITs.
- **Listing:** Can be listed on global exchanges (e.g., London, Singapore).
- **Use restrictions:** Cannot be used for capital market investment, real estate (except affordable housing), land purchase, or FDI-prohibited sectors.
- **Minimum maturity:** Initially 5 years, later reduced to **3 years**.
- **Tax incentives:** 5% withholding tax on interest; capital gains from rupee appreciation exempt.

2.15 Biological Weapons Convention

- India hosted the international conference "50 Years of BWC: Strengthening Biosecurity for the Global South" in New Delhi.
- The **Biological Weapons Convention (BWC)** is the world's first multilateral disarmament treaty banning an entire category of weapons of mass destruction.
- It prohibits the development, production, stockpiling, acquisition, transfer and use of biological and toxin weapons.
- India is a **founding State Party** and one of the **189 signatories** committed to full compliance.
- **Key Features of the Biological Weapons Convention:**
  - **Core Prohibitions (Articles I–III):** No development, stockpiling, or use of biological and toxin weapons. Obligation to destroy existing stockpiles.
  - **No Verification Mechanism:** A major limitation: BWC lacks a **formal verification regime** to check compliance.

2.16Aircraft Hansa-3 NG

- Hansa-3 NG is a two-seater, next-generation, all-composite trainer aircraft designed for Private Pilot Licence (PPL) and Commercial Pilot Licence (CPL) training.
- It is the first fully indigenous trainer aircraft ready for serial production in India's civil aviation ecosystem.

- **Developed by:** Designed and developed by CSIR–National Aerospace Laboratories (NAL), Bengaluru.
- Built with a lightweight composite airframe, making the aircraft durable, fuel-efficient and easier to maintain.
- Features a bubble canopy and wide cockpit, giving excellent visibility and comfortable seating for trainee pilots.
- Designed for stable low-speed handling, making take-offs, landings and training manoeuvres safer for beginners.
- Powered by a fuel-efficient Rotax engine, widely used worldwide for flight-training aircraft.

2.17 Fully Accessible Route (FAR) Bonds

- The FAR is a Reserve Bank of India (RBI) framework introduced in 2020 that allows un restricted foreign investment in select Government of India securities known as FAR Bonds.
- It draws attention to India's debt market and the factors influencing **FPI participation.**
- **Key Features:**
  - **No investment caps** for FPIs (unlike regular FPI limits in G-Secs).
  - Weights of FAR securities **not counted** in overall FPI debt limits.
  - Instruments designated as FAR are usually **long-dated G-Secs** (e.g., 5-year, 10-year, 30-year G-Secs).
  - RBI periodically notifies the list of FAR-eligible securities.

2.18 Exercise EKUVERIN

- 14th edition of the **Joint Military Exercise, EKUVERIN,** between the Indian Army and the Maldives National Defence Force (MNDF) commenced in Thiruvananthapuram, Kerala.
- EKUVERIN means **friends** in **Dhivehi** and reflects the strong defence ties between India and the Maldives.
- Held alternately in India and the Maldives since 2009.
- Aligned with India's **Neighbourhood First policy**.
- It reinforces both countries' commitment to security and **stability in the Indian Ocean Region.**
- The exercise improves interoperability in **Counter-Insurgency and Counter-Terrorism operations** operations across jungle, semi-urban and coastal areas.

2.19 Alakananda Galaxy

- Researchers at **National Centre for Radio Astrophysics - Tata Institute of Fundamental Research (NCRA–TIFR), Pune**, have discovered a well-structured spiral galaxy named **Alaknanda**
- It dates back to just **1.5 billion years after the Big Bang.**

- Alaknanda is located about **12 billion light-years away** and shows **a textbook spiral structure.**
- It **has two clear spiral arms** and a bright central bulge, **strikingly similar to the Milky Way**.
- Named after the Himalayan river Alaknanda, considered the sister river of Mandakini, which is also the Hindi name for the Milky Way.

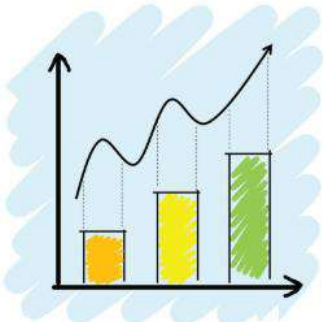
2.20 IMO Council

- **India has been re-elected to the International Maritime Organization (IMO) Council** in Category B (countries with major seaborne trade interests) for 2026–27.
- The **IMO Council** (40 members across **Categories A, B, and C**) acts as the **executive body** between Assembly sessions and **shapes global maritime policies**.
- **IMO** is a **specialized agency** of the **United Nations**, established to **regulate global shipping**.
- It functions as the **global standard-setting authority** for the shipping industry, creating a **fair**, **effective**, and **universally adopted regulatory framework**.
- **I**t currently has **176 Member States** and. **3 Associate Members**. **India** has been a member since **1959.**
- Its core responsibility is to improve the **safety** and **security** of **international shipping** and prevent **marine** and **atmospheric pollution** from ships.
- A critical feature is that the **IMO** itself does **not enforce** its policies; implementation is the responsibility of its **member states**.

2.21 'Seva Teerth'

- The Union Home Minister referred to the upcoming new Prime Minister's Office (PMO) in the Central Vista complex as "Seva Teerth", calling it a landmark in India's administrative evolution.
- The term signifies a shift towards citizen-centric governance rooted in service, aligning with the **broader ethos of Seva (service)** in Indian political philosophy.
- **Seva Teerth' Symbolise: Spiritual-Administrative Fusion, Symbolic Governance.**

2.22 Economic Census (EC)



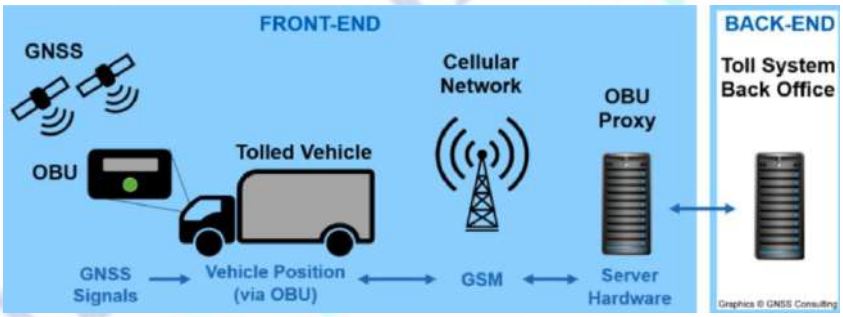
- India will carry out its **8th Economic Census (EC) in 2027**, following the **two-phase Population Census (2026–27).**
- **1st EC was carried out in 1977.**
- **Economic Census (EC)**: It is the complete **count of all establishments** (i.e. units engaged in production and/or distribution of goods and services not for the purpose of sole consumption) located within the

geographical boundaries of the country.

- EC is carried out by The Ministry of Statistics and Programme Implementation (MoSPI).
- Data from 8th EC will be used to create the **Statistical Business Register (SBR)**, a unified database mapping **all enterprises across states**.
- The SBR will help track whether enterprises are **active or closed**, improving the accuracy of national economic statistics.

2.23 Electronic Toll Collection (ETC)

- Electronic system for automatic toll deduction without stopping at toll plazas.
- Based on **RFID (Radio Frequency Identification)** technology.
- It is GNSS (Global Navigation Satellite System) based ETC system **within the existing FASTag ecosystem**.
- **Significance of GNSS based ETC**
    - Barrier less free-flow tolling and distance-based tolling, thus reducing congestion.
    - Help to plug leakages and check toll evaders.
    - Modernization in toll collection systems in lines with global practices.



2.24 Postal UPI (DHRUVA)

- **Digital Hub for Reference and Unique Virtual Address** — a national-level Digital Address Digital Public Infrastructure (DPI) being developed by Department of Posts (DoP).
- Under DHRUVA, DoP has introduced DIGIPIN — a geo-coded addressing system.
- Based on **Address-as-a-Service (AaaS)**, it enables **secure, consent-based sharing** of **geo-coded address information** through a seamless digital platform.
- DIGIPIN divides India into uniform grids of approx. **4 metre × 4 metre**.
- Each grid is assigned a **unique 10-character alphanumeric code** (based on latitude-longitude).

2.25 Su-57

- The **Sukhoi Su-57** is Russia's **fifth-generation, multi-role stealth fighter aircraft**.
- Developed by **Sukhoi Design Bureau** under the **PAK FA (Prospective Airborne Complex of Frontline Aviation)** program.
- Uses **stealth shaping**, radar-absorbent materials, internal weapons bay.
- Air superiority + ground attack + electronic warfare + reconnaissance.

- **Internal bay** for air-to-air and air-to-surface missiles.
- Capable of carrying **hypersonic missiles** (e.g., Kinzhal-type in future).
- **Advanced Avionics:** Integrated sensor fusion, AESA radar for multi-target tracking, onboard defence systems, and AI-assisted combat support.

2.26 Hornbill Festival

- Held annually in **Nagaland**, primarily at the **Naga Heritage Village, Kisama (near Kohima)**.
- **Started in: 2000**, organized by the **Government of Nagaland**.
- To promote **Naga heritage, culture, dance, music, crafts, cuisine**, and **tribal diversity**.
- Known as the **"Festival of Festivals"** due to participation of all major Naga tribes.
- Named after the **Hornbill bird**, culturally revered in Naga folklore.
- Promotes conservation awareness due to declining hornbill population.
- Held **annually from 1st to 10th December**.
- Traditional dances, folk songs, tribal morungs, crafts, indigenous games (like **Naga wrestling**), and food festivals.

2.27 PM-WANI Scheme

Prime Minister Wi-Fi Access Network Interface (PM-WANI).
Launched by: Department of Telecommunications (DoT), 2020.
Objective:

- To provide affordable, decentralized, and public Wi-Fi hotspots across India.
- Boost digital inclusion, last-mile connectivity, and ease of doing business for small entrepreneurs.

Key Components / Entities

1. **Public Data Office (PDO)-** Provides **Wi-Fi services** to customers.
2. **Public Data Office Aggregator (PDOA)-** Aggregates multiple PDOs.
3. **App Provider-** Creates **WANI-compliant apps** to discover hotspots and enable user
4. **Central Registry-** Maintains database of **PDOs, PDOAs, and App Providers**.

2.28 Advanced Nuclear Energy for Enriched Life (ANEEL)

It is a unique blend of thorium and a small amount of enriched uranium (High Assay Low Enriched Uranium).
A **bilateral technology cooperation programme** between **India and the United States** to advance **next-generation nuclear energy systems**.
Designed as a **drop-in fuel** for **PHWRs** (Pressurized Heavy Water Reactors like India's indigenous reactors), it can operate within existing systems with only minimal adjustments.

Significance of ANEEL: The **Levelized Cost of Electricity (LCOE)** from India's **natural uranium reactors** is about **Rs 6/kWh**, and **ANEEL fuel** could cut this by **20–30%**, boosting **nuclear power competitiveness**.

- It offers **higher efficiency, better fuel performance, over 85% less nuclear waste, and uses thorium, which is abundantly available.**

Thorium-based Nuclear Reactor

- **About:** It is a type of nuclear reactor that uses **thorium (Th-232)** as its primary **fertile fuel** material, as opposed to the conventional use of **uranium (U-235)** or **plutonium (Pu-239)**.
  - **Thorium** itself is **not fissile** (cannot sustain a chain reaction on its own), so it must be combined with a **fissile "driver" material** (like **U-235**, **U-233**, or **plutonium**) to initiate and sustain the **nuclear reaction**.
- **Advantages:**
  - **Abundance:** Thorium is **3–4 times more abundant** than uranium and widely available in **India**, **Australia**, and the **USA**.

2.29 Open Market Operations (OMO)

- **Open Market Operations** are the buying and selling of **government securities (G-secs)** by the **Reserve Bank of India (RBI)** to regulate **liquidity** in the economy.
- **Types of OMO**
  1. **OMO Purchase**
     - RBI **buys G-secs**; injects liquidity
     - Used when **liquidity is tight** or economic growth needs support.
  2. **OMO Sale**
     - RBI **sells G-secs**; absorbs excess liquidity.
     - Used when **inflation is high** or liquidity is excessive.
- **Purpose of OMO**
  - Manage **liquidity** in the banking system
  - Influence **short-term interest rates**
  - Support **monetary policy transmission**
  - Control **inflation** or stimulate **growth**, depending on liquidity conditions
- **Not a mandatory reserve requirement** (unlike CRR).
- **Different from MSS** (Market Stabilisation Scheme) which is specifically for absorbing liquidity from **capital inflows**.

2.30 Slender-billed Vulture

- Found mainly in India, Nepal, Bangladesh, Myanmar, and parts of Southeast Asia.
- In India: Mostly in the Assam floodplains, Terai region, and Gangetic plains.

➤ **Conservation Status**

- IUCN Red List: Critically Endangered
- Wildlife (Protection) Act, 1972: Schedule I

- CITES: Appendix II

➤ **Key Features**

- Very slender, long bill, a distinguishing feature.
- Prefers lowland riverine forests and open areas near human settlements.

➤ **Major Threats**

- Diclofenac poisoning (primary reason for 95% vulture decline in India).
- Habitat loss and food scarcity.
- Collisions with power lines.
- Low breeding rate.

2.31 Flight Duty Time Limitations Rules

- FDTL refers to regulatory limits on how long pilots can be on duty, how many hours they may fly, the number of night operations they can perform, and the minimum rest required to prevent fatigue.
- Published by: Issued and enforced by the Directorate General of Civil Aviation (DGCA)
- To reduce fatigue-related safety risks, align Indian aviation with global norms, and ensure safer flight operations by regulating duty hours, night operations, and rest requirements.
- Features:
    - **48 hours of continuous** weekly rest ensures pilots get sufficient uninterrupted recovery time.
    - **Night period extended to 00:00–06:00** increases protected rest hours for early-morning and late-night flights
    - **Limit of two-night landings and two consecutive night duties**
    - **Mandatory roster adjustments and fatigue** reporting

2.32 Exercise Harimau Shakti (PIB)

- Exercise Harimau Shakti is a bilateral military exercise between India and Malaysia.
- It is conducted between the Indian Army and the Malaysian Army.
- India: Represented mainly by troops from the DOGRA Regiment.
- Malaysia: Represented by the 25th Battalion, Royal Malaysian Army.
- **Host location:** Mahajan Field Firing Range, Rajasthan (India).

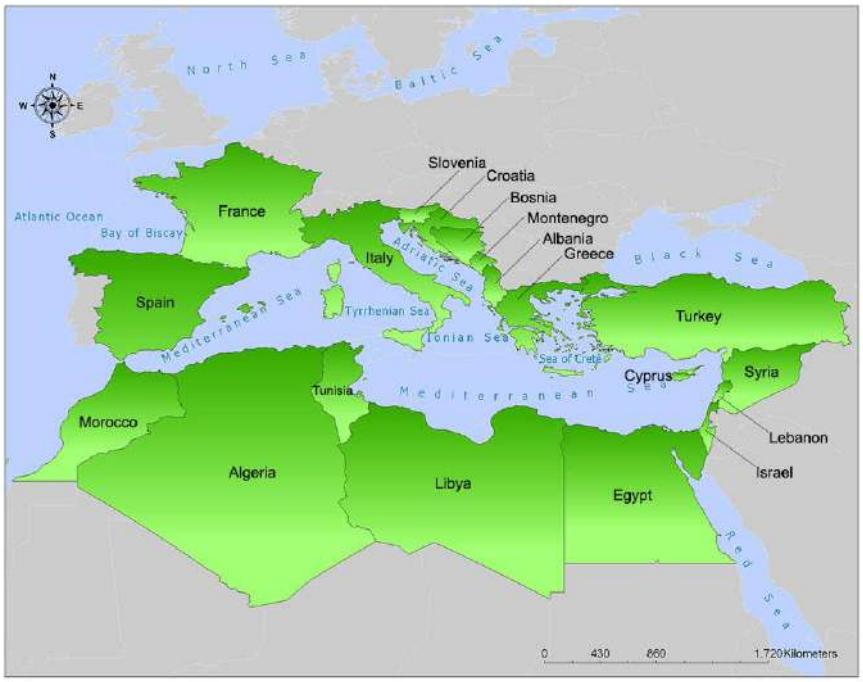
2.33 Barcelona Convention

- At COP24 of the Barcelona Convention in Cairo, EU countries and Mediterranean partners adopted strengthened commitments to protect the Mediterranean Sea.
- The Barcelona Convention is a legally binding UNEP-led regional environmental agreement

for protecting the Mediterranean Sea against pollution and promoting sustainable coastal and marine management.

- Aims:
  - Prevent, reduce, combat and eliminate pollution from land-based, marine and atmospheric sources.
  - Promote sustainable development through coordinated regional action.
  - Support Mediterranean states in implementing protocols dealing with dumping, emergencies, land-based sources, protected areas, offshore pollution, hazardous waste, and coastal zone management.

