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1.1. ONE NATION, ONE ELECTION BILL

Why in the News?

The Constitution (129th Amendment) Bill, 2024, and The Union Territories Laws (Amendment) Bill, 2024, introduced to implement **"One Nation One Election".**

Key Provisions of the Bills

- **Articles Amended:**
  - **Article 83 (Duration of Houses of Parliament):** Proposes if Lok Sabha dissolves early, the next one serves only the remaining term.
  - **Article 172 (Duration of State Legislatures):** Similar to Article 83.
  - **Article 327 (Power of Parliament regarding Legislature elections):** Adds "conduct of simultaneous elections" after "delimitation of constituencies".
- **Article 82A inserted:**
  - **Simultaneous Elections:** General elections for Lok Sabha and all Legislative Assemblies held together.
  - **Appointed Date:** The President can enforce changes on the first sitting of Lok Sabha.
    - All State Assemblies elected after this date end with Lok Sabha's term.
  - **Election Commission's (EC) Powers:** EC can recommend a later date for state elections if not feasible with Lok Sabha elections.
  - **Deferred Elections:** An Assembly's term ends with the Lok Sabha's if its election is deferred.
  - **Term Declaration:** EC announces each Assembly's 'term end date' when notifying elections.
- **The Union Territories Laws (Amendment) Bill, 2024:** Aligns Union Territories' Legislative Assemblies' terms with Lok Sabha by amending respective Acts.

About Simultaneous Elections

- **Simultaneous Elections:** Refers to holding elections for Lok Sabha, State Assemblies, and local bodies (not included in the Bill) at the same time.
- **High-Level Committee under former President Ram Nath Kovind (2024)** recommended simultaneous polls to Parliament, State Assemblies, and Local bodies.
- **Previous Recommendations:** Election Commission of India (1983), Law Commission (1999), Parliament Standing Committee (79th report), NITI Aayog (2017), Law Commission (2018).

Need for Simultaneous Elections

- **Financial:** Reduces costs related to **manpower, equipment, and security.**
- **Economic:** Minimizes disruption to **supply chains, business investments and economic growth.**
- **Governance:** Avoids policy paralysis due to frequent application of **Model Code of Conduct.**
- **Voter Participation:** Reduces voter fatigue.
- **Efficiency:** Optimizes resource use, **reduces election disputes.**

Issues Involved in Simultaneous Elections

- **Constitutional:** Potential **misuse of President's Rule** to maintain synchronization.
- **Logistical:** Challenges with **administrative capacity** due to vast electorate **(over 96 crore electors in 2024).**
- **Federalism:** Reduced state participation in decision-making.
- **Voter Behavior:** Risk of national issues overshadowing local concerns and smaller parties.
- **Legal:** Requires amendments to multiple constitutional provisions **(e.g., Articles 83, 172, 327)** and changes to the **Representation of the People Act, 1951.**
- **Accountability:** Fixed terms might reduce political accountability.

Conclusion

Simultaneous elections could streamline the electoral process but face hurdles in logistics, democratic accountability, and federalism. **Careful planning & democratic framework** are essential for effective implementation.

1.2. FREEBIES

Why in the News?

Recently, the Supreme Court asked if freebies promote a parasitic lifestyle among the poor and reduce their drive to seek work.

What are Freebies?

RBI's Definition: "Public welfare measures provided free of charge."

- Given in the form of election promises by political parties.
- Many experts believe that in the recent times, **welfarism and freebies have become synonyms.**

Welfarism vs. Freebies

- **Welfarism:** Constitutionally rooted sustained efforts like PDS, MGNREGA, etc. **to build human capital.**
- **Freebies: Short-term handouts** (e.g., free power) lack sustainability, distort markets, discourage work, etc.