Map: Mediterranean Nations:



2.34 UMEEED Portal (PIB)

- **Launched by:** Ministry of Minority Affairs, Government of India.
- **Objective:** To modernize and digitalize Waqf properties and ensure transparent administration.
- **Key Features:**
  - Centralized digital registry and GIS-based mapping of Waqf properties.
  - Enables real-time monitoring of encroachments, lease renewals, and management practices.
  - Facilitates documentation, compliance tracking, and data-driven decision-making for Waqf Boards.
  - Part of the broader push for Waqf reforms and transparency.
- Facts: Only 27% Waqf properties are listed on UMEED; under 1% in West Bengal.

2.35 ISRO's Parachute Test Boosts Human-Rating Standards (for Gaganyaan)

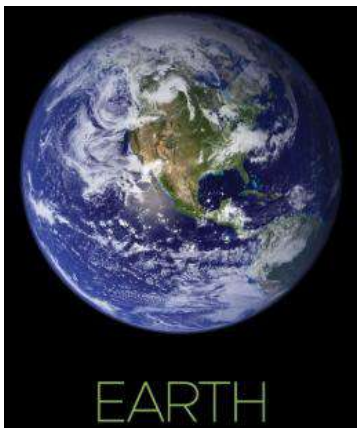
- **IMAT** is a crucial test conducted by **ISRO** for the **Gaganyaan human spaceflight mission**.

- It involves **dropping the full-scale parachute system** from a high altitude to verify its performance during **re-entry and landing**.
- **Features:**
  - Simulates extreme descent conditions, including delayed parachute opening.
  - Checks structural strength, load-bearing, and stability under stress.
  - Crucial part of human-rating certification to ensure astronaut safety.
- **Gaganyaan Mission-** India's first human spaceflight program, aiming to send a crew of 3 astronauts to Low Earth Orbit (LEO) at 400 km for 3 days and return them safely to Earth.
- Includes unmanned test missions followed by the first manned mission expected to happen in early 2027.

2.36 Antarctic Ozone Hole

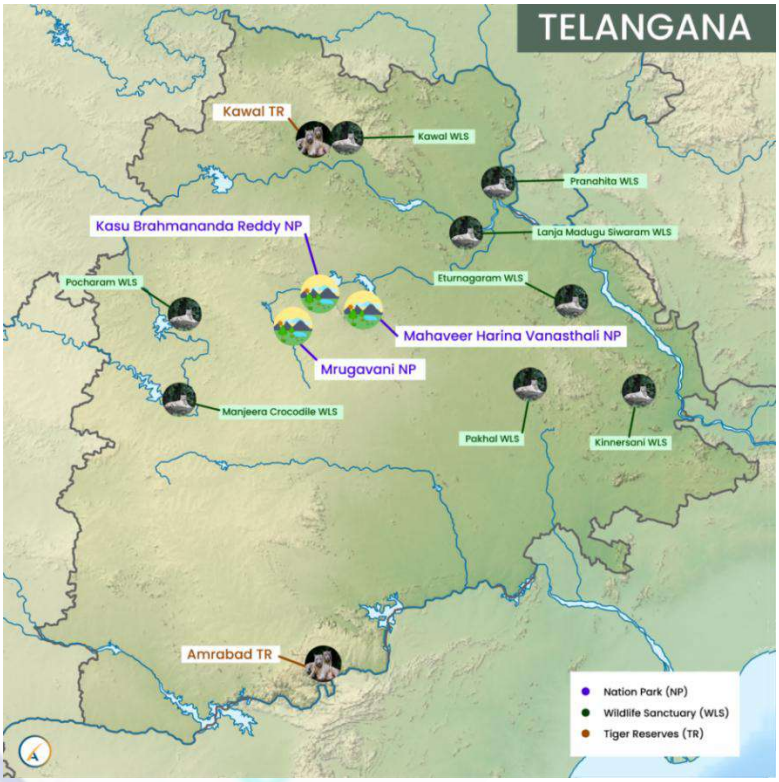
- The **Antarctic ozone hole** refers to the **seasonal thinning** of the **stratospheric ozone layer** over Antarctica during the **austral spring (September–November)**.
- Scientists use the term **"ozone hole"** for regions where ozone levels fall **below 220 Dobson Units (DU)**, not because ozone disappears entirely, but because concentrations drop far below normal.
- The ozone hole size fluctuates yearly depending on **stratospheric temperature** and **volcanic eruptions**
- **Reasons for Ozone Holes Over Antarctica-** Polar Vortex, Polar Stratospheric Clouds, Sunlight, Concentration of Ozone Depleting Substances
- **Montreal Protocol (1987)** and its Kigali Amendment credited for halting further depletion and aiding gradual recovery.
- The Antarctic ozone hole closed unusually early in 2025, offering one of the strongest signs yet that the ozone layer is on a steady path to long-term recovery.

2.37 Earth Summit 2025 (PIB)



- Union Home & Cooperation Minister inaugurated EARTH Summit 2025 in Gandhinagar, launching 13+ digital services under Sahakar Sarathi, including Digi Kisan Credit Card (KCC), Cooperative Governance Index, and the World's Largest Grain Storage Application.
- T he EARTH Summit series aims to build a **national policy framework for rural development** by integrating learnings from its three editions, first held in Hyderabad, then in Gandhinagar, and later in Delhi.
- Jointly organized by the National Bank for Agriculture and Rural Development (NABARD) and the Internet and Mobile Association of India (IAMAI),
- The summit places strong emphasis on reviving Gandhian Gram Swaraj, ensuring that villages remain at the heart of India's development strategy.
- It also reaffirmed that **strengthening cooperatives** is essential for accelerating growth.

2.38 Eturnagaram Wildlife Sanctuary



- Eturnagaram Wildlife Sanctuary is one of Telangana's oldest protected areas, known for its rich Deccan Plateau ecosystem, diverse wildlife, and unique cultural–ecological heritage.
- On the banks of river Godavari
- Lies close to the Telangana–Maharashtra–Chhattisgarh tri-border region.
- Fauna: Tigers, leopards, gaurs, sambar, chital, blackbuck, nilgai, wolves, pythons, antelopes.
- Flora: Dominated by Teak (Tectona grandis) and mixed dry deciduous vegetation.
- Fauna: Tigers, leopards, gaurs, sambar, chital, blackbuck, nilgai, wolves, pythons, antelopes.
- Flora: Dominated by Teak (Tectona grandis) and mixed dry deciduous vegetation.

2.39 National Testing Agency (PIB)

- Autonomous and self-sustained premier testing organization.
- Registered as: A Society under the Indian Societies Registration Act, 1860.
- Nodal Ministry: Ministry of Education (MoE).
- Reduce burden on educational institutions.
- Functions:
  - Develop high-quality assessment tools.
  - Conduct exams in CBT (Computer-Based Mode).
  - Ensure fair and leak-proof testing through item banking, psychometric analysis, and test equating.

2.40 Sin Goods — Definition & Rationale

- "Sin goods" (also called "demerit goods") are items considered harmful to health or socially undesirable — e.g. tobacco, pan-masala, sugary / carbonated drinks, and luxury or high-end goods.
- Governments tax them at higher rates for two reasons:
  1. To **discourage consumption** (public health & social cost externalities)
  2. To **raise revenue for welfare / public-good expenditure**
- "Sin goods" (also called "demerit goods") are items considered harmful to health or socially undesirable — e.g. tobacco, pan-masala, sugary / carbonated drinks, and luxury or high-end goods.

2.41 UN Environment Assembly (UNEA-7)

- UNEA-7 is the world's highest environmental decision-making forum, convened under the UN Environment Programme (UNEP). It brings together all UN member states to negotiate resolutions and chart global environmental policy.
- HQ: Nairobi, Kenya.
- UNEA was created in 2012 after the Rio+20 Conference to elevate environmental diplomacy to the same status as UN bodies on peace and development.
- Theme of UNEA-7 (2025): "Advancing sustainable solutions for a resilient planet."
- **Aim:**
  - To secure a coherent global environmental agenda for 2026–2030.
  - To approve UNEP's Medium-Term Strategy (MTS) and align it with global treaties.

2.42 UPI becomes world's Largest Real-Time Payment System (PIB)

- The IMF has officially recognised India's Unified Payments Interface (UPI) as the world's largest real-time retail payment system by transaction volume.
- UPI accounts for 49% of all global real-time digital payments, far ahead of Brazil, Thailand and China.
- UPI (Unified Payments Interface) is India's instant, real-time, interoperable payments system that enables bank-to-bank transfers using a mobile phone.
- It is operated by NPCI (National Payments Corporation of India) and regulated by the Reserve Bank of India (RBI).

Key Features of UPI:

- **Real-time payments**: Money transfers in under 5 seconds, 24×7.
- **Interoperability**: Works across banks, apps, QR codes and merchants.
- **Low-cost / Zero MDR**: Ensures mass adoption among small businesses and consumers.
- **Scalable architecture**: Handles billions of transactions per month.
- **Versatility**: Supports P2P, P2M, autopay, credit line on UPI, RuPay linkage, and international acceptance.

2.43 India International Science Festival (IISF) 2025 (PIB)

- The 11th edition of the India International Science Festival (IISF) 2025 commenced in Panchkula, Haryana.
- Theme of 2025 IISF: "Vigyan Se Samruddhi: for Aatmanirbhar Bharat"
- Organised By: Ministry of Earth Sciences (MoES), in coordination with Indian Institute of Tropical Meteorology (IITM), Pune.
- Launched in **2015**, it has grown into one of India's leading platforms for scientific collaboration, **innovation, outreach, and public engagement.**
- To highlight India's growing position as a **global science and technology leader, strengthen India's science culture,** expand public engagement, and support national goals

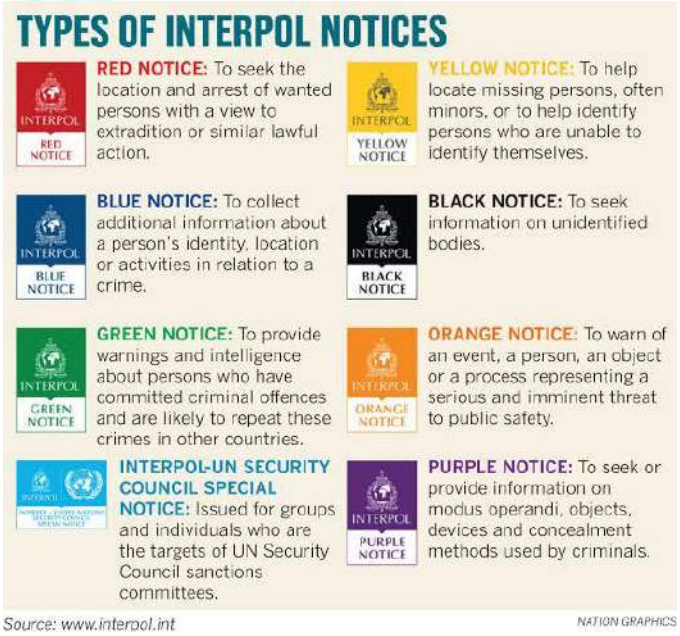
in research, innovation and talent development.

2.44 Removal of a High Court Judge

- **Constitutional Basis**
  - Article 217(1)(b) – A High Court judge can be removed on grounds of proved misbehaviour or incapacity.
  - Article 218 – Provisions for removal of HC judges are the same as Article 124(4) for Supreme Court Judges.
- Only two grounds: Proved misbehaviour, Incapacity
- Process: Removal requires a motion in Parliament, same as for SC judges.
- Motion can be introduced: In Lok Sabha → with signatures of 100 MPs, or In Rajya Sabha → with signatures of 50 MPs.
- After admission, an inquiry committee is formed under the Judges (Inquiry) Act, 1968.
- Committee includes: One Supreme Court judge, One Chief Justice of a High Court, One distinguished jurist.
- Committee investigates charges → submits report.
- If charges are proved, each House must pass the motion: By a special majority (Majority of total membership, and 2/3rd of members present and voting).
- After passage in both Houses → sent to the President, who issues an order for removal.

2.45 Blue Corner Notice

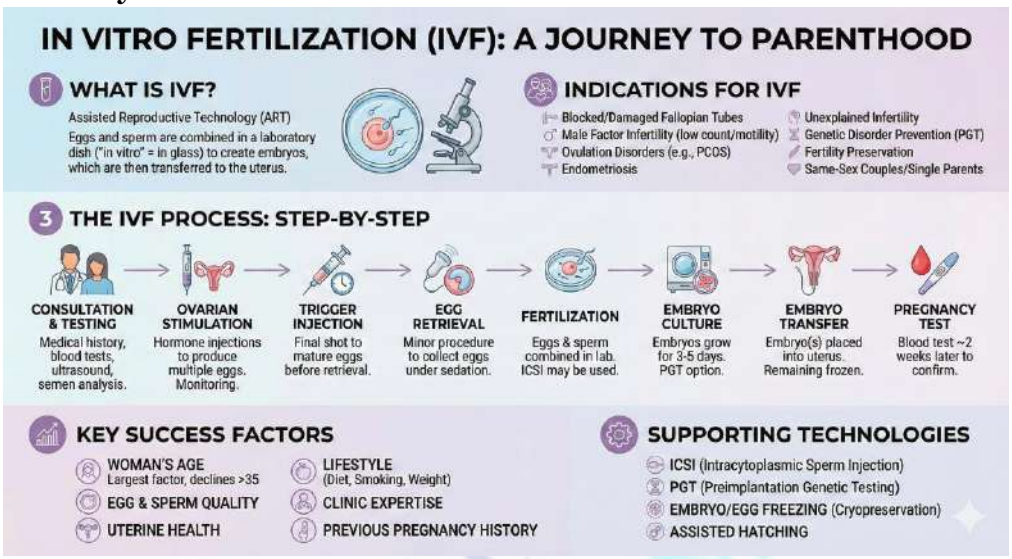
- **Issuing Authority- Interpol**.
- Specifically classified as an **Interpol "Blue Notice"**.
- **Purpose:** To **collect additional information** about a person: Identity, Location, Activities
- Useful when a person is **missing**, **wanted for investigation**, or **linked to a crime**, but details are incomplete.
- **It is NOT- Not an arrest warrant or Not equivalent to Red Corner Notice** (which seeks arrest/extradition).
- Can be Requested by a member country's **National Central Bureau (NCB)**.



- In India, this is issued through the **CBI (Interpol NCB-India)**.
- It is a **Non-binding international alert**.
- Shared with all 196 Interpol member states.

2.46 In-vitro Fertilization (IVF) Technology

- **In vitro = "outside the body."**
- **IVF is an assisted reproductive technology (ART) where fertilization occurs outside the human body, in a laboratory.**
- **In-Vitro Fertilization (IVF)** is one of the most widely used **Assisted Reproductive Technologies (ART)** for treating infertility.



  - In IVF, a woman's eggs are fertilized by sperm **outside the body in a laboratory**, and the resulting embryo is then **transferred into the uterus** to achieve pregnancy.
  - IVF is commonly used when natural conception is not possible due to **blocked fallopian tubes, low sperm count, ovulation disorders, endometriosis, age-related infertility, or unexplained infertility**.

2.47 DHRUV Helicopter

- Dhruv (meaning **Pole Star**) is an **Advanced Light Helicopter (ALH)** indigenously designed and manufactured by **Hindustan Aeronautics Limited (HAL)**.
- Designed for both **military and civilian roles** (utility, transport, reconnaissance, medevac).
- India is among the **few nations with capability to design & build such helicopters**.

- **Category:** Light multi-role helicopter.
- **Crew:** 2 pilots.
- **Max Take-Off Weight:** ~5500 kg (5.5 tonne class).
- **Speed:** Max ~290 km/h; cruise ~253 km/h.
- **Service Ceiling:** ~5990 m (≈20,000 ft).
- **Range:** Up to ~810 km with max fuel & reserves.
- Powered by **twin engines** (Shakti engines developed with Safran).

2.48 National Mission on Edible Oils (NMEO)- PIB

- **Aim:** Reduce India's dependence on **imported edible oils**, especially palm oil.
- Centrally Sponsored Scheme
- **Objective:** Achieve self-reliance in edible oils through: Expanded cultivation, Increased productivity & Oil palm processing infrastructure.
- **Two Sub-Missions**

1. **Oil Palm (major component)**
2. **Traditional Oilseeds (soybean, mustard, groundnut, sesame, sunflower)**

- **Key Features:**
  - **Price Assurance:** First-time introduction of Viability Price (VP) to protect farmers from international CPO price fluctuations.
  - **Increased Subsidies:** Substantially hikes assistance for planting material (from Rs. 12,000/ha to Rs. 29,000/ha) and maintenance.
  - **Rejuvenation Support**: Special assistance of Rs. 250 per plant for old garden rejuvenation.
  - **Focus Regions:** Special emphasis on the North-Eastern states and traditional growing states like Andhra Pradesh and Telangana.
- **Key Targets:**
  - Area Expansion: Bring 6.5 lakh hectares under oil palm plantations by 2025-26.
  - Production Targets: 11.20 lakh tonnes CPO by 2025-26 and 28 lakh tonnes CPO by 2029-30.
  - **Consumption Awareness:** Maintain a consumption level of 19 kg per person per annum till 2025-26.

2.49 Deepavali Inscribed on UNESCO'S Intangible Cultural Heritage list- PIB

- The UNESCO Representative List of the Intangible Cultural Heritage of Humanity highlights and preserves living cultural traditions, practices, and expressions that communities value as part of their identity.
- Recognises and safeguards living cultural traditions practised by communities worldwide.
- Aims to promote cultural diversity, identity, and continuity of heritage.
- Encourages international cooperation for preserving intangible cultural heritage.
- Includes festivals, rituals, performing arts, traditional crafts, oral traditions, and community practices.
- Helps raise global awareness about the importance of protecting cultural knowledge and traditions.
- Ensures that these heritage elements are transmitted to future generations sustainably....

UNESCO Intangible Cultural Heritages of India

Name	Type	Region/state	Description
Kutiyattam	Performing arts	Kerala	Koodiyattam or Kutiyattam is performed by Chakyar and Nangyaramma castes of Kerala. It is a performing art that dates back to Sangam era.
Tradition of Vedic chanting	Oral literature	Whole India	Vedic chanting is chanting of Sanskrit mantras or pathas. It is also a part of Sanskrit or Vedic study memorization.
Ramlila	Festival	Whole India (mainly North India)	It is a re-enactment of God Rama's life according to Ramayana.
Ramman	Festival	Salur Dungra, Uttarakhand	It is a festival of the Garhwali people of Salur Dungra village of Chamoli district. Not performed anywhere in the Himalayas.
Chhau dance	Performing	West	*Purulia Chhau*, *Saraikela Chhau* and *Mayurbhanj*

	arts	Bengal, Jharkhand and Odisha	*Chhau* are various styles of the dance.
Kalbelia	Performing arts	Rajasthan	Kalbeliya is a snake charming tribe. They perform dance on traditional music.
Mudiyettu,	Performing arts	Kerala	It is a dance drama that enacts stories and tales of a battle between Kali and Darika.
Buddhist chanting of Ladakh	Oral literature	Ladakh	It refers to the recitation of sacred Buddhist texts mainly performed by various sects such as Kagyud, Nyngma, Geluk, and Shakya.
Sankirtana	Oral literature and performance	Manipur	It refers to narration of Vaishnava God Krishna's story through singing, drumming and dancing.
Traditional brass and copper craft of utensil.	Handicrafts	Jandiala Guru, Punjab	Thateras are artisan cast of Punjab who makes brass and copper craft utensils.
Navroz	Festival	Whole India	Navroz in India is mainly celebrated by Parsi community.
Yoga	Performance	Whole India	Yoga is physical and spiritual practice originated in Ancient India. Every year 21 June is celebrated as International Yoga Day.
Kumbh Mela	Festival	Cities of Haridwar, Prayagraj, Nashik-Trimbak and Ujjain	Kumbh Mela is held every 12 year on rotation.
Durga Puja in Kolkata	Festival	Kolkata, West Bengal	It is a festival of worshipping of Goddess Durga.
Garba of Gujarat	Festival	Gujarat	It is a form of dance and performed on festivals and occasions.
Deepavali	Festival	All over India	

2.50 CITES-50th Anniversary

CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) is a legally binding multilateral treaty regulating international trade in wild animals and plants to ensure it does not threaten species survival.

- Membership: **185 Parties** (as of 2025), making it one of the world's largest conservation agreements.
- Operates through three Appendices (I, II, III) providing graded trade restrictions
- **Appendix I:** Lists species threatened with extinction.
    - **Trade Rule:** International commercial trade is generally prohibited, allowed only in exceptional, non-commercial cases (e.g., scientific research) with special permits. **Examples:** Tigers, gorillas, many sea turtles, orchids.
- **Appendix II:** Lists species not necessarily threatened but could become so if trade isn't controlled.
    - **Trade Rule:** Trade is allowed but must be strictly regulated to ensure it's legal,

sustainable, and traceable. **Examples:** Hippos, most vicuñas, many rosewoods, most parrots.

- **Appendix III:** Lists species where one country requests help from others to control trade due to local exploitation.
    - **Trade Rule:** Requires permits from the listing country and proof of legal origin; countries can add or remove species unilaterally. **Examples:** Specific populations of monkeys, birds, or plants that one nation wants help protecting.

2.51 Boreendo

UNESCO has inscribed Pakistan's Boreendo, a rare clay vessel-flute linked to the Indus Valley musical tradition, on the Intangible Cultural Heritage in Need of Urgent Safeguarding list.

The Boreendo is a spherical clay vessel-flute, producing mellow, breathy tones used in folk melodies, pastoral songs and winter gatherings in Sindh.

- **Characteristics:**
    - **Terracotta Craft**
    - **Spherical Vessel Design**
    - **Tilt-Based Sound Control**
    - **Community Decoration**
    - **Haunting Acoustic Tone**
    - **Oral Transmission of Skills**
    - **Cultural Symbolism**

2.52 Sujalam Bharat App (PIB)

- Sujalam Bharat App is a **digital platform** launched to support governance and monitoring of **rural drinking water supply systems** under the Jal Jeevan Mission.
- The app was **launched** by the **Ministry of Jal Shakti**
- It provides **real-time information** on water supply assets, water quality, infrastructure condition, and service reliability for rural drinking water schemes.
- Every rural water scheme and its service area receive a **unique Sujalam Bharat-Sujal Gaon ID**.
- The platform has been developed with technical support from the **Bhaskaracharya National Institute for Space Applications and Geo-informatics (BISAG-N)**.
- Enables **real-time monitoring** and management of infrastructure from source to household under **Jal Jeevan Mission**.
- It is integrated with PM Gati Shakti GIS for precise geospatial mapping of water networks, asset inventory, water quality data, and community feedback.

2.53 PM Dhan-Dhaanya Krishi Yojana (PIB)

- PMDDKY (2025–26 to 2030–31) is a comprehensive farm programme designed to enhance productivity, promote sustainable practices, and improve livelihoods.
- It converges 36 existing schemes from 11 departments.
- The fund is allocated with 40% for subsidies, 30% for infrastructure, 20% for loans, and 10%

for training and market support.

- It aims to boost agricultural productivity, promote crop diversification, enhance post-harvest storage and value addition, support women and youth in allied sectors, and achieve self-sufficiency in foodgrains, pulses, and oilseeds.
- District Selection Criteria: Districts are selected based on low crop productivity (below national averages), moderate cropping intensity (under 1.55 crop cycles per year), and low credit access (typically below 30% farmer coverage).
- Implementation Structure: Each selected district will establish a District DDKY Samiti, chaired by the District Collector, to implement the District Agriculture Development Plan (DADP), with oversight provided by 100 Central Nodal Officers (primarily Joint Secretaries).

2.54 Gaganyaan

- *Gaganyaan* is **India's first human spaceflight mission** to send Indian astronauts (Vyomanauts) into Low Earth Orbit (LEO) and bring them back safely.
- The mission is being executed by the Indian Space Research Organisation (ISRO) under the Department of Space.
- Mission Objective: To demonstrate safe human spaceflight capability by sending astronauts into orbit (about 400 km altitude) for three days and returning them safely to Earth.
- Key Technologies: Includes human-rated launch vehicle (LVM3/HLVM3), life support systems, crew module, crew escape system, and parachute recovery system for splashdown.
- The spacecraft will orbit at roughly **300–400 km altitude** for **~3 days**.
- The mission plans to carry three Indian astronauts (Vyomanauts).
- Launch Vehicle: The mission will use LVM3 (Launch Vehicle Mark-3) — India's heavy-lift rocket — suitably human-rated for crewed flights.

2.55 Q-Day

- Q-Day refers to the hypothetical future moment when **quantum computers become powerful enough to break modern cryptographic systems**, especially **public-key encryption** (RSA, ECC). It marks a major cybersecurity risk event.
- **Why is it Significant?**
  - Quantum algorithms like Shor's algorithm can crack RSA/ECC in seconds.
  - Threatens national security, banking, defence communications, digital identity systems, and internet encryption.
  - Data can be harvested today and decrypted later ("store-now, decrypt-later" threat).

2.56 Western Tragopan

Commonly Called: "**Jujurana**" (King of Birds) in Himachal Pradesh.

- **Conservation Status: IUCN:** Vulnerable
  - **Wildlife (Protection) Act, 1972:** Schedule I
  - **CITES:** Appendix I
- **Habitat:**
  - Endemic to the **Western Himalayas**
  - Found mainly in **Himachal Pradesh** (especially Great Himalayan National Park), **J&K**, and parts of **Uttarakhand**
  - Prefers **dense temperate forests** with conifers, broad-leaved trees, and thick undergrowth.
- **Key Features:**
  - Highly **secretive and shy pheasant species**
  - Males have a **black head, bright red throat wattle**, and **white-spotted plumage**
  - Ground-dwelling; roosts on trees.

2.57 Hybrid Mutual Fund

- Funds that **invest in a mix of equity, debt, and sometimes gold or other assets** to balance risk and return.
- **Regulator:** SEBI (Securities and Exchange Board of India)
- **Key Objective:** To provide **diversification**, reduce volatility, and offer **risk-adjusted returns** by combining asset classes.
- They are also known as asset allocation funds because they follow a pre-decided investment pattern.
- Hybrid funds are preferred because they spread risk across different assets, show lower ups and downs than pure equity funds, and give more stable returns.

2.58 Diving Support Craft (PIB)

- Indigenously designed and built **Diving Support Craft (DSC)**
- **Service**: **Indian Navy**
- **Role**: Supports **deep-sea diving and submarine rescue operations**
- **Builder**: **Hindustan Shipyard Limited (HSL), Visakhapatnam**
- **Design**: Indigenous design under **Make in India / Atmanirbhar Bharat** initiative.
- Underwent comprehensive hydrodynamic analysis and model testing at NSTL, Visakhapatnam.
- **Primary Functions**:
  - Deep-sea **saturation diving operations**
  - **Submarine rescue support**
  - Underwater **inspection, repair and maintenance**
  - Deployment of **divers and Remotely Operated Vehicles (ROVs)**
  - Salvage and underwater engineering tasks
- **Key Features**:
  - Equipped with **Dynamic Positioning System (DP)** for precise station-keeping

- Advanced **diving systems** with decompression chambers
- Onboard medical facilities for divers
- High endurance for prolonged operations at sea

2.59 India's First Indigenous Hydrogen Fuel Cell Vessel (PIB)

- **Type**: **Hydrogen Fuel Cell–powered Electric Vessel**
- **Status**: **India's first indigenously developed** vessel of its kind
- **Built by**: **Cochin Shipyard Limited (CSL)**
- **Developed for**: **Kochi Water Metro Project** (Kerala)
- **Support/Collaboration**: Indigenous ecosystem involving Indian PSUs and technology partners
- **Propulsion System**: Uses a **Low Temperature Proton Exchange Membrane (LT-PEM)** fuel cell system.
- Produces **electricity from stored hydrogen**, with **only water vapor as a byproduct** — meaning virtually **zero emissions** (only water vapor).
- **Key Features**:
  - **Zero carbon emissions** at point of use
  - **Silent operation** and reduced vibration
- **Fuel Cell Technology**:
  - Converts hydrogen into electricity through electrochemical reaction
  - By-product: **Water**

2.60 Year End Review-2025: Ministry of Culture(PIB)

- The **Ministry of Culture** released its **Year-End Review for 2025**, showcasing a landmark year filled with **major cultural festivals, heritage preservation efforts**, and large-scale public participation.
- Some of the initiatives taken/mentioned in the review:
  - **Kashi Tamil Sangamam 3.0:** It is a cultural initiative that celebrates the **deep-rooted historical and cultural ties between Tamil Nadu and Kashi**, strengthening their ancient civilizational bond.
  - **Revival of Kambh Ramayana Tradition:** The **Kamba Ramayana**, also known as **Ramavataram,** is a prominent 12th-century CE Tamil epic composed by the poet **Kambar**.
  - **Kalagram at Mahakumbh 2025: Kalagram** is a cultural village established by the Ministry of Culture for the **Mahakumbh 2025** in Prayagraj.
  - **UNESCO Recognition for Maratha Military Landscapes**: India secured the inscription of the Maratha Military Landscapes as its 44th UNESCO World Heritage Site, raising India's global rank to 6th in number of World Heritage properties.
  - **Gyan Bharatam:** A national initiative to preserve, digitise, and disseminate India's manuscript heritage, was launched at the first **Gyan Bharatam International Conference in New Delhi.**
  - **Tribal Business Conclave 2025:** The conclave showcased tribal arts, literature, and entrepreneurship, aligning with **Janjatiya Gaurav Varsh.**
  - **Project Mausam:** The Archaeological Survey of India (ASI) hosted a national workshop in New Delhi to strengthen research on maritime cultural routes and

safeguard ocean-linked cultural landscapes in the Indian Ocean region.

2.61 Bluebird-6

- ISRO will launch BlueBird-6, **the heaviest American commercial communication satellite (6.5 tonnes) ever to be launched by India**, aboard the LVM3 rocket. Also, the heaviest satellite ever to be launched by India.
- **Primary Objective**:To enable **direct-to-mobile (Direct-to-Cell) broadband connectivity** from space **without ground-based towers**.
- Uses a **large phased-array antenna** capable of connecting **standard smartphones** directly to satellites.
- Supports **4G/5G non-terrestrial network (NTN)** technology.
- **Orbit**:**Low Earth Orbit (LEO)** – suitable for low latency communications.
- It will have the largest commercial phased array antenna in LEO: ~2,400 sq ft once deployed.
- Block-2 series: 3.5× larger than BlueBirds 1–5 and 10× higher data capacity
- Provides up to 10,000 MHz bandwidth per satellite.
- Enables non-continuous direct-to-device connectivity in areas without terrestrial networks.
- Launch Vehicle LVM3 (Bahubali Rocket): India's heaviest-lift launch vehicle, capable of placing 8,000 kg into LEO and 4,000 kg into GTO, and the designated launcher for Gaganyaan human spaceflight missions.

2.62 UNESCO has inscribed "Italian cooking" on its Intangible Cultural Heritage List

- Italy Becomes First Country to Win UNESCO Recognition for Its National Cuisine
- A historic UNESCO recognition that declares Italian cooking—not a single dish, but the entire national culinary tradition—as an element of humanity's intangible cultural heritage.
- UNESCO's Intergovernmental Committee for the Safeguarding of Intangible Cultural Heritage, during the 20th session held in Delhi.

2.63 MahaCrimeOS AI

- **MahaCrimeOS AI** is an **Artificial Intelligence–based crime analytics and investigation support platform**.
- **Launched by**: **Maharashtra Police**
- **Objective**:
  - To enhance **crime detection, prediction and prevention** using AI and data analytics.
- **Key Features**:
  - **Predictive policing** using historical crime data
  - **Pattern and link analysis** to identify crime networks
  - AI-enabled **suspect profiling** and hotspot mapping
  - Integration with **CCTV feeds, FIR databases and criminal records**
- **Technology Used**: **Artificial Intelligence (AI)Machine Learning (ML), Big Data analytics**

2.64 Core Inflation

- **Measure of inflation that excludes volatile items such as food and fuel from the headline inflation index.**
- **Purpose:** To capture the underlying, long-term inflation trend in an economy**.**
- Calculated using CPI (Consumer Price Index) excluding food and fuel components.
- Closely monitored by the Reserve Bank of India (RBI).

Why Exclude Food & Fuel?

  - Prices are influenced by seasonal factors, supply shocks and global commodity prices, making them volatile.

- **Difference from Headline Inflation:**
  - Headline inflation includes all items in CPI (food, fuel, housing, etc.).
  - Core inflation gives a cleaner signal of persistent inflation.
- **Limitations:**
  - Underestimates inflation felt by consumers when food and fuel prices rise sharply.
  - Less relevant for poorer households where food forms a large share of consumption.