Multiple Approaches to Welfarism

Charity Approach	Needs Approach	Rights-Based Approach
Focus: Input, not outcome	Focus: Input & outcome for needs	Focus: Process & outcome for rights
Rich's moral duty to poor	Needs as valid claims	Rights as legal & moral claims
Individuals as victims	Individuals as development objects	Individuals & groups empowered to claim rights
Targets problem manifestation	Targets immediate causes	Targets structural causes & manifestations

Constitutional and Legal Perspectives

- **Directive Principles of State Policy (DPSP): Articles 38, 39, 41** highlight the **state's role** in promoting welfare, ensuring livelihood for all, preventing wealth concentration, etc.
- **Supreme Court Judgments:**
  - **Subramaniyam Balaji Case (2013):** Court upheld state distribution of items like TVs and laptops as aligned with DPSP.
  - **Ashwini Kumar Upadhyay v Union of India (pending):** Court is reviewing challenges to freebies in election campaigns.
- **Election Commission:** Urges transparency in electoral promises, asking parties to reveal funding for freebies.

Impacts of Freebies

Positive (Welfarism)	Negative (Freebies)
Basic Needs: food, health, housing, etc.	**Financial Burden:** Strains budgets, cuts infrastructure spending.
Gender Parity: Boosts enrolment (e.g., meals, bicycles).	**Creates dependency,** lowers productivity.
Inclusivity: Removes financial barriers for growth.	**Harms sustainability,** burdens future generations.
Political Participation: Engages voters, enhances democracy.	Used as populist **vote-buying tactic.**
Tackles **under-employment,** inter-generational mobility issues.	Weakens **manufacturing competitiveness.**

Steps to be taken

- **Policy Reforms:** Fiscal prudence, prevent leakages, expand insurance coverage & build consensus.
- **Role of Election Commission:** Regulate manifestos for transparency and accountability.
- **Skill Development:** Empower individuals to reduce freebie dependency.
- **Voter Awareness**
- **Intervention:** Form expert committees (comprising NITI Aayog, RBI and Finance Commission) to assess impact.
- **Global Lessons:**
  - **Sri Lanka's 2019 tax cuts** caused revenue loss and collapse.
  - **Venezuela's populist freebies** led to economic crisis.

1.3. ELECTION COMMISSION OF INDIA (ECI)

Why in the News?

Election Commission of India (ECI) celebrated 75th Years of its establishment and also observed **25th January as National Voters Day.**

About ECI

- **Genesis:** Established as a **permanent Constitutional Body on 25th January 1950.**
  - **National Voters' Day** celebrated annually on January 25 since 2011.
- **Constitutional Provision:** Part XV, Articles 324-329.
- **Statutory Provisions: The Chief Election Commissioner and other Election Commissioners Act, 2023** governs appointment, service, and tenure.
- **Key Role:** Conducts elections for Lok Sabha, Rajya Sabha, State Assemblies, President, Vice President.
- **Composition:** Chief Election Commissioner (CEC) and two Election Commissioners (ECs).

Key Functions of ECI: Election Management, Preparing Electoral Rolls, Implementing Model Code of Conduct (MCC), etc.

Key Provisions of the Chief Election Commissioner and Other Election Commissioners Act, 2023 (replaces 1991 Act)

Specification	Details
Qualifications	CEC/EC: Secretary-level post. Integrity, election experience
Search Committee	Law Minister (Head), 2 senior members. Prepares list of 5 candidates.
Select Committee	PM (Chair), Opposition Leader in LS, Cabinet Minister. Recommends to President.
Term of Office	6 years maximum (both as EC/CEC) or till 65. No reappointment.
Salary and Benefits	Matches Supreme Court Judge
Resignation and Removal	Resign to President. Removal - CEC: Like SC Judge; ECs: On CEC recommendation.
Legal Protection	Protected from legal action (both civil/criminal) for official duties

Challenges Faced by ECI

- **Autonomy Issues**
  - **Selection:** Government-dominated committees raise **bias concerns.**
  - **EC Removal:** CEC can recommend EC removal.
  - **Post-Retirement:** Silent on government posts after tenure.
  - Lack of **Independent Staff.**
- **Operational Issues**
  - **Powers:** ECI can't de-register parties.
  - **Rolls:** Duplicates, errors, exclusions remain.
  - **Malpractices:** Bribery, booth capturing hurt fairness.
  - **Turnout:** 30 crore miss on voting due to internal migration.
  - **Security:** Protecting sensitive areas is hard.
- **Emerging Challenges**
  - **Disinformation:** Fake news, deepfakes challenge fairness.**Way Forward for Enhancing ECI's Functioning.**
- **Autonomy**
  - **Appointments: Use SC's 2023 ruling** on collegium (with PM, LoP, CJI) in **Anoop Baranwal Case.**
  - **EC Protection:** Removal similar to SC judge **(255th Law Commission).**
  - **No Post-Retirement:** Except EC-to-CEC **(Dinesh Goswami Committee, 1990).**
  - **Secretariat:** Permanent ECI staff **(255th Law Commission).**
- **Operations**
  - **Legalize MCC:** Enforce with statutory backing.
  - **Participation:** Test **Remote Electronic Voting Machine (RVM)** for
  - Limit candidates to **one seat.**
- **Emerging Challenges**
  - **Tech:** Use AI for hate speech/deepfakes detection.
  - **Bogus Voting:** Facial recognition with Aadhaar-linked Voter ID.
  - **Research Hub** for election studies.

Key Initiatives of ECI

- **EVM:** Introduced 1977, piloted 1982 for modern voting.
- **Systematic Voters' Education and Electoral Participation (SVEEP):** Launched in 2009 for voter education.
- **cVIGIL App:** Started 2018 for MCC violation reports.
- **VVPAT:** Added 2013 for transparent paper trail.
- **National Electoral Roll Purification and Authentication Programme (NERPAP):** Since 2015 for clean electoral rolls.
- **International cooperation:** ECI as founding member in **Association of World Election Bodies (A-WEB), Stockholm and Commonwealth Electoral Network (CEN).**

1.4. ATROCITIES AGAINST SCHEDULED CASTES

Why in the News?

Standing Committee on Social Justice and Empowerment has raised concerns over the failure of States to establish mechanisms to address atrocities against Scheduled Castes.

Scheduled Castes and their background

- **Article 366 defines the term 'Scheduled Caste'.**
  - **First used in the Government of India Act of 1935.**
- **Article 341 allows the President to notify Scheduled Castes for a state or UT after consulting the State governor. Parliament can amend this list.**

Mechanism to tackle Caste based atrocities

- **Constitutional**
  - **Fundamental Rights:** Articles 14, 15, 16, 17.
  - **DPSP:** Article 46 (Educational and economic interests of SCs), Article 338 (National Commission for SCs).
- **Legal**
  - **Untouchability (Offences) Act, 1955.**
  - **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989.**
    - **Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Amendment Act, 2015** added new crimes of sexual offences against women of SC/ST.
  - **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013.**

Observations of Standing Committee on Social Justice and Empowerment

- Inefficiency in curbing atrocities against SCs due to **poor implementation of legal provisions.**
- **NAMASTE Scheme** not meeting zero fatality goals.
- **Lack of specific targets** in schemes like Pradhan Mantri Adarsh Gram Yojana (PMAGY).
- **Fund surrender in schemes like SHRESHTA** due to delays in state proposals.
- **Challenges in reaching the 27% GER target** for SCs in higher education due to delays in state plan submissions.
- **Inadequate execution of Pradhan Mantri Anusuchit Jaati Abhyudaya Yojana (PM-AJAY),** with fewer SC villages declared as Adarsh Grams.

Reason for Continued Atrocities Against SCs				
Complacency of State -> Absence of Protection Cells, police apathy -> Lack of relief and rehabilitation	**Poor Economic Status** -> Land Alienation -> Bonded labor -> About 34% of SCs below poverty line	**Rising Political Awareness** -> Due to 73rd and 74th Constitutional Amendment Acts -> Refusal of Traditional Works	**Social Prejudices** -> Dominance of other castes -> 97.7% of atrocities against SCs in 2022 from 13 States	**Failure to Enforce Legal Mechanism** -> Lack of enforcement of legal mechanisms -> Discrimination in education (Thorat committee, 2007)

Way forward

- Ensure **effective utilization of funds.**
- Set **quantifiable targets** for all schemes.
- Empower National Institute of Social Defence for **Drug Abuse prevention, rehabilitation,** etc.
- Identify poorest SC households for benefits under schemes such as **Scholarship for Higher Education for Young Achievers Scheme (SHREYAS).**
- Expand skill training schemes like **PM-DAKSH.**

1.5. STATUS OF DEVOLUTION TO PANCHAYATS IN STATES

Why in the news?