2.65 Ozempic

- Ozempic is a prescription injectable drug used primarily for Type-2 Diabetes Mellitus.
- **Active Ingredient:** Semaglutide.
- **Drug Class:** GLP-1 (Glucagon-Like Peptide-1) receptor agonist
- **Mechanism of Action: Mimics GLP-1 hormone** → Increases insulin secretion, Decreases glucagon release, Slows gastric emptying, Reduces appetite.
- **Additional Effects:** Leads to weight loss (off-label use for obesity in many countries)
- **Administered as:** Once-weekly subcutaneous injection.
- **Manufacturer:** Novo Nordisk (Denmark)
- **Health Significance:** Improved glycaemic control in diabetic patients, Reduced cardiovascular risk in high-risk individuals
- **Side effects:** nausea, vomiting, gastrointestinal discomfort, High cost and accessibility issues, Ethical concerns over cosmetic/weight-loss misuse

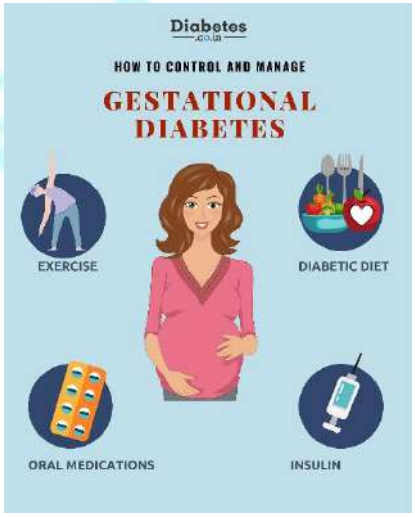
2.66 Adichanallur

- **Thoothukudi (Tuticorin) district, Tamil Nadu**, on the banks of the **Thamirabarani River**
- **Period**: **Iron Age (c. 1000 BCE–300 BCE)**
- Associated with **megalithic culture**
- One of India's oldest Iron Age archaeological sites, known for extensive urn burials, skeletal remains, metal artefacts, and early cultural evidence of South India.
- About **24 km from Tirunelveli**, and close to **ancient port town Korkai**, indicating maritime connectivity.
- Large **urn burials**, skeletal remains of mixed ethnic origins, pottery, iron and bronze artefacts.
- **169 burial urns** unearthed in the 2004–05 ASI excavations.
- Early excavations uncovered **gold diadems, pottery, weapons**, and **over 4,000 antiquities.**

2.67 Ladli Behna Scheme

- **Launched by:** Government of **Madhya Pradesh**
- For economic empowerment, social security and improvement of health & nutrition of women.
- **Target Beneficiaries:**
    - Married women, widows, divorced and abandoned women
    - **Age group: 21–60 years**
    - Belonging to economically weaker households
- **Financial Assistance- ₹1,000 per month** initially. Enhanced to **₹1,250 per month**
- **Mode of Transfer: Direct Benefit Transfer (DBT)** to beneficiary's bank account
- **Governance Aspect:** Uses **Aadhaar-based verification** and DBT mechanism

2.68 Gestational Diabetes



- A condition of **high blood glucose** detected **for the first time during pregnancy** (usually 2nd or 3rd trimester).
- **Cause:** Hormonal changes in pregnancy leading to **insulin resistance**.
    - **Risk Factors:** Obesity or overweight, Family history of diabetes, Advanced maternal age, Previous history of GDM or large baby (macrosomia)
- **Diagnosis:**
    - **Oral Glucose Tolerance Test (OGTT)**
    - In India, **DIPSI method** (single-step, non-fasting test) widely used.
- **Health Impacts:**
    - **On Mother:** Increased risk of preeclampsia, caesarean delivery, Higher chances of developing **Type-2 diabetes** later.
    - **On Child:** High birth weight, birth complications, Risk of obesity and diabetes in later life
- **Post-Pregnancy:** Blood glucose usually returns to normal after delivery.
- The results of the STRiDE study, conducted among 2,700-odd pregnant women has found out that early gestational diabetes affects about one in five pregnant women in India.

2.69 Ramappa Temple

- **Location: Palampet**, Mulugu district, **Telangana**
- **Also Known As: Rudreshwara Temple**
- **Built During: Kakatiya dynasty**
- Construction started in **1213 CE** during the reign of **Ganapati Deva**
- **Dedicated To: Lord Shiva** (as Ramalingeswara)
- **UNESCO Status:** Declared a **UNESCO World Heritage Site (2021)**
- **Architectural Style: Kakatiya style of architecture**
- Built on a **star-shaped platform (stellate plan)**
- Use of **sandbox foundation** technique for earthquake resistance
- **Unique Features:**

  - **Floating bricks** used in the shikhara (lightweight porous bricks)
  - Exquisite **carvings of dancers and musicians**, reflecting the *Perini dance*
  - Highly detailed **lathe-turned pillars**
- **Material Used:** Red sandstone for walls, Black basalt for pillars and sculptures
- **Associated Water Body: Ramappa Cheruvu** (temple tank) located nearby

2.70 Coal Linkage for Seamless, Efficient & Transparent Utilisation (CoalSETU) (PIB)

- A **digital platform / system** for management and monitoring of **coal linkages** in India.
- **Ministry: Ministry of Coal**, Government of India.
- **Objective:**
  - Ensure **seamless, efficient and transparent** allocation and utilisation of coal.
  - Improve **ease of doing business** for coal consumers (especially power sector).

- **Key Functions:**
  - End-to-end **online management of coal linkages**.
  - Real-time monitoring of **coal allocation, supply and utilisation**.
  - Single-point interface for stakeholders.
  - Allows any industrial consumer to participate in coal linkage auctions.
  - Existing NRS auctions for cement, sponge iron, steel, aluminium, CPPs will continue.
  - These users may also bid in the CoalSETU window.
- **No End-Use Restrictions:**
  - Coal can be used for **own consumption**, washing, or **export (up to 50%)**.
  - **Coking coal excluded** from this window.
  - **Traders barred** from bidding to prevent speculative hoarding.
- **Export Flexibility:**
  - Companies may export up to **50% of allotted coal**.
  - Washed coal allowed for export.
  - Coal can be shared across **group companies** as per operational needs.

2.71 FDI in insurance to be raised to 100%

- The Union Cabinet has approved a proposal to raise the FDI limit in insurance companies from 74% to 100%, to be implemented through the Insurance Laws (Amendment) Bill, 2025.
- Foreign Direct Investment (FDI) is when a non-resident investor acquires an equity stake (≥10%) in an Indian company, with a lasting interest and some degree of control/management influence.

Foreign investor brings capital into an Indian company through: Subscription to shares, Mergers, demergers, amalgamations, Share purchase from existing residents etc.
FDI is regulated under **FEMA**, sectoral caps, pricing guidelines, entry routes and conditions laid down by the **Government / RBI**.
In insurance, 100% FDI means a foreign insurer can now hold **full ownership (subject to Indian regulatory conditions)** in an Indian insurance company.
Two FDI Routes in India:

1. **Automatic Route-** No prior Government or RBI approval required.
   - Investment must comply with sectoral caps, FEMA rules, SEBI/RBI norms etc.
   - Investor only needs to report and file prescribed forms.

2. **Government Route-** Prior **Government approval** is mandatory.
    - Application is made through the **Foreign Investment Facilitation Portal**.
    - Approval may carry specific conditions (lock-in, reporting, security conditions, etc.).

Prohibited Sectors under FDI: Lottery business, online lotteries, Gambling and betting, including casinos, Chit funds, Nidhi companies etc.

2.72 Tapanuli orangutans

- **Discovery:** Identified as a **separate species in 2017** (newest great ape species).
- **Geographical Range: Batang Toru forest**, **Sumatra, Indonesia**
- **Smallest distribution range** among all orangutan species.
- **Conservation Status:**
    - **Critically Endangered – IUCN Red List**
    - Population estimated at **< 800 individuals**.
- **Distinct Features:**
    - Smaller skull, frizzier hair
    - Genetic and behavioural differences from Bornean and Sumatran orangutans
- **Protection:** Endemic to Indonesia; protected under national conservation laws.

2.73 Project Suncatcher

- **Project Suncatcher** is a *research "moonshot" initiative* by **Google** to explore building **AI data centres in space** using **solar-powered satellites** — effectively moving large-scale computation *off Earth to orbit.*
- Designed to address **soaring energy requirements of AI compute** on Earth by tapping into **near-continuous solar energy in space**, which can be far more abundant than on the ground.
- Satellites powered by high-efficiency solar arrays to run compute hardware in orbit.
- It is part of Google's *moonshot philosophy* — tackling long-term, high-risk technological challenges (similar to early big bets like Waymo/quantum computing).
- Could reduce environmental impact on Earth's energy grid and water use
- **First prototypes:** Google plans to launch **two prototype satellites by early 2027** in partnership with Planet (Planet Labs). These will test core technologies (power, chips, communications) in **low Earth orbit (LEO)**.

2.74 Global Capability Centres (GCCs) (PIB)

- India is emerging as the world's leading destination for Global Capability Centres (GCCs), With over 1,700 GCCs now operating & projected revenues reaching USD 105 billion by 2030, the sector is becoming a pillar of India's service-led growth.
- Global Capability Centres (GCCs), earlier known as Global In-house Centres (GICs), offshore units set up by multinational companies.

- Unlike outsourcing, GCCs are **captive centres fully owned and controlled** by the parent company.
- India is the largest GCC hub globally.
- Hosts 1,500+ GCCs across sectors (IT, BFSI, Pharma, Manufacturing, Semiconductors).
- Major clusters: Bengaluru, Hyderabad, Pune, Chennai, NCR.
- Economic Significance for India- Boosts high-skill employment, Strengthens innovation ecosystem, Supports services exports & forex earnings, Aids transition from IT services to knowledge economy etc.

2.75 Pax Silica Initiative

- **Pax Silica** is a **U.S.-led strategic initiative/coalition** aimed at building a **secure, resilient, and innovation-driven global silicon (tech) supply chain** — from **critical minerals and energy** to **semiconductors, AI infrastructure, advanced manufacturing and logistics**.
- It aims to **reduce China's dominance and counter coercive dependencies** across **critical minerals,** energy inputs, **semiconductors**, advanced manufacturing, AI infrastructure, and logistics.
- Key measures under Pax Silica focus on promoting joint ventures and strategic co-investments in high-tech sectors, protecting sensitive technologies and critical infrastructure from countries of concern, and building trusted technology ecosystems.
- **Founding Members / Allies-** Includes United States as the lead and key partners such as Japan, South Korea, Singapore, the Netherlands, the United Kingdom, Israel, the United Arab Emirates and Australia.

2.76 Bondi Beach

- Location: Sydney, New South Wales, Australia
- Situated on the Tasman Sea coast (part of the South Pacific Ocean).
- About 7 km east of Sydney's central business district (CBD).
- Crescent-shaped sandy beach.
- Exposed to strong ocean swells, making it popular for surfing.
- Part of Australia's Pacific coastal geomorphology
- One of the **most famous urban beaches in the world**.
- Historically multicultural, with a strong Jewish community and migrant heritage.

2.77 National Energy Conservation Awards (NECA):

- Instituted by: Bureau of Energy Efficiency (BEE)
- Under: Ministry of Power, Government of India
- Objective: To recognise excellence in energy efficiency and conservation across sectors.
- Eligible Participants: Industries (thermal power plants, cement, steel, textiles, chemicals, etc.), Buildings (commercial, institutional, residential complexes), Transport sector, State Designated Agencies (SDAs), Municipalities & DISCOMs, Innovators & technology providers (in specific categories)
- New category introduced: Social Media Influencers & Digital Content Creators to promote behavioural change through digital outreach
- Transparent selection process: Technical Committee (headed by Member–Thermal, CEA), Award Committee chaired by Secretary (Power).

2.78 Dandami Maria Tribe

- **Region:** Predominantly found in **Bastar region of Chhattisgarh**.
- The Dandami Maria, also known as Bison Horn Maria or Khalpati Maria.
- They are a **sub-group of the Gond tribe**.
- Classified as a **Scheduled Tribe** under the Constitution of India.
- Speak **Gondi language**, belonging to the **Dravidian language family**.
- Traditionally practise **shifting cultivation (slash and burn / podu)**.
- Depend on **forest produce**, hunting, fishing and small-scale agriculture.
- Known for **strong clan system** and community-based social organisation.
- Rich tradition of **folk dances, songs and rituals**.
- Ancestor worship and **nature-centric belief system** are common.

2.79 The Great Honour (Nishan) of Ethiopia

- Highest **civilian honour** of Ethiopia.
- **Also known as**: **The Order of the Star of Ethiopia** (its highest class is the **Grand Collar**).
- Conferred for **exceptional services** to Ethiopia or for **strengthening bilateral relations** with foreign countries.
- **Recipients**: Awarded to **heads of state, heads of government**, and distinguished foreign dignitaries.
- Recently Indian Prime Minister was awarded with the award.
- **Significance**: Symbolises **Ethiopia's sovereignty, historical legacy, and diplomatic outreach**.

2.80 Apache Helicopter

- **Type**: Advanced **attack helicopter**.
- **Manufacturer**: **Boeing** (USA).
- **Variant with India**: **AH-64E Apache Guardian** (latest version).
- **Induction in India**: **Indian Air Force (IAF)** – inducted from **2019, Indian Army Aviation Corps** – separate fleet sanctioned for Army use
- **Role**: Anti-tank warfare, Close air support, Armed reconnaissance and escort missions
- **Key Features**: **Twin-engine**, all-weather, day-night combat capability, **Advanced avionics & network-centric warfare capability**
- **Special Capabilities**: Fire-and-forget missile system, Operates in **high-altitude and desert conditions**
- **Strategic Significance for India**: Enhances **offensive strike capability** along borders.

2.81 Annual Survey of Unincorporated Sector Enterprises (ASUSE) 2026 (PIB)

- The Annual Survey of Unincorporated Sector Enterprises (ASUSE) is a government statistical exercise to collect detailed data on economic and operational characteristics of unincorporated (informal) **non-agricultural enterprises** in manufacturing, trade and services sectors.
- It **excludes agricultural and construction sectors**, focusing on manufacturing, trade, and other services.
- Conducting Authority: National Statistics Office (NSO) under the Ministry of Statistics & Programme Implementation (MoSPI)
- The NSO has been conducting ASUSE annually since 2021–22.
- **Comprehensive Data Coverage:** ASUSE collects data on employment size, gross value added, emoluments, asset ownership, digital adoption (ICT usage), and loan status.

2.82 Vijay Diwas

- **Observed on**: **16 December** every year
- **Significance**: Marks **India's victory over Pakistan** in the **1971 Indo-Pak War**
- **Outcome**: Led to the **liberation of Bangladesh**
- **Historical Event**: On **16 December 1971**, about **93,000 Pakistani soldiers** surrendered
- Surrender took place in **Dhaka**
- **Instrument of Surrender**: Signed by **Lt. Gen. A.A.K. Niazi (Pakistan)** To **Lt. Gen. Jagjit Singh Aurora (India)**
- **Military Importance**: One of the **largest surrenders since World War II**
    - Demonstrated India's **strategic and military superiority**

2.83 Ethiopia

- **Region:** Horn of Africa (East Africa)
- **Capital:** Addis Ababa. Also headquarters of the African Union (AU)
- **Landlocked country** (since Eritrea's independence in 1993)
- **Major River: Blue Nile** (Abay) – originates from Lake Tana
- **Great Rift Valley** passes through Ethiopia.
- **Climate**: Tropical monsoon with highland climate in central regions
- One of the oldest civilizations in the world
- Never colonised (except brief Italian occupation, 1936–41)
- Member of **UN, AU, BRICS (joined in 2024)**

2.84 HAMMER precision-guided weapon (AASM)

- **Full Form**: **AASM – Armement Air-Sol Modulaire et à portée Étendue**
- **Popular Name**: **HAMMER** (Highly Agile Modular Munition Extended Range)
- **Country of Origin**: **France**
- **Manufacturer**: **Safran Electronics & Defense**
- **Type & Role: Precision-guided air-to-ground weapon**
- Converts **conventional unguided bombs** into **smart stand-off weapons**
- **Key Features: Modular weapon system** (guidance + range-extension kit)
    - **All-weather, day-night capability**
    - **Fire-and-forget** system
    - Can be launched from **low or high altitude**

- **Guidance Systems: INS/GPS guidance**
- **Range:** Approx. **15 km** (low altitude launch), Up to **60–70 km** (high altitude launch)
- **Compatibility-** Compatible with **Rafale fighter aircraft,** Integrated with **Mirage-2000.**

2.85 United Nations Alliance of Civilizations (UNAOC)

- **Established**: **2005**
- **Initiative of**: **United Nations**
- **Co-sponsors at launch**: **Spain and Turkey**
- **Headquarters**: **New York, USA**
- **UN Secretary-General's High Representative** heads UNAOC
- UNAOC is a United Nations initiative that seeks to improve understanding and cooperation among nations and peoples across cultures and religions, and to counter extremism through dialogue and partnership.
- **Core Areas of Work: Youth** (youth leadership, peacebuilding), **Education** (intercultural learning), **Media** (responsible reporting, countering hate speech), **Migration** (social inclusion, cohesion)
- About UNAOC 2025 (11th Edition)- Host: Saudi Arabia, Riyadh.
    - Theme: "UNAOC: Two Decades of Dialogue for Humanity—Advancing a New Era of Mutual Respect and Understanding in a Multipolar World".

2.86 World Anti-Doping Agency (WADA)

- **Nature:** International independent agency
- **Headquarters:** Montreal, Canada
- **Objective:** To **promote, coordinate and monitor** the global fight against doping in sports.
- **Formation Background:** Created after the **1998 Tour de France doping scandal**.
- **Key Functions:**
    - Frames and updates the **World Anti-Doping Code**.
    - Publishes the **Prohibited List** (updated annually).
    - Accredits **anti-doping laboratories** worldwide.
    - Oversees compliance of countries and sports bodies with anti-doping rules.
    - Promotes **scientific research, education and awareness** against doping.
- **World Anti-Doping Code:** Harmonizes anti-doping rules across sports and countries.
    - Binding on **International Federations, National Olympic Committees (NOCs)** and **National Anti-Doping Organizations (NADOs)**.
- **Prohibited List Includes:** Substances enhancing performance (e.g., anabolic agents), Methods like **blood doping and gene doping**.
- **Governance Structure:** Foundation Board and Executive Committee.
    - Equal representation from **governments and sports movement** (50:50).
- **Funding:** Shared equally by **governments and the Olympic Movement**.