Recently, **Ministry of Panchayati Raj** released a report titled **"Status of Devolution to Panchayats in States – An Indicative Evidence Based Ranking".**

More in the News

- Prepared by **Indian Institute of Public Administration (IIPA), New Delhi,** the report examines Panchayats' ability to fulfil their roles under the 73rd Amendment.

About Devolution of Panchayat

- Devolution involves **transferring powers, authority, duties, or funds from a higher to a lower jurisdiction.**
- Local government, including panchayats, is a **state subject** in the Constitution, so **devolution to panchayats is at states' discretion.**

Key Highlights of Report

- **Panchayat Devolution Index:** Ranks States/UTs on 6 devolution dimensions. (Refer Image).
  - **'Function'** dimension has the **lowest national average.**
- **Top 3 States:** Karnataka, Kerala, Tamil Nadu.
- **Lowest 3 States/UTs:** Dadra & Nagar Haveli and Daman & Diu, Puducherry, Ladakh.
- **Devolution rose** from 39.9% to 43.9% (2013-14 to 2021-22).
- **Capacity Enhancement** increased from 44% to 54.6% due to initiatives like **Rashtriya Gram Swaraj Abhiyan** (RGSA).

Importance of Devolution Index

- **For citizens:** transparency in Panchayat operations and resource use.
- **For elected representatives:** data for advocacy and reform.
- **For government officials:** effective decentralization policies.
- **For policymakers:** assesses local governance health and reform needs.

Parameters of Panchayat Devolution Index

Framework

Whether the Constitutional provisions are adhered to by states

Function

Measures how panchayats fulfilled civic responsibilities like; sanitation, waste management etc.

Finances

Measures efficiency in devolution of funds to panchayats and sources of their funding.

Functionaries

Assess strength and performance of panchayat officials and infrastructure available to them

Capacity Building

How the knowledge and skills of panchayat officials were being expanded to fulfil and take on more responsibilities

Accountability

The framework in place to audit and monitor the functioning of panchayats

Significance of Devolution				
Improve service delivery	Aligns with 73rd amendment act	Strengthen grassroots democracy	Promote economic growth, self-reliance	Improve PRIs' fiscal health

Constitutional Provisions regarding Devolution			
243G	**243H**	**243I**	**243ZD**
State endows Panchayats with powers to function **as institutes of self-governments.**	State Legislatures **can authorize Panchayats to collect taxes, duties, tolls, fees.**	**State Finance Commission (SFC),** every five years, transfers resources to Panchayats.	**District Planning Committee** consolidates Panchayat, Municipality plans into district development plan.

Challenges regarding Devolution of Panchayat

- **Framework: Irregular elections and delays in delimitation.** E.g., Delayed elections for over 23,000 local bodies in Madhya Pradesh.
- **Function: Limited to traditional roles** (like civic duties), presence of **parastatal bodies,** etc.
- **Finances:** Inadequate resources and reliance on grants (95% of revenue).
- **Functionaries:** Lack of technical, administrative & support staff, like **one secretary for 17 Gram Panchayats.**
- **Capacity Building:** Poor infrastructure and training affect Panchayats.
  - E.g., Over 40,000 GPs still lack computers.
- **Accountability**: Low participation and awareness lead to corruption.
  - E.g., 70% of panchayats in Krishna district (Tamil Nadu) have been misappropriating funds.