- **India & WADA: National Anti-Doping Agency (NADA)** is India's nodal body.
  - India is a **signatory to the World Anti-Doping Code**.
- **Recent Relevance: India tops the world again in most dope offenders, thrice in a row.**

2.87 Exercise Ekatha (PIB)

- **Type:** Joint Military Exercise
- **Participants: India and Maldives**
- **Nature: Bilateral** exercise
- **Meaning of 'Ekatha':** Sanskrit word meaning **"together / unified"**.
- **Objective:** Enhance **interoperability** between armed forces, Strengthen **joint operational planning and coordination**.
- Promotes **regional security cooperation** in the Indian Ocean Region (IOR).

2.88 India's first AI-driven community screening programme for Diabetic Retinopathy (PIB)

- The Armed Forces Medical Services (AFMS) launched India's first AI-driven community screening programme for Diabetic Retinopathy (DR).
- The initiative uses MadhuNetrAI, an AI platform, to enable early detection and referral of diabetic eye disease at the community level.

- This is in collaboration with: Dr. Rajendra Prasad Centre for Ophthalmic Sciences (RPC), AIIMS, New Delhi & eHealth AI Unit, Ministry of Health & Family Welfare.
- **Anchored by MadhuNetrAI — a web-based AI platform that:**
  - automates screening, grading and triaging of retinal images.
  - uses retinal images from handheld fundus cameras.
  - generates **real-time data on disease** prevalence and geographic spread for policy planning.
- **Key features:**
  - Community-level deployment by trained Medical Officers, nurses and health assistants.
  - Automated triaging with referrals for vision-threatening DR to vitreo-retina specialists.
  - Real-time dashboards for prevalence and geographic mapping to aid policy planning.
  - Pilot across 7 diverse locations: Pune, Mumbai, Bengaluru, Dharamshala, Gaya, Jorhat, Kochi.
  - Integration with Non Communicable Disease programmes via district health administrations for continuity of care.

2.89 Mercy Petition

- A **formal request for clemency** made by a convict to the **President or Governor** to reduce

or pardon a sentence.

- **Constitutional Provisions:**
  - **Article 72:** Power of **President of India**
  - **Article 161:** Power of **Governor of a State**
- **President's Power (Art. 72):** Grant **pardon, reprieve, respite, remission or commutation** of punishment.
  - Applies to cases: Under **Union law,** By **court martial,** In **death sentence** cases (even under state law)
- **Governor's Power (Art. 161):** Similar clemency powers but **cannot pardon a death sentence**.
  - Applicable only to cases under **State law**.
- **Types of Clemency:**
  - **Pardon:** Completely absolves conviction and sentence.
  - **Commutation:** Substitutes a lighter punishment.
  - **Remission:** Reduces the period of sentence.
  - **Reprieve:** Temporary suspension of sentence.
  - **Respite:** Lesser punishment due to special circumstances (age, health, pregnancy).
- **Procedure:** Mercy petition is examined by the **Ministry of Home Affairs (MHA)** (for President).
  - Decision taken by the President/Governor **on aid and advice of the Council of Ministers**.
- **Judicial Review: C**lemency powers are **subject to limited judicial review**.
  - Courts can intervene in cases of **arbitrariness, mala fide or undue delay**.

2.90 Param Vir Chakra (PVC)

- **Highest wartime gallantry award of India**
- **Instituted: 26 January 1950** (with retrospective effect from **15 August 1947**)
- **Eligibility:** Awarded for **most conspicuous bravery** or **self-sacrifice** in the **presence of the enemy**.
  - Can be awarded to **personnel of Army, Navy, Air Force**, including **Territorial Army, Reserve Forces**.
  - **Posthumous awards permitted**.

- **Design & Symbolism:** Circular bronze medal.
  - **Ashoka Lion Capital** in the centre.
  - Surrounded by **four replicas of Indra's Vajra** (symbol of strength).
  - Suspended from a **plain purple ribbon**.
- **Hierarchy of Gallantry Awards: Param Vir Chakra, Mahavir Chakra, Vir Chakra**
- **Number of Awardees: 21 recipients** so far. **14 awarded posthumously**.
- On Vijay Diwas 2025, President Droupadi Murmu inaugurated the 'Param Vir Dirgha' at Rashtrapati Bhavan, where portraits of all 21 Param Vir Chakra awardees were displayed.
- This replaced portraits of British Aide-de-Camps, symbolising India's continued effort to shed colonial legacies.

2.91 Exercise Desert Cyclone (PIB)

- **Type:** Joint Military Exercise
- **Participants:** Indian Army & UAE Armed Forces
- **Nature:** Bilateral
- **Domain:** Land warfare / Joint combat operations
- **Place for 2025:** Abu Dhabi. It will be only the second edition.
- **Aim:**
  - To train jointly for sub-conventional operations under a UN mandate.
  - To prepare forces for peacekeeping, counter-terrorism and stability operations in urban environments.

2.92 DHRUV-64

- **Type:** Indigenous **64-bit microprocessor**
- **Developed by: C-DAC (Centre for Development of Advanced Computing)**
- **Key Features:**
  - **64-bit processing capability** suitable for high-performance and secure computing.
  - Designed for **strategic, defence, and critical applications**.
  - Focus on **security, reliability, and trustworthiness**.
  - Compatible with **Indian-made hardware & software ecosystem**.
- **Objectives:**
  - Reduce India's dependence on **imported semiconductor technologies**.
  - Strengthen **Atmanirbhar Bharat** in electronics and semiconductors.
  - Build an indigenous **processor-to-product ecosystem**.

2.93 Rhinoceros (Rhinos)

- Rhinos are **mega-herbivores** found in **Africa and Asia**.
- Major threats: **poaching (for horn)**, **habitat loss, fragmentation, human–wildlife conflict**.
- It is one of the oldest surviving megafauna, dating back millions of years.
- **Habitat:** Rhinos occupy diverse ecosystems depending on species: Grasslands and savannahs, Tropical and subtropical forests, Swamps, riverine areas, and shrublands.
- All rhino species are protected under **CITES Appendix I** *(except Southern White Rhino – Appendix II for South Africa & Eswatini).*

Species	IUCN Status
• **Indian Rhino**	• **Vulnerable**
• **Javan Rhino**	• **Critically Endangered (CE)**

• Sumatran Rhino	• Critically Endangered
• White Rhino	• Near Threatened (Southern) / CE (Northern)
• Black Rhino	• Critically Endangered

2.94 BRICS

- **Full Form: Brazil, Russia, India, China, South Africa**
- **Founded: 2009** (as BRIC); **South Africa joined in 2010**
- **Nature:** Informal grouping of **major emerging economies**
- **Objective:** Promote **multipolar world order**, reform of **global governance institutions**, and **South–South cooperation**.
- Represents about **40% of world population** and **~25–30% of global GDP.**
- Decisions taken by **consensus**.
- No permanent secretariat.

Institutions under BRICS- New Development Bank (NDB)

- **Headquarters:** Shanghai, China
- **First President:** K.V. Kamath (India)
- **Purpose:** Infrastructure & sustainable development financing.
- **Contingent Reserve Arrangement (CRA)-** Provides **liquidity support** during balance of payment crises.

- **BRICS Expansion (BRICS Plus)- Expanded in 2024** to include: **Egypt, Ethiopia, Iran, Saudi Arabia, UAE**
- **Aim:** Enhance **Global South representation**.
- India will serve as the rotating (pro tempore) Chair of BRICS in 2026. As Chair, India will set priorities, convene meetings, and host the annual summit for the year.

2.95 IN-SPACe

- **IN-SPACe** stands for *Indian National Space Promotion and Authorization Centre.*
- It is an **autonomous nodal agency under the Department of Space (DoS), Government of India**.
- It acts as a *single-window regulator and facilitator* for private space activities in India.
- To **promote, authorize, and supervise** space activities of private entities (non-governmental entities or NGEs).
- Part of broader space reforms to **open the Indian space sector to private players** and bring a **demand-driven model**.
- **Promotion:** Encourages Indian startups, companies, and institutions to participate in: designing & building satellites, launch vehicle development, space-based services and applications.
- **Supervision & Regulation:** Ensures activities comply with **national security**, safety norms, and international space treaties.

- **Access to ISRO Infrastructure:** Private entities can use ISRO's facilities (launch vehicles like PSLV/GSLV, tracking, testing infrastructure) on a **non-discriminatory** basis.

2.96 Deepening the Corporate Bond Market in India

- NITI Aayog has released Deepening the Corporate Bond Market in India report emphasizing that a more efficient corporate bond market.
- It is crucial for expanding market access, improving liquidity, and enhancing investor participation.
- The Corporate Bond market has expanded from Rs 17.5 trillion in FY2015 to Rs 53.6 trillion in FY2025, growing at ~12% CAGR (Compound annual growth rate).
- However, at 15-16% of GDP, it remains shallow compared to peers like South Korea (79%) and Malaysia (54%).

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2.97 Microplastic

- **Microplastics** are **plastic particles < 5 mm in size**.
- They persist in the environment due to **non-biodegradable nature**.
- **Types**
  - **Primary Microplastics-** Manufactured small plastics. Examples: Microbeads in cosmetics & toothpaste, Industrial abrasives, Pre-production plastic pellets etc.
  - **Secondary Microplastics-** Formed by **fragmentation of larger plastic items** due to UV radiation, heat, and mechanical action Examples: breakdown of plastic bags, bottles, fishing nets

- **Sources (High-Yield)-** Single-use plastics, Synthetic textiles (polyester, nylon microfibers), Tyre wear & road runoff, Paints and coatings, Packaging waste
- **Inhalable Microplastics:** They are tiny airborne plastic particles smaller than **10 micrometres (µm)** that remain suspended in the air and can be inhaled deep into the **lungs**, unlike larger microplastics that settle quickly.
- Found in: Oceans, rivers, soil, air, Polar ice, deep sea trenches, Drinking water (tap & bottled).
- Enter food chain via **bioaccumulation & biomagnification**
- **Impact on Ecosystem-** Ingested by **plankton, fish, birds, marine mammals**

2.98 Agentic AI

- **Agentic AI** refers to **AI systems that can autonomously plan, decide, and act** to achieve a given goal, with **minimal human intervention**.
- Unlike traditional AI (rule-based or prompt-response), Agentic AI **initiates actions**, uses tools, and adapts based on outcomes.
- **Key Characteristics**
  - **Autonomy** – operates without constant human input
  - **Goal-oriented behaviour** – works towards defined objective.
  - **Planning & reasoning** – breaks tasks into sub-tasks
  - **Tool use** – can call APIs, software, databases
  - **Learning from feedback** – adjusts strategies dynamically

How it is Different from Generative AI

Aspect	Generative AI	Agentic AI
Primary role	Content generation	Action execution
Autonomy	Low	High
User control	Prompt-driven	Goal-driven
Example	Chatbots, image generators	Auto-trading bots, AI assistants managing workflows

2.99 Erivan Anomalous Blue

- *Erivan Anomalous Blue* is a **butterfly species** scientifically known as *Polyommatus eriwanensis.*
- It is **endemic to Armenia**, particularly around the **Yerevan region** (Armenia capital area).
- Inhabits calcareous grasslands in Armenia.
- Found at elevations of 1,200–2,200 metres above sea level.
- One generation per year; adults are active from mid-June to mid-July.
- The larval host plant is still unknown, limiting ecological assessment.
- **IUCN status:**
  - Not listed in the Global or European IUCN Red Lists.
  - Listed as Endangered in the Red Book of Animals of Armenia (2010).
  - Distribution partly overlaps with Khosrov Forest State Reserve and Gnishik Protected Landscape.
- **Key characteristics:**
  - **Endemic and range-restricted**, making it highly sensitive to environmental change.
  - Butterflies act as **indicator species**, reflecting ecosystem health.

2.100 Chillai Kalan

- *Chillai Kalan* is the **harshest 40-day winter period** in **Kashmir Valley**, marking th e peak of winter.
- **Duration:** Begins around **21 December.** Ends around **30 January**

- **Etymology:** *Chillai* = forty. *Kalan* = major/severe (Persian origin)
- **Climatic features:**
  - **Extremely low temperatures** (often below –10°C)
  - **Frequent snowfall**
  - **Frozen water bodies** like Dal Lake and rivers
  - Reduced daylight and dense fog
- **Subsequent phases:**
  - **Chillai Khurd** (Next 20 days after Chillai Kalan): Less severe cold
  - **Chillai Bachha** (Next 10 days after Chillai Khurd): Cold gradually recedes
- **Cultural significance:**
  - Shapes local lifestyle, architecture, clothing, and food habit.
  - Popularly referenced in Kashmiri folklore and traditions

2.101 NAAT Testing for Blood

- **NAAT – Nucleic Acid Amplification Test**
- **It is a molecular diagnostic test** used to detect **viral genetic material (DNA/RNA)** in donated blood.
- **Purpose in blood testing:**
  - Screens blood for **transfusion-transmitted infections (TTIs)**
  - Identifies infections **during the window period** when antibodies are not yet formed
- **Pathogens commonly screened: HIV-1 & HIV-2, Hepatitis B Virus (HBV), Hepatitis C Virus (HCV)**
- **How it works:**
  - Amplifies viral nucleic acids using techniques like **PCR (Polymerase Chain Reaction)**
  - Can be done as **Individual Donation NAAT (ID-NAAT)** or **Mini-pool NAAT (MP-NAAT)**
- **Relevance in India:**
  - Adopted by **NBTC / NACO** guidelines for safer blood transfusion
  - Implemented in major blood banks and tertiary hospitals
  - Supports India's goal of **zero-risk blood transfusion.**

2.102 Kakori Train Action (PIB)

- Union Home Minister paid tribute to Pandit Ram Prasad Bismil, Ashfaqulla Khan, and Roshan Singh on their Balidaan Diwas (19th December), honoring their sacrifice in the Kakori Train Action that shook the foundations of British rule.
- **Organisation involved: Hindustan Republican Association (HRA)** (later became **Hindustan Socialist Republican Association – HSRA**)

Kakori Train Conspiracy

    - **Key leaders involved: Ram Prasad Bismil, Ashfaqulla Khan, Chandrashekhar Azad, Rajendra Nath Lahiri, Sachindra Nath Sanyal**
- **Objective:**
    - To seize money meant for the **British treasury**
    - To fund revolutionary activities against colonial rule
- Led to a massive crackdown on revolutionaries
- **Kakori Conspiracy Case (1925–27): Ram Prasad Bismil, Ashfaqulla Khan, Rajendra Nath Lahiri** – executed. **Sachindra Nath Sanyal** – life imprisonment. Several others received long jail terms.

2.103 RELOS Agreement

- *Reciprocal Exchange of Logistics Support (RELOS)* — *a* ***bilateral military logistics*** **agreement** between **India and Russia**.
- **Type: Military logistics support pact** (not a basing treaty).
- **Purpose:**
    - Provides **procedures for mutual logistical support** — refuelling, repairs, maintenance, provisioning and berthing.
    - Governs movement and support of **military formations, warships, and aircraft** of both countries.
    - The RELOS agreement enables mutual use of airspace, and allows port calls by naval vessels of both countries.
- Strengthens India's Indo-Pacific strategy by enabling long-range deployments using Russia's network of over 40 military bases.

2.104 Corporate Social Responsibility (CSR)

- **Legal basis in India: Section 135 of the Companies Act, 2013** and **CSR Rules, 2014**
- **Applicability (any one condition):** Net worth ≥ **₹500 crore**, or Turnover ≥ **₹1,000 crore**, or Net profit ≥ **₹5 crore** (during the immediately preceding financial year)
- **Mandatory CSR spending: At least 2%** of the **average net profits of the last 3 years**
- **CSR Committee:**
    - Minimum **3 directors**, including **1 independent director**
    - Not mandatory for certain private/unlisted companies (as per amendments)
- **Permissible CSR activities:** Listed under **Schedule VII** of the Companies Act, including: Poverty alleviation, healthcare, nutrition, Education and skill development, Gender equality, women empowerment etc.
    - **Not treated as CSR:** Activities in **normal course of business** (with limited exceptions), Political contributions, Benefits exclusively for employees etc.
    - **Implementation:** By the company itself or through **registered implementing agencies** (Trusts, Societies, Section 8 companies)

- **Unspent CSR amount:** Transfer to specified government fund within **6 months**
- **The Supreme Court of India has ruled** that Corporate Social Responsibility (CSR) must inherently include environment and ecology, holding that CSR spending on environmental protection is not charity but a constitutional obligation under Article 51A(g).