Recommendations as per Report

- **Strengthening State Election Commission:** with powers like setting dates and delimitation; common electoral rolls.
- **Reserved seats:** E.g., freeze reservations for two/three terms.
- **Autonomy:** E.g., transfer Eleventh Schedule subjects to them, not parallel bodies.
- **Funding:** E.g., Form SFCs every 5 years, table reports in legislatures, etc.
- **Accountability:** strict financial oversight, independent audits, etc.
- **Manpower:** E.g., Grant Panchayats control over ad hoc staff and experts, allocate resources based on workload and local needs, etc.
- **Capacity Building:** Train PRI members in Local Public Service Management, covering systems, finance, etc.

1.5.1. PROXY REPRESENTATION IN PRIS

Why in the News?

Panel by Ministry of Panchayati Raj (MoPR) in **report, "Transforming Women's Representation in Panchayati Raj: Ending Proxy Participation,"** recommended ways for eliminating proxy participation in **Panchayati Raj Insititutions (PRIs).**

More in the News

- In **Mundona Rural Development Foundation vs UoI (2023),** Supreme Court ordered the committee to **study proxy participation in PRIs.**

Women's Reservation in PRIs

- **Constitutional Mandated (73rd Amendment, 1992):** reserving **1/3rd seats for women** in PRIs, later expanded to nearly **50% by 21 States** (Bihar first).
- **Current Representation of women:** 46.6%.
- **Issue of Proxy Representation:** E.g., **sarpanch pati.**

Key Reforms Proposed by the Committee

- **Strict Penalties & Punishments.**
- **Stronger Policies:** Kerala style **gender-exclusive quotas, swearing-in ceremonies,** etc.
- **Technological Solutions:** E.g., VR training and AI-powered legal guidance for women representatives in vernacular languages.
- **Accountability Mechanisms:** Helplines, watchdog committees, and whistleblower rewards.
  - **Panchayat Nirnay Portal:** Tracks elected pradhans' participation in meetings and decisions.

Importance of Women Participation in PRIs		
Greater Response to Women's Issues	**Better Community Development**	**Pathway to Higher Political Representation**
Twice as likely to address women's requests (MIT,2003)	Women-led councils prioritize water, sanitation, schools, etc.	Grassroots leadership aids women's rise in higher offices
Decentralization boosts maternal healthcare and safe deliveries	NCAER (2010) confirms community development impact	Builds pipeline for Lok Sabha & State Legislatures

1.6. COOPERATIVES

Why in the News?

Union Home Minister and Minister of Cooperation and Prime Minister of India inaugurated **the UN International Year of Cooperatives 2025 (IYC 2025).**

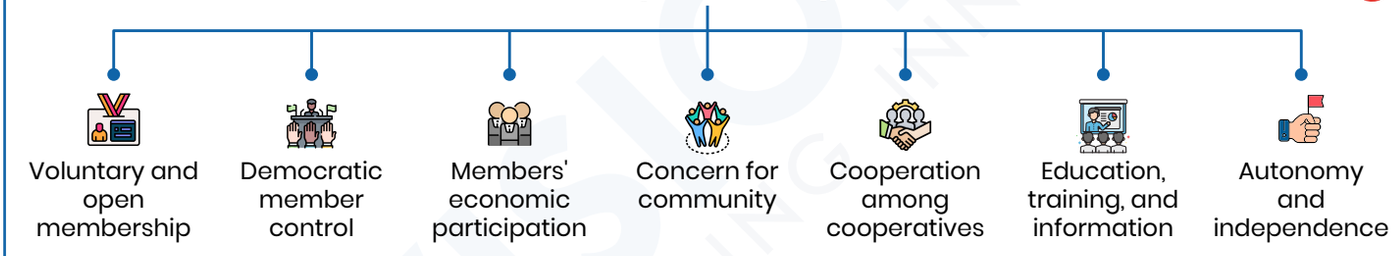
About IYC 2025

- **Proclaimed by:** UNGA in June 2024.
- **Theme:** "Cooperatives Build a Better World."
- **Objectives:** Raise awareness, promote growth, policy advocacy, etc.
- **Host:** Committee for the Promotion and Advancement of Cooperatives (COPAC).

What are Cooperatives?

- **Definition:** A voluntary group with shared economic goals.
- **Aim**: Helps members, especially the poor, through mutual aid.
- **Resources:** Pooled for collective benefit.
- **Cooperative Movement:** Boosted by the **International Co-operative Alliance** (ICA), a global NGO, founded in 1895.
  - **India hosted ICA's 2024 Conference,** themed **"Cooperatives Build Prosperity For All,"** matching "Sahkar Se Samriddhi."

Seven Principles of Cooperatives



Cooperatives in India

- **Genesis:** Started with the **Cooperative Credit Societies Act, 1904.**
- **Status:** India holds 27% of world's cooperatives.
- **Top 3 Sectors:** Housing, Dairy & Primary Agriculture Credit Societies (PACS).
- **Leading States:** Maharashtra (25%), Gujarat, Telangana, MP, Karnataka.
- **Constitutional Status:** 97th Amendment, 2011 added following
  - **Fundamental Right:** Article 19(1)(c).
  - **Directive Principle:** Inserted **Article 43B.**
  - **New Part IXB:** Articles 243ZH-243ZT.
- **Governance:**
  - **Multi-State:** Union List Entry 44; **Multi-State Cooperative Societies Act, 2002.**
  - **State:** State List Entry 32; respective State Acts.

Types of Cooperatives in India

- **Consumers Cooperatives** - Offer goods at low prices, **e.g., Kendriya Bhandar, Apna Bazar.**
- **Producers Cooperatives** - Aid small producers with resources, **e.g., Bayanika, Haryana Handloom.**
- **Cooperative Credit Societies** - Provide low-interest loans and accept deposits.
- **Cooperative Farming Societies** - Pool resources for shared profits while retaining land ownership.
- **Housing Cooperatives** - Offer affordable housing with installment payments.
- **Marketing Cooperatives** - Help farmers sell produce profitably, **e.g., Amul.**

Significance of Cooperatives in Socioeconomic Development

- **Social Cohesion:** E.g., **Housing cooperatives** tie residents to urban policies.
- **Empowerment:** Equality, Bargaining and Leadership.
- **Financial Inclusion:** Cheap credit for farmers.
- **Wealth Inequality:** Low-rate loans help the marginalized, spur self-employment.
- **Moral Values:** Fosters unity and trust for social stability.

Challenges Faced by Cooperatives in India

- **Governance**
  - **Government interference:** Limits borrowing & investments.
  - **Politicization:** Elites control management.
  - **Unawareness:** Goals/rules unclear to members.
  - **Rivalries:** Disputes cut participation.
- **Reach and Efficiency**
  - **Regional Imbalance:** Weak in NE & eastern states.
  - **Small Scale:** Low membership & resources.
  - **Narrow Focus:** Miss broad solutions.
- **Operations**
  - **Poor Audits:** Irregular and weak.
  - **No Coordination:** Levels misaligned.
- **Weaknesses**
  - **Scale Issues:** Financial/tech limits.
  - **Skill Shortage:** Lack of training.
  - **Bad Management:** Little career growth.
  - **Digital Gap:** Only 45% members know digital tools.

Key Initiatives to Strengthen Cooperatives in India

Institutional Support	National Cooperative Development Corporation (NCDC) (1963) Ministry of Cooperation (2021) National Cooperative Policy
Legal & Governance Reforms	Multi-State Co-operative Societies (Amendment) Act, 2023 Model Bye-Laws for PACS
Economic & Infrastructure Growth	**World's Largest Grain Storage Plan:** Ties PACS to food security. **Margdarshika:** Aims for 2 lakh new cooperatives. **'White Revolution 2.0' SOPs for women empowerment:** Targets 1,000 lakh kg/day milk by 2029.
Technology & Financial Inclusion	**National Cooperative Database (NCD):** Data on cooperatives. **NUCFDC** (Umbrella Organization for Urban Cooperative Banks): Regulates urban banks. **'Cooperation among cooperatives' SOPs:** Financial access via bank accounts.