2.105 West Bank

Prelims Pointers: THE WEST BANK

- **Location:** West of the Jordan River in the Middle East
- **Area:** About 5,640 sq km
- **Status:** Israeli-occupied territory; claimed by Palestinians
- **Major cities:** Ramallah, Hebron, Nablus, Bethlehem, Jericho
- **Borders:**
  - → **North** and West: Israel
  - → **East:** Jordan River & Jordan
  - → **South:** Israel
- **Governance:** Partly administered by the Palestinian Authority (PA); Israeli military control in many areas
- **Key Issues:**
  - → **Israeli** *settlements*
  - → **Checkpoints** & *security barrier*
  - → **Disputed** capital: East Jerusalem
- **Significance:** Core issue in the Israeli-Palestinian conflict

Key Point: The West Bank is a contested territory central to the Israeli-Palestinian conflict.

2.106 Anjadip

- Indigenous Anti-Submarine Shallow Water Craft (ASW-SWC)
- Designed for anti-submarine operations in shallow/coastal waters
- Replaces ageing Abhay-class corvettes
- Designed by: Indian Navy (Directorate of Naval Design)
- Built by: Cochin Shipyard Ltd (CSL)
- Key Features:
  - Optimised for littoral & shallow waters
  - Low acoustic signature for submarine detection
  - Equipped with indigenous sonars, torpedoes & ASW rockets
  - Advanced Combat Management System (CMS)

- Indigenous Systems onboard:
  - HUMSA-NG sonar (DRDO)
  - Varunastra torpedo (ship-launched, indigenous)
  - Indigenous Electronic Warfare & communication systems

2.107 Fukushima Nuclear Power Plant

- **Location: Fukushima Prefecture**, eastern coast of **Japan** (Pacific coast)
- **It is the largest nuclear powerplant of the world.**
- **Fukushima Nuclear Disaster (2011)- Magnitude 9.0 earthquake followed by a tsunami.**
- **Cause of accident: Tsunami disabled backup diesel generators**
- **Classified as Level 7 on the International Nuclear and Radiological Event Scale (INES)**
- **Same level as Chernobyl (1986)**
- **Japan took the final step to allow the world's largest nuclear power plant to resume operation.**

2.108 Index of Eight Core Industries (ICI)

- A composite index that measures **production performance of eight core industries** of the Indian economy.
- These industries have **high weight (~40%) in the Index of Industrial Production.**
- **Base Year: 2011–12**
- **Frequency: Monthly**
- **Released by: Office of the Economic Adviser (OEA), Ministry of Commerce & Industry**
- **Nature: Volume-based index** (not value-based)
- **Eight Core Industries Covered- Coal, Crude Oil, Natural Gas, Refinery Products, Fertilisers, Steel, Cement, Electricity**
- **Refinery Products:** Highest weight. Followed by **Electricity, Steel, Coal**
- Lowest weight among the eight: **Fertilisers**

2.109 Bureau of Port Security (PIB)

- The Government of India has decided to set up a dedicated statutory body, the Bureau of Port Security (BoPS), to ensure comprehensive and risk-based security of ports and vessels across India.
- It will be constituted as a statutory body under Section 13 of the Merchant Shipping Act, 2025.

- BoPS will function under the Ministry of Ports, Shipping and Waterways .
- The BoPS shall be headed by the Director General (an IPS officer of Pay Level-15). During the one-year transition period, the Director General of Shipping (DGS/DGMA) shall function as the Director General, BoPS.
- The Bureau is modelled on the Bureau of Civil Aviation Security (BCAS.
- Under BoPS, a dedicated cyber security division will be established to protect port IT and digital infrastructure.
- To strengthen port security infrastructure, the CISF has been designated as a Recognised Security Organisation (RSO) for ports.
- CISF is mandated to train and certify Private Security Agencies (PSAs) engaged in port security, with regulatory safeguards.

2.110 Great Indian Bustard

- **Habitat: Arid and semi-arid grasslands, scrublands. A voids forests and dense vegetation**
- **IUCN Status: Critically Endangered**
- **Wildlife Protection Act, 1972: Schedule I (highest level of protection)**
- **CITES: Appendix I (international trade prohibited)**
- **Endemism: Endemic to the Indian subcontinent (India & marginal presence earlier in Pakistan)**
- **Major States (present strongholds): Rajasthan (Desert National Park – largest population), Gujarat (Kutch landscape), Maharashtra etc.**
- **State Bird: Rajasthan**
- **Physical Features: Among the heaviest flying birds in the world. Black crown on head, long legs, white body with brown wings**
- **Diet: Omnivorous – insects (locusts, beetles), seeds, grasses, small reptiles**
- **Major Threats: Collision with overhead power transmission lines (largest cause of mortality)**

2.111 IUCN Species Survival Commission (SSC)

- **The Species Survival Commission (SSC) is the largest and most influential scientific network of the International Union for Conservation of Nature (IUCN), dedicated to conserving species and halting biodiversity loss worldwide.**
- **Mandate / Objective:**
  - **To assess, conserve, and monitor the status of species worldwide.**
  - **Provides the scientific basis for species conservation policy.**
- **Composition:**
  - **Over 10,000+ volunteer experts (scientists, field biologists, conservationists).**

  - **Members work through Specialist Groups.**
- **Key Functions:**
  - **Preparation and updating of the IUCN Red List of Threatened Species.**
  - **Species risk assessment using standardized Red List Categories & Criteria.**
  - **Development of Species Action Plans and recovery strategies.**
  - **Advises governments, NGOs, and international conventions.**
- **Specialist Groups: Organized by taxa (e.g., mammals, birds, amphibians) or themes (e.g., invasive species). Example: Bustard Specialist Group, Amphibian Specialist Group.**
- **Provides technical inputs to: CITES, Convention on Biological Diversity (CBD), Convention on Migratory Species (CMS).**

2.112 Jallikattu

- Jallikattu is a traditional, ancient bull-taming sport from Tamil Nadu, India, celebrated during the Pongal festival, where participants try to grab a bull's hump to win prizes, preserving native cattle breeds and showcasing rural valor
- **Occasion: Conducted during Pongal festival, especially on Mattu Pongal day.**
- **Historical Reference: Mentioned in Sangam literature (c. 400 BCE–300 CE), indicating ancient origins.**
- **Geographical Spread: Predominantly in Tamil Nadu (Madurai, Tiruchirappalli, Theni regions).**
- **Variants in other states: Manjuvirattu (Tamil Nadu), Eruthazhuvuthal.**

- **Animals Involved: Indigenous bull breeds like Kangayam, Pulikulam, Umbalachery.**
- **Legal History:**
  - **2014 Supreme Court judgment banned Jallikattu citing animal cruelty (under PCA Act, 1960).**
  - **2023 Constitution Bench upheld: Tamil Nadu, Karnataka, and Maharashtra laws permitting Jallikattu/Kambala/Bullock cart races. Recognised Jallikattu as part of cultural heritage, subject to regulation.**

2.113 National Maritime Heritage Complex (NMHC)

- **Location: Lothal, near Dholka, Ahmedabad district, Gujarat.**
- **Nature of Project: India's largest maritime museum & heritage complex.**
  - **Combines heritage, education, tourism, and research.**
- **Nodal Ministry: Ministry of Ports, Shipping and Waterways (MoPSW).**
- **Institutions Involved: Developed with support from IITs, Navy, Coast Guard, Archaeological experts.**
- **Components: National Maritime Museum**

- **Theme / Focus: India's 3,000+ years of maritime history — from Harappans to modern Navy.**
- **Objective: Highlight India as a maritime civilization and strengthen maritime consciousness.**
- **Designed as an eco-friendly, sustainable complex.**
- India and the Netherlands have signed an MoU to cooperate on the development of the National Maritime Heritage Complex

Significance of Lothal:

- **Part of the Harappan (Indus Valley) Civilization.**
- **Known for a dockyard, indicating ancient maritime trade.**

2.114 Jnanpith Award

- **Highest literary award in India**.
- **First Awarded: 1965**
  - **Objective:** To recognise **outstanding contributions to Indian literature**.
- **Eligibility:**
  - Awarded to an **Indian author** for **overall contribution**, not for a single work.
  - Work must be in **any of the languages listed in the Eighth Schedule of the Constitution** or **English**.
  - **Administered by: Bharatiya Jnanpith**, a literary and cultural organisation.
- **Selection Process:**
  - Language-wise advisory committees recommend names.
  - Final decision by the **Jnanpith Award Selection Board**.
- **Components of the Award: Citation, Vagdevī (Saraswati) bronze statue, Cash prize** (₹11 lakh at present)
  - **Nature of Award: Annual**, but not necessarily awarded every year.
- **Notable Facts:**
  - First recipient: **G. Sankara Kurup (Malayalam)**
  - Only **posthumous award**: **Ramdhari Singh 'Dinkar' (Hindi)**

2.115 Pa Pa Pagli Project (PIB)

- Gujarat's Dahod district has gained attention for a play-based early childhood education model in Anganwadi centres, where the **UNICEF**-supported "Pa Pa Pagli" initiative.

- **It is a play-based early childhood education initiative** in **Gujarat** focused on children aged **3–6 years** in Anganwadi centres.
- Name *Pa Pa Pagli* roughly means **"First Steps of the Child"**.
- 🎯 **Objective**
  - To **strengthen foundational learning** and **holistic development** of preschool-aged children.
  - Prepares children for **school readiness** by improving cognition, communication, confidence and routine skills.
- **Key Features**
  - **Play-oriented pedagogy** — games, stories, songs, puzzles, movement and interactive activities.
  - **Life-skills focus** — hygiene, social interaction and communication alongside learning.
  - Use of **digital/visual aids**, activity-based curriculum and playful videos.
  - **Anganwadi transformation** — beyond nutrition and health to include early cognitive development.
- **Implementation & Support**
  - Driven by **Gujarat's Women and Child Development Department**.
  - **Technical support from UNICEF India** for quality standards and capacity building.

2.116 Superkilonova

- **Kilonova:** When two neutron stars collide, they eject heavy radioactive elements such as gold, platinum and neodymium, whose decay produces optical and infrared emissions known as a kilonova.
- **Superkilonova:** A superkilonova has an additional energy source, as it begins with a supernova explosion that forms two neutron stars (instead of one).

- **Associated With: Merger of compact objects**, especially **Neutron star–neutron star, Neutron star–black hole** systems.
- **How is it different from a Kilonova?**
  - **Much brighter and longer-lasting** than a normal kilonova
  - Energy output may approach or exceed some **supernova-like luminosities**, hence the prefix *"super"*
- **Source of Energy:** Believed to be powered by: **Rapid neutron-rich radioactive decay (r-process),** Additional energy injection from a **long-lived magnetar** (highly magnetised neutron star)
- **Scientific Significance:** Helps explain **heavy element formation** (gold, platinum, uranium) in the universe.
- **Detected via: Gravitational waves, Electromagnetic radiation** (optical, infrared)
- Often follows a **binary merger event** detected by LIGO–Virgo

2.117 SHAKTI Scholars – NCW Young Research Fellowship

- A **young research fellowship** launched by the **National Commission for Women (NCW)** to promote **policy-oriented research** on issues affecting women in India.

- SHAKTI Scholars is a six-month, grant-based research fellowship designed to support young scholars and independent researchers in undertaking policy-relevant, multidisciplinary research on issues affecting women in India.
- **Objective:** To **encourage multidisciplinary, evidence-based research** that can inform policymaking and strengthen interventions for women's rights, safety, dignity, empowerment and related socio-economic issues.
- **Thematic Focus Areas:**
    - Women's safety and dignity
    - Gender-based violence & access to justice
    - Cyber safety & POSH (Prevention of Sexual Harassment) implementation
    - Women's leadership, political participation & governance
    - Health, nutrition, education & skill development
    - Economic empowerment & labour force participation
    - Socio-cultural practices & work–life balance
- **Eligibility: Indian citizens** aged **21–30 years**
- **Minimum qualification: Bachelor's degree** from a recognised institution
  • **Preference** for those pursuing/completed postgraduate or higher research
  • Independent researchers with proven research experience also eligible
- **Fellowship Support:**
    - **Financial grant:** ₹1,00,000 for research support
    - **Duration: Six months**
    - Grant released in **installments linked to research progress**

2.118 GHAR – GO Home and Re-Unite Portal

- A **digital platform** developed and launched by the **National Commission for Protection of Child Rights (NCPCR)** to **monitor and track the restoration and repatriation of children** under the Juvenile Justice system.
- **Legal & Policy Basis:** Aligned with the **Juvenile Justice (Care & Protection of Children) Act, 2015** and associated protocols.
- **Key Features:**
    - **Digital tracking & monitoring:** Helps track children who are in the Juvenile Justice system and need to return home (within country or from abroad).
    - **Case transfer:** Allows digital transfer of cases to **Juvenile Justice Boards/Child Welfare Committees** for speedy action.
    - **Support mechanisms:** Requests for translators/interpreters or experts can be routed through concerned state authorities.
    - **Checklist & welfare linkage:** Includes checklists to flag difficult repatriation cases and links children with **government welfare schemes** for family strengthening.
    - **Restoration & rehabilitation:** Enables Child Welfare Committees and District Child Protection Officers to **monitor progress** and ensure restoration with family.

2.119 Rapid Financing Instrument

- **Rapid Financing Instrument** is a **lending facility** of the **International Monetary Fund (IMF)**.
- It provides **quick financial assistance to IMF member countries** facing **urgent balance of payments (BoP) needs**.
- **Purpose**
  - To help countries **meet immediate and severe economic disruptions** due to shocks—such as **natural disasters, commodity price spikes, or global crises**—without a full-fledged IMF program.
  - Designed for situations where a long-term program isn't **necessary or feasible** but urgent support is essential.
- **Key Features:**
  - **Fast disbursement:** Funds are provided **rapidly** in a **single tranche** to address immediate needs.
  - **Minimal conditionality:** No comprehensive economic reform program or frequent reviews are required—only general policy intentions.
- **Eligibility: All IMF member countries** can use the RFI facility.
- **Difference from other IMF support:**
  - Unlike standard IMF programs (e.g., Stand-By Arrangements), **no in-depth conditionality** or long-term structural reforms are mandated under RFI.
  - It complements, rather than replaces, longer IMF arrangements.

2.120 Ghost Pairing

- Ghost pairing is a social-engineering–based cyberattack in which fraudsters secretly link (pair) a victim's WhatsApp account to the attacker's device, gaining real-time access to chats, media, and contacts without hacking the phone itself.
- **Aim:**
  - Gain unauthorised access to WhatsApp conversations
  - Steal sensitive information (photos, OTP hints, documents)
  - Extort money, commit identity fraud, or empty bank accounts through follow-up scams
- **How it works?**
  - **Impersonation:** Attacker messages the victim using a familiar name, or poses as a bank, tax, or government official.
  - **Bait message:** Victim receives a message like "Hi, check this photo" or "Your account will be blocked" with a **malicious link**.
  - **Urgency and panic:** Social pressure is applied using threats such as bank account freeze or number deactivation.
  - **Verification trap:** Victim is tricked into approving a WhatsApp device-linking request or entering a pairing/verification code.
  - **Silent takeover:** Attacker's device gets linked as a companion device, giving them **full WhatsApp access** without alerting the victim.
- **Key features:**
  - No SIM swap required.
  - No password cracking involved.
  - Exploits human trust, urgency, and fear.

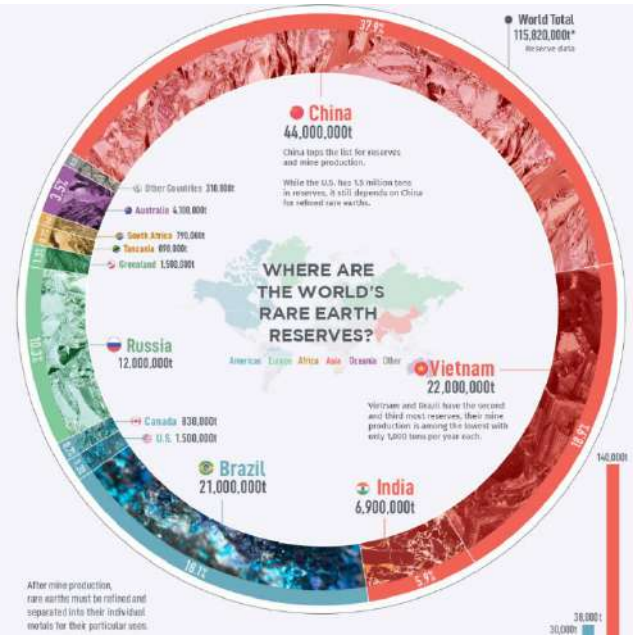
- Works across WhatsApp, Telegram, and similar messaging apps.
- Enables real-time spying and data extraction.

2.121 Pariksha Pe Charcha (PPC)

- An **annual interactive programme** where the **Prime Minister of India** interacts with students, teachers and parents on issues related to **examination stress and life skills**.
- **Objective:**
  - Reduce **exam-related stress,** Promote **positive learning attitude,** Encourage **holistic education** beyond marks
- **Participants:**
  - Students of **Classes 6 to 12**
  - Teachers and parents
- Selected through **online registration & competition-based process**
- Conducted in **physical + digital (broadcast/online)** format.
- **Organising Ministry: Ministry of Education**, Government of India.
- **Associated Platform: MyGov** portal used for registration and engagement.
- **Key Themes:** Stress management, Time management, Mental health & well-being, Career choices and values.
- **Institutional Linkage:** Aligned with **National Education Policy (NEP) 2020** focus on **student-centric learning**.
- **Coverage:** Telecast on **Doordarshan, digital platforms, and social media**.

2.122 Rare Earth Mud

- **What it is:** Deep-sea sediment (mud) enriched with **Rare Earth Elements (REEs)** such as **Neodymium (Nd), Dysprosium (Dy), Terbium (Tb), Yttrium (Y)** etc.
- Found on **deep ocean floors**, especially in the **Pacific Ocean**; identified within some **Exclusive Economic Zones (EEZs)**.
- Generally located at depths of **3,500–6,000 metres**.
- **Key Feature:**
  - REEs are **adsorbed on clay minerals**, making extraction **potentially easier** than hard-rock mining.
- **Strategic Importance:**
  - Critical for **electronics, EVs, wind turbines, defence systems**.
  - Can reduce dependence on **China-dominated REE supply chains**.



- **Japan's Discovery:** Japan has identified **highly concentrated REM deposits** in its Pacific EEZ, considered commercially viable. Japan is set to test mine rare-earth mud from deep seabed
- **Governance:** Activities beyond national jurisdiction regulated by **International Seabed Authority (ISA)** under **UNCLOS**.

2.123 Good Governance Day (PIB)

- **Observed on: 25 December** every year. Birth anniversary of **Atal Bihari Vajpayee**, former Prime Minister of India
- **Purpose:** To promote awareness about **accountability, transparency, and citizen-centric governance** in India
- Earlier observed as **Good Governance Week (Sushasan Saptah)** in recent years, culminating on 25 December
- **Key Objectives:**
  - Improve **public service delivery**
  - Ensure **effective implementation of government policies**
  - Promote **minimum government, maximum governance**

- **Associated Initiatives:**
  - **Good Governance Index (GGI)** by **Department of Administrative Reforms and Public Grievances (DARPG)**
  - Emphasis on **e-Governance**, grievance redressal (e.g., **CPGRAMS**)
- Nodal Ministry: **Ministry of Personnel, Public Grievances and Pensions**

2.124 Samudra Pratap

- **Commissioned by: Indian Coast Guard (ICG)**
- Dedicated **Pollution Control Vessel (PCV)** for marine environmental protection
- **Primary Functions:**
  - **Oil spill response** and recovery at sea
  - **Marine pollution monitoring** and containment
  - **Chemical dispersant spraying**
  - **Support during maritime environmental emergencies**

- **Indigenous Content:**
  - **Indigenously built** under the **Make in India** initiative
  - Constructed by **Goa Shipyard Limited (GSL)**
- **Operational Features:**
  - Equipped with **state-of-the-art oil spill detection and recovery systems**
  - Capable of operating in **harsh sea conditions**

  - Can undertake **aerial surveillance coordination** for pollution response
- **Strategic Significance:**
  - Strengthens India's compliance with **MARPOL Convention**
  - Enhances India's capability under **National Oil Spill Disaster Contingency Plan (NOS-DCP)**
  - Supports **Blue Economy** and **coastal environmental security**
  - **Other Sister Vessels (ICG PCVs):** Samudra Prahari, Samudra Paheredar, Samudra Pehlu, Samudra Sarvekshak.

2.125 Subansiri Lower Hydroelectric Project (SLHEP)

- **Type: Run-of-the-river** hydroelectric project
- **Installed Capacity: 2,000 MW** (8 × 250 MW)
- **Status:** India's **largest hydroelectric project.**
- **Location:** On the **Assam–Arunachal Pradesh border**
- On **Subansiri River**, a tributary of the **Brahmaputra**
- Powerhouse in **Assam**, dam in **Arunachal Pradesh**
- **Implementing Agency: NHPC Limited**
- **Concrete gravity dam**
- Concerns over **seismic vulnerability** (Zone V)
- Subansiri → **Brahmaputra River system**

2.126 Mitigating Heavy Metal Pollution with Sponge

- Freshwater **sponges in the Sundarbans show exceptional ability to bioaccumulate heavy metals**, making them reliable bioindicators.
- Their dual role in pollution detection and bioremediation offers a sustainable, ecosystem-based approach to managing toxic metal contamination.
- Sponges are simple, aquatic animals belonging to the phylum Porifera. They are among the oldest and most primitive multicellular organisms on Earth, with a fossil record dating back over 600 million years.

- **Key Characteristics of Sponges:**
  - **No True Tissues or Organs**
  - **Filter-Feeding Mechanism:** They draw in water through numerous pores (ostia) on their body surface. Specialized cells called choanocytes (collar cells) trap and ingest bacteria, plankton, and organic particles from the water, which is then expelled through larger openings called oscula.
  - **Skeleton:** They possess a simple skeleton made of mineral.
- **Habitat:** Mostly marine, but some species live in freshwater (like those studied in the Sundarbans).
- **Symbiotic Relationship** with the host.

Bioaccumulation

- **Bioaccumulation** is the gradual buildup of **persistent toxic substances**, such as **heavy metals**, within a single **organism** when intake from the environment, water, air, or food exceeds its ability to **metabolize or excrete** them.
  - Unlike **biomagnification**—which occurs across a **food chain**—bioaccumulation occurs at the **individual level** and drives biomagnification.

2.127 India's First PPP-Model Medical Colleges

- India has announced its **first-ever PPP-model medical colleges** in the tribal districts of Dhar and Betul (Madhya Pradesh).
- Four such colleges are planned (Dhar, Betul, Katni, Panna), linked with existing district hospitals to strengthen both medical education and public healthcare delivery.
- Public–Private Partnership (PPP**) is an arrangement where the government and private sector jointly provide public infrastructure or services**.
- The private partner invests in construction, management or operations, while risks and responsibilities are clearly shared, and payments are linked to performance standards.

Government incentives for PPP:

- **Viability Gap Funding (VGF):** Capital grant of up to **40% of project cost** to improve financial viability.
- **India Infrastructure Project Development Fund (IIPDF):** Financial support for feasibility studies and project structuring.
- **IIFCL financing:** Long-term debt support for infrastructure projects with long gestation periods.
- **FDI support:** Up to **100% FDI** permitted in most PPP sectors through the automatic route.

2.128 Pradhan Mantri Gram Sadak Yojana (PMGSY)

- **Ministry:** Ministry of Rural Development
- **Objective:** Provide **all-weather road connectivity** to eligible unconnected rural habitations.
- PMGSY completed 25 years in December 2025
- **Key Features**
  - **Nature:** Centrally Sponsored Scheme (CSS)
  - **Funding Pattern:**
    - **Plains:** 60:40 (Centre:State)
    - **NE & Himalayan States:** 90:10
    - **UTs:** 100% Central funding

- **Eligibility of Habitations (as per Census 2001):**
  - **Plain areas:** Population ≥ 500
  - **Hill/Tribal/Desert/Left Wing Extremism (LWE) areas:** Population ≥ 250
- **Road Type:** New connectivity roads and upgradation of existing rural roads.
- **Implementation & Monitoring**

- **Nodal Agency:** National Rural Infrastructure Development Agency (NRIDA)
- **Execution:** State Rural Roads Development Agencies (SRRDAs)

- **Monitoring Tools:**
  - **OMMAS (Online Management, Monitoring & Accounting System)**
  - **GIS mapping and e-Marg system**
  - **Third-party quality audits**

2.129 Dark patterns

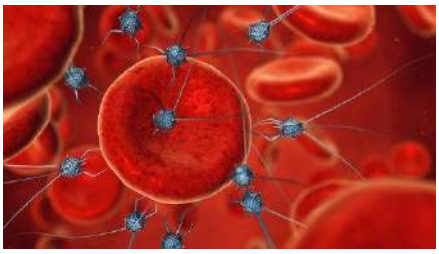
- Dark patterns are **deceptive design practices** used in websites/apps to **manipulate user choices** and push them into unintended actions (e.g., forced consent, hidden costs).
- **Indian Context**
- **Regulator:** Department of Consumer Affairs (DoCA), Ministry of Consumer Affairs
- **Guidelines Issued:** *Guidelines for Prevention and Regulation of Dark Patterns, 2023*
- **Legal Backing:** Consumer Protection Act, 2019
- **Applicability:** E-commerce platforms, Online marketplaces, Digital service providers, Social media platforms
- **Common Types (as per Indian Guidelines)**
  - **False Urgency:** Fake countdowns, "Only 1 left" messages
  - **Confirm Shaming:** Guilt-tripping language to influence decisions
  - **Basket Sneaking:** Adding extra items/services without consent
  - **Forced Action:** Mandatory sign-ups or sharing data
  - **Drip Pricing:** Hidden charges revealed at final stage
  - **Subscription Traps:** Difficult cancellation processes
  - **Nagging:** Repeated prompts to obtain consent

- **Enforcement Mechanism**
  - **Authority:** Central Consumer Protection Authority (CCPA)
- **Penalties:**
  - Orders to discontinue practices
  - Monetary penalties under CPA, 2019

2.130 Nanobots (Nanorobots)

- Nanobots are **microscopic robots**, typically in the size range of **1–100 nanometres**, designed to perform specific tasks at the **cellular or molecular level**.
- **Key Characteristics**
  - Operate at **nanoscale** (comparable to DNA, proteins).
  - Can be **programmable** and **autonomous or externally controlled**.
  - **Targeted precision:** Preferentially bind to cancer cells, reducing collateral damage to healthy tissues.

- Deep tissue penetration: Can access dense and poorly vascularised tumours invisible to conventional scans.
- **Multifunctionality:** Act as drug carriers, therapeutic agents, and imaging beacons (visible under MRI).
- **Biocompatible materials:** Made of silica and iron, materials already used safely in medical applications.
- **Broad applicability:** Proven effective against ovarian and breast cancer cells, bacteria, and dental infections; potential use in dentistry and regenerative medicine.



- **Applications- Medical** (Targeted drug delivery, Precision surgery etc.), **Environmental** (Pollutant detection and removal, Water purification), **Industrial** (Precision manufacturing, Nano-assembly etc.)
- **Context:** An IISc Bengaluru–led breakthrough on magnetic nanobots for targeted cancer therapy has gained global attention after Dr Ambarish Ghosh won the 2025 New York Academy of Sciences–Tata Sons Transformation Prize.

2.131 Micrometeoroids and Orbital Debris (MMOD)

- **Micrometeoroids:** Naturally occurring **tiny particles** (often < 1 mm) originating from **asteroids or comets** that travel through space at **very high velocities**.
- **Orbital Debris (Space Debris): Human-made objects** in Earth orbit that no longer serve any function (defunct satellites, fragments from collisions, rocket parts).

Key Differences

Aspect	Micrometeoroids	Orbital Debris
Origin	Natural	Artificial (human-made)
Size	Micron to mm scale	Micron to several metres
Velocity	~11–72 km/s	~7–8 km/s (LEO)
Predictability	Random	Trackable (larger objects)

- **India:** ISRO's Space Situational Awareness (SSA) and NETRA Project for debris **tracking.**
- **Global:** UN COPUOS guidelines on space debris mitigation. ESA & NASA debris monitoring networks.
- **Context:** The Micrometeoroids and Orbital Debris (MMOD) threat has regained attention after space debris damaged China's Shenzhou-20 capsule. With expanding human spaceflight including Gaganyaan, protecting astronauts from high-velocity debris is now critical.

2.132 Artificially Intelligent Lab Assistant

- AILA is an **AI-powered laboratory assistant** designed to **automate, assist and optimise laboratory research processes**, especially in scientific and chemical labs.
- **Key Features**
  - Uses **Artificial Intelligence (AI) and Machine Learning (ML)** algorithms.

- **Developed by:** Indian Institute of Technology (IIT) Delhi, in collaboration with research teams from Denmark and Germany.
- **Aim:** To automate complex laboratory experiments, reduce human effort and time, and accelerate discoveries in materials science and experimental physics**.**
- Aligns with **Digital India** and **AI for Science** initiatives.
- Supports **Atmanirbhar Bharat** by strengthening indigenous R&D capabilities.
- **Applications**
    - **Chemical sciences** (reaction optimisation, material discovery)
    - **Pharmaceutical research** (drug discovery support)
    - **Materials science**
    - **Academic and industrial laboratories**
- **Key features: Autonomous experiment execution, Real-time decision-making, End-to-end workflow, Time efficiency, Adaptive intelligence**.

2.133 Dehorning Rhinos

- A **conservation practice** in which a rhinoceros's **horn is safely removed** (trimmed) to **deter poaching**, as horns are the main target of illegal wildlife trade.
- **Horn Composition:** Made of **keratin** (same as human hair and nails) — **not bone**.
- **Procedure:**
    - Done by trained veterinarians under **sedation**.
    - Horn is **cut above the growth plate** to avoid injury.
    - Comparable to **cutting fingernails** in terms of pain.
- **Regrowth:** Rhino horns **regrow naturally** and may need repeat dehorning every **1–3 years**.

5 Main Species of Rhino

Species	Found in	IUCN Red List Status	Habitat
African White	Africa	NT	Long/short grass Savannah
African Black	Africa	CE	Semi-Desert Savannah
Greater one-horned	Asia	Vu (CITES - Appendix I, WPA - Schedule I	Tropical grassland
Javan	Asia	CE	Tropical, subtropical forests
Sumatran	Asia	CE	Same as Javan

2.134 Dutch Disease

- An economic phenomenon where a boom in **natural resource exports** (or large foreign inflows) leads to **decline of manufacturing and agriculture**.
- **Origin of Term:** Coined after the **Netherlands' discovery of natural gas (1960s)**, which weakened its manufacturing sector.
- **Core Mechanism:**
    - Large foreign currency inflows (due to export of natural resources) → **Currency appreciation**
    - Exports become costlier → **Loss of competitiveness** of non-resource sectors

- **How it Manifested in Venezuela:**
  - **Currency Appreciation-** making imports cheap and local goods expensive.
  - **Decline in Other Sectors**: Local industries couldn't compete with cheap imports, leading to their collapse, while agriculture also suffered from labor shifts and neglect.
  - **Resource Movement Effect:** Labor and investment shifted towards the oil sector, starving other productive areas.
  - **Unsustainable Spending:** High oil prices funded massive government spending and social programs (Chávez's era), creating an illusion of prosperity while neglecting diversification and infrastructure.
  - **Vulnerability:** The economy became a "petrostate," entirely dependent on oil, making it extremely vulnerable to price drops, as seen in the deep crisis and hyperinflation.

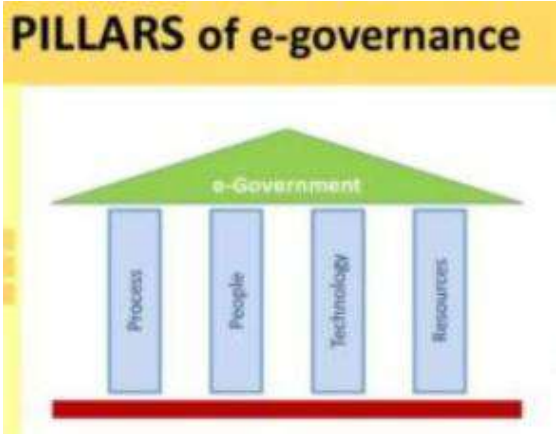
2.135 INS Vagsheer

- Diesel–Electric Attack Submarine (SSK)
- Kalvari-class submarine (Scorpene-class)
- Built under Project–75 of the Indian Navy
- Builder: Mazagon Dock Shipbuilders Limited (MDL), Mumbai with technology transfer from Naval Group, France
- "Vagsheer" means "Sea Tiger". Named after an earlier submarine of the Indian Navy
- Sixth and final submarine of the Kalvari-class series
- Key Capabilities:
  - Advanced stealth features
  - Precision-guided torpedoes and anti-ship missiles
  - Effective for anti-surface warfare, anti-submarine warfare, intelligence gathering
- Kalvari-class Submarines: Kalvari, Khanderi, Karanj, Vela, Vagir, Vagsheer

President Murmu during the submarine sortie, Sunday. PTI

2.136 PRAGATI Platform

- **Full Form: P**ro-**A**ctive **G**overnance **a**nd **T**imely **I**mplementation
- **Chair: Prime Minister of India**
- **Nature:** An **ICT-based, multi-purpose, multi-modal platform** for governance
- **Objective:**
  - Fast-track implementation of **key infrastructure and social sector projects**
  - Improve **Centre–State coordination**
  - Remove inter-departmental and inter-governmental bottlenecks
  - **Participants:** Union Secretaries, Chief Secretaries of States/UTs, District Collectors (for local issues)



- **Key Features:**
  - **Video conferencing + data analytics**
  - Real-time **project monitoring**
  - **Geospatial (GIS) mapping** of projects
  - Grievance redressal integration
  - **Issues Reviewed:** Infrastructure (roads, railways, power, mining), Social sector (health, education, water), Public grievances of national importance
  - **Institutional Support:** Supported by **PMO**, **Cabinet Secretariat**, and **NIC**

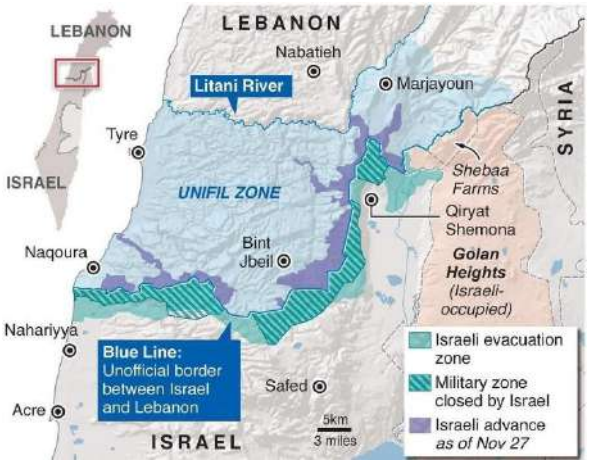
2.137 Somaliland

- **Location:** Horn of Africa, **northwestern part of Somalia**
- **Status: De facto independent** since **1991.** Considered part of **Somalia de jure**
- **Israel has become the first country to formally recognise Somaliland as an independent sovereign state**, triggering sharp opposition from Somalia, the African Union, and key regional powers.
- **Capital: Hargeisa**
- **Borders:** Djibouti (North-West), Ethiopia (South & West), Puntland region of Somalia (East), Gulf of Aden (North)

- **Historical Background:** Former **British Somaliland**
  - Gained independence in 1960, later merged with Italian Somaliland
  - Declared independence after collapse of Somali central government (1991)
- **Political System:** Functioning **democratic system** with elections
  - Own **constitution, parliament, judiciary, currency, and security forces**
- **Currency: Somaliland Shilling**
- **Strategic Importance:** Located near **Bab-el-Mandeb Strait**, a critical global trade route.
  - **Berbera Port** leased to UAE-based DP World

2.138 The Blue Line

- The **Blue Line** is a **UN-demarcated line** marking Israel's withdrawal from **southern Lebanon**.
- **Established by: United Nations** in **2000**
- **Purpose:** To verify **Israel's complete withdrawal** from Lebanon as per **UN Security Council Resolution (UNSCR) 425 (1978)**.
- **Nature:**
  - **Not an international border**



  - A **temporary withdrawal line** for monitoring purposes
- **Length:** Approximately **120 km**
- **Monitored by: UNIFIL (United Nations Interim Force in Lebanon)**
- **Weapons-free buffer:** Resolution 1701 calls for a zone free of armed groups between the Blue Line and the Litani River (except Lebanese armed forces and UNIFIL).
- **Countries Involved:** Israel, Lebanon
- **Key Disputed Areas:**
  - **Shebaa Farms** region (claimed by Lebanon, controlled by Israel)
  - Ghajar village
- **Strategic Importance:**
  - Frequent flashpoint for **Israel–Hezbollah tensions**
  - Vital for maintaining **ceasefire and regional stability**

2.139 Infrastructure Bonds

- **Meaning: Debt instruments** issued to raise long-term funds for **infrastructure projects** like roads, railways, power, ports, and urban infrastructure.
  - **Can be issued by:** Government agencies, Public Sector Enterprises (PSEs), Financial institutions (e.g., **NHAI, PFC, REC**)
- **Tenure:** Generally **long-term** (10–30 years)
- **Interest Rate:** Fixed or floating; usually **lower risk** compared to corporate bonds
- **Purpose:**
  - Bridge **infrastructure financing gap**
  - Reduce dependence on **bank lending**
  - Provide stable funding for capital-intensive projects
- **Investors:**
  - Institutional investors & Retail investors
- **Advantages:**
  - Long-term capital for infrastructure
  - Matches long gestation of projects
  - Encourages **bond market development**

2.140 Indian Pharmacopoeia Commission (IPC)

- **Parent Ministry: Ministry of Health & Family Welfare**
- **Nature:** An **autonomous institution** under the Government of India
- **Primary Mandate:** To set **official standards for drugs** used in India
- **Key Publication: Indian Pharmacopoeia (IP)**- Legally enforceable under the **Drugs and Cosmetics Act, 1940**
- **Core Functions:**
  - Standards for **identity, purity, strength, and quality** of drugs
  - Publication and revision of **Indian Pharmacopoeia**
  - Development of **Reference Substances (IPRS)**
  - Promotion of **generic medicines**

- **Pharmacovigilance Role:**
  - Acts as **National Coordination Centre (NCC)** for **Pharmacovigilance Programme of India (PPI)**
  - Monitors **Adverse Drug Reactions (ADRs)**
- **International Role:**
  - WHO Collaborating Centre for **Pharmacovigilance**
  - Works towards **harmonisation of drug standards** globally

2.141 Ol Chiki script

- *Ol Chiki* is the **indigenous script of the Santhal (Santali) language**.
- **Creator:** Devised by **Pandit Raghunath Murmu** in **1925**.
- **Community & Region:** Used by the **Santhal tribe**, one of the largest tribal groups in India.
  - Predominantly spoken in **Jharkhand, Odisha, West Bengal, Assam, and Bihar**.
- **Language Status: Santali language** is included in the **Eighth Schedule of the Indian Constitution** (92nd Constitutional Amendment Act, 2003).

- **Script Features:** Has **30 basic letters** (vowels and consonants).
  - Script is **phonetic and alphabetic**, not derived from Devanagari or Roman.
  - Written **left to right**.
- Recently President Draupadi Murmu has released the Indian Constitution in this script for the first time.

2.142 INSV Kaundinya

- **INSV Kaundinya** is India's **first stitched sail ship**, built using **ancient shipbuilding techniques**.
- **Purpose:** Part of a **cultural–maritime initiative** to revive and showcase **India's ancient seafaring and shipbuilding heritage**.

- **Stitching Technique:** Built using the **stitched-plank method**, where wooden planks are **stitched together with coir rope**, without nails or metal fasteners.
- **Historical Inspiration:** Inspired by a **5th century CE ship depiction** from the **Ajanta Caves (Maharashtra)**.
- **Construction:** Constructed at **Hodi Innovations, Goa**.
- **Flagged off by the Indian Navy**.
- Named after **Acharya Kaundinya**, an ancient Indian mariner and trader associated with **early Indian maritime links with Southeast Asia** (Funan/Champa region).
- **Key Feature: Single-masted sail ship**, fully **wind-powered**, no modern propulsion.
- Project supported by the **Indian Navy**, **Ministry of Culture**, and maritime heritage institutions.

- The Engine-Less ship has started to sail from India to Oman.

2.143 Gross NPA & Special Mention Accounts (SMA)

- **Gross Non-Performing Asset (GNPA)** refers to the **total value of loans** classified as NPAs **before provisioning**.
- **When a loan becomes NPA:**
  - **Interest or principal overdue for more than 90 days**.
- **GNPA Ratio = (Gross NPAs / Gross Advances) × 100**
- **Significance:**
  - Indicator of **asset quality** of banks.
  - Higher GNPA → **stress in banking system**, reduced lending capacity.
- **Regulator:** Classification governed by **RBI prudential norms**.
- **Prelims Trap:**
- **Special Mention Accounts (SMA):** Accounts showing **incipient stress**, but **not yet NPAs**.
- **Objective: Early detection of stress** and timely corrective action by banks.
- **Types of SMA (Based on Overdue Period)**

Category	Overdue Period
SMA-0	Principal or interest overdue **up to 30 days**
SMA-1	Overdue **31–60 days**
SMA-2	Overdue **61–90 days**

- After **90 days overdue → account becomes NPA**.

2.144 Kanger Valley National Park

- **Location:** Situated in **Bastar district, Chhattisgarh**.
- Named after the **Kanger River**, a tributary of the **Kolab River** (Godavari basin).
- **Geographical Features:** Part of the **Eastern Ghats**.
  - Characterised by **limestone caves, valleys, streams, and dense forests**.
  - **Moist deciduous forests** with **sal and teak** dominance.
  - **Fauna: Bastar Hill Myna** (State bird of Chhattisgarh), Tiger, leopard, sloth bear, wild dog (dhole), Rich **bat population** inside caves.
- **Flora:** Teak, Sal, Bamboo, Mahua.
- Part of a proposed **UNESCO World Heritage Site** under the category of **"Caves of Central India"**.
- **Cultural Aspect:**
  - Located in the **tribal-dominated Bastar region**; associated with indigenous communities.
- **Prelims Fact to Remember:**
  - **Only National Park in Bastar region of Chhattisgarh**.

- **Context:** Kanger Valley National Park has come into focus as the Chhattisgarh government, with support from the Wildlife Institute of India (WII), has initiated biodiversity surveys to seek its recognition as a UNESCO World Heritage Site.

2.145 Gandikota Canyon

- Situated in **Kadapa (YSR) district, Andhra Pradesh**.
- **River:** Formed by the **Pennar (Penna) River**.
- Often called the **"Grand Canyon of India"**.
- **Geological Features:** A deep **gorge carved through Erramala Hills**.
  - Composed mainly of **granite and quartzite rocks**.
- **Physiography:** Lies on the **eastern part of the Deccan Plateau**.
  - Semi-arid landscape.
- **Gandikota Fort:** A historic **13th-century fort** overlooking the canyon.
  - Associated with the **Kakatiya dynasty**, later ruled by **Vijayanagara Empire**.
- **Protected Area:** Part of **Gandikota Wildlife Sanctuary**.

2.146 Rashtriya Vigyan Puraskar

- **Rashtriya Vigyan Puraskar (RVP)** is a **new national-level award system** instituted by the **Government of India** to honour contributions in **science, technology, and innovation**.
- **Introduced by: Ministry of Science & Technology** (Government of India).
- **First Announced: 2024** (replacing older S&T awards framework).
- **Objective:** To **recognise lifetime and path-breaking contributions**, and **promote scientific temper**.
- **Replaces: Shanti Swarup Bhatnagar Prize**, **Vigyan Ratna**, **Vigyan Shri**, and **Vigyan Yuva–Shanti Swarup Bhatnagar** awards (integrated into a unified system).
- **Categories (4 tiers):**
  - **Vigyan Ratna** – Lifetime contributions to science & technology
  - **Vigyan Shri** – Distinguished contributions in specific fields
  - **Vigyan Yuva** – Young scientists (below a specified age)
  - **Vigyan Team** – Team-based scientific contributions
- **Eligibility:** Open to **Indian citizens** and **Persons of Indian Origin (PIOs)**.
- **Fields Covered:** Physical sciences, life sciences, engineering, medicine, earth sciences, mathematics, and interdisciplinary areas.


President Murmu Gives Away First-Ever Rashtriya Vigyan Puraskar

2.147 Regional Level Pollution Response Exercise (RPREX-2025)

- **RPREX-2025** is a **regional-level preparedness and response exercise** conducted to deal with **marine pollution incidents**, especially **oil spills**.
- **Conducted by: Indian Coast Guard (ICG)** – the **nodal agency** for marine pollution response in India.
- **Host:** Conducted off the Mumbai coast.
- **Objective:**
  - To **test operational readiness**, **inter-agency coordination**, and **standard operating procedures (SOPs)** for combating **marine pollution**.
  - To enhance **quick response capability** during oil spill or chemical spill incidents.

- **Legal/Institutional Basis:** Conducted under the **National Oil Spill Disaster Contingency Plan (NOS-DCP)**.
  - India is a signatory to **MARPOL Convention** (IMO).
- **Organisations involved: Indian Coast Guard and ONGC.**
- **Key features:**
  - **Realistic spill simulation**
  - **Two-phase approach:**
    - **Phase I:** Planning conference, technical lectures, tabletop exercise
    - **Phase II**: Full-scale live sea exercise testing ships, skimmers, and containment gear
  - Use of Pollution Control Vessels (PCVs) with skimming and containment equipment.
  - **Multi-agency participation**: Integration of port authorities, oil companies, coastal police, and state agencies.

2.148 Dhruv NG Helicopter

- **Developer:** Hindustan Aeronautics Limited (HAL)
- **Platform:** Advanced Light Helicopter (ALH) – **Dhruv** series
- **Key Features**
- **Modern avionics:**
  - Fully digital **glass cockpit**
  - Advanced Flight Control System (AFCS)
  - Improved navigation & communication suite

- **Enhanced safety:**
  - Crashworthy fuel system
  - Health and Usage Monitoring System (HUMS)
- **Improved maintainability:**
  - Reduced maintenance man-hours
  - Higher serviceability rates
- **Upgraded performance:**
  - Better power-to-weight ratio

- Improved hot-and-high altitude capability
- **Engine**
  - Powered by **Shakti engines** (jointly developed by HAL & Safran, France)

2.149 Pinaka Long Range Guided Rocket System (LRGR)

- **India** successfully conducted the **maiden flight test** of the indigenously **Pinaka Long Range Guided Rocket (LRGR 120)**, with a **strike range** of approximately **120 kilometers.**
- **Type:** Indigenous **guided rocket artillery system**
- **Based on:** Pinaka Multi-Barrel Rocket Launcher (MBRL) family
- **Developer:** DRDO
- **Key Features**
  - **Guided rocket:** Uses **navigation, guidance and control kit**
  - **High accuracy:** Circular Error Probable (CEP) significantly reduced compared to unguided rockets
  - **All-weather, day-night capability**
  - **Shoot-and-scoot** to evade enemy counter-battery fire
- **Guidance System**
  - **INS + GPS aided guidance**

2.150 Industrial hemp

- **Type: Non-psychoactive** variety of cannabis
- **Key distinction:**
  - Very low **THC (tetrahydrocannabinol)** content
  - THC generally ≤ **0.3%** (international standard)
- **Origin:**
  - Native to Central and South Asia, with millennia-old use in textiles, ropes, paper, and medicine
  - Now legally cultivated across parts of Europe, North America, and Asia under regulated THC thresholds
- **Uses: Fibre, Industrial products, Seeds** (Edible oil, protein-rich food, animal feed), **Cosmetics & wellness products** (non-narcotic).
- **Environmental Benefits**
  - Requires **less water** than cotton
  - **Fast-growing** crop (90–120 days)
  - Improves **soil health** and reduces weed growth
  - Acts as a **carbon sink** (high biomass)
- **Legal Status in India**

  - Regulated under the **NDPS Act, 1985**
  - Cultivation allowed for **industrial and horticultural purposes** with **state government permission**
  - **Leaves and seeds** (not resin) are excluded from definition of narcotic drugs under NDPS
- **Indian Initiatives-** Pilot cultivation allowed in states like **Uttarakhand, Uttar Pradesh, Madhya Pradesh**
- **Context:** Himachal Pradesh has legalised and initiated regulated cultivation of industrial hemp under the 'Green to Gold' initiative to promote a bio-economy–led growth model.

2.151 Srimanta Sankardeva

- **Region:** Assam (Brahmaputra Valley)
- **Role:** Saint, social reformer, poet, playwright, and cultural icon of Assam
- **Religious Contribution**
  - Founder of **Ekasarana Dharma**
  - Monotheistic Vaishnavite movement
  - Devotion to **Lord Krishna** as the sole deity
  - Emphasised **bhakti (devotion)**, equality, and rejection of caste discrimination
  - Stressed **Naam (chanting God's name)** as the path to salvation

- **Institutional Innovations**
  - Established **Satras** (Vaishnavite monasteries)
  - Introduced **Namghars** (community prayer halls)
  - Acted as centres of worship, culture, and social cohesion
- **Literary Works**
  - Composed **Borgeet** (classical devotional songs in Assamese and Brajavali)
  - Translated and adapted **Bhagavata Purana** into Assamese
  - Authored devotional texts like **Kirtan Ghosha**
- **Cultural Contributions**
  - Pioneer of **Ankiya Naat** (one-act religious plays)
  - Introduced **Sattriya dance**, now one of India's **eight classical dance forms**
- **Language & Medium**
  - Used **Assamese and Brajavali** (literary language) to reach the masses

2.152 Narsapuram Lace Craft

- **Type:** Traditional **handmade lace craft**
- **Region: Narsapuram**, West Godavari district, **Andhra Pradesh**
- **GI Status:** Granted **Geographical Indication (GI) tag** (India)
- **Origin & History**
  - Introduced in the **19th century** during British colonial period

  - Strong influence of **European (especially Irish/Belgian) lace-making techniques**
  - Gradually adapted into indigenous designs
- **Raw Materials**
  - Fine **cotton threads**
  - Sometimes blended with silk or synthetic yarns
- **Technique: Handmade needle lace** technique
  - Intricate looping and knotting of threads
- Primarily practiced by **women artisans**
- Home-based cottage industry
- Important source of **livelihood and women empowerment**

2.153 Rashtra Prerna Sthal

- **Location: New Delhi**
- **Purpose:** To honour **social reformers, saints and national icons** who fought social injustice and inequality
- **Key Features**: Dedicated to personalities associated with:
  - **Social justice**
  - **Anti-caste movements**
  - **Tribal rights**
  - **Women empowerment**
- Designed as a **public space for awareness and inspiration**
- **Personalities Associated: Dr. B.R. Ambedkar, Jyotiba Phule, Savitribai Phule etc.**
- **Emphasis on: Equality, dignity and constitutional values**
  - Social reform movements in modern Indian history