Way forward to Strengthening the Cooperative Movement in India

- **Structural Reforms:** Merge Weak Societies.
- **Operational Efficiency:** Professional Managers, Streamline Loans, Coordination, etc.
- **Capacity Building:** Skill Development & Digitization.
- **Awareness & Education.**
- **Legal Framework: Narasimham committee** recommendations for cooperative banking.
- **Transparency:** RTI inclusion, CBI/CVC probes for malpractice, stronger audits for professionalism, etc.

1.7. LOKPAL AND LOKAYUKTA

Why in the News?

The Lokpal of India, a statutory anti-corruption body established under **Lokpal and Lokayuktas Act, 2013** celebrated its first foundation day in **January 2025.**

About Lokpal and Lokayukta Act, 2013

- Set up **Lokpal (union)** and **Lokayuktas (states) to tackle corruption** by public functionaries.
- **2016 amendment:** Allowed the **largest opposition party leader** to join the Lokpal panel.
  - **Section 44** was updated for assets/liabilities disclosure.

About Lokpal

- **Composition:** Chairperson, maximum 8 Members, 50% Judicial.
  - At least 50% from SC/ST/OBC/Minorities/women.
- **Term:** 5 years or age 70.
- **Appointment:** President, via Selection Committee consisting of –
  - PM (Chair), Lok Sabha Speaker, Lok Sabha Opposition Leader (or leader of largest party), CJI/nominated Judge, eminent jurist (nominated by President).
- **Jurisdiction:** PM (with exceptions like atomic energy, security, etc.), Ministers, MPs, Central officers (Group A,B,C,D).
- **Powers:** Gets CVC reports, issues guidelines, Civil court powers for inquiries, etc.

About Lokayukta

- Established **at state level by law.**
- The structure, eligibility, term, etc. **varies from state to state.**

Eligibility Criteria for Lokpal

- **Chairperson:** Sitting/retired Chief Justice of India, Supreme Court Judge, or eminent person.
- **Judicial Members:** Sitting/retired Supreme Court Judge or High Court Chief Justice.
- **Other Members:** Eminent Person - 25+ years expertise in anti-corruption, public admin, vigilance, etc.
- **Age:** Minimum 45 years.
- **Persons Ineligible**
  - **Political Affiliation** - MP, State/UT Legislator, Panchayat/Municipality member.
  - **Dismissal** - Removed/dismissed from Union/State service.
  - **Office of Profit** - Holds trust/profit office or political party affiliation.
  - Convicted of offence involving **moral turpitude.**

Issues with the Lokpal/Lokayukta Office

- **Complainant Protection:** Weak whistleblower safeguards.
- **Inadequate provisions** for appeal.
- **Political Bias:** Committee's political members influence Lokpal. Also, **'Eminent jurist' undefined.**
- **PM Jurisdiction:** Probes may undermine leadership.
- **Other Issues: Not constitutional,** Delays, 7-year complaint limit, etc.

Way Forward

- **2nd ARC:** Keep PM out of Lokpal.
- Add **constitutional backing** with **financial autonomy.**
- **Decentralization of power** across accountable bodies.
- **11th Lokayukta Conference (2012):** Lokayukta as nodal complaint agency, control over state probes, cover bureaucrats, etc.

Conclusion

Publius Comelius Tacitus: "The more corrupt the state, the more laws". Hence, better enforcement beats new laws.

1.8. 10 YEARS OF NITI AAYOG

Why in the News?

On **January 1, 2025,** National Institute for Transforming India (NITI) Aayog **celebrated its 10th year of foundation.**

About NITI Aayog

- NITI Aayog is a **government think-tank** set up via Union cabinet resolution, replacing the Planning Commission.
  - **Not a Constitutional or statutory body.**
- **Mandate:**
  - **Monitor SDGs** in India
  - Promote **competitive and cooperative federalism**
- **Composition:**
  - **Chairperson:** Prime Minister (PM).
  - **Governing Council:** PM, State/UT CMs (with legislature), Lt. Governors, maximum 4 Ex-Officio Union Ministers (PM-nominated), Vice Chairperson (PM-appointed), Full-Time Members, Special Invitees (PM-nominated experts).
  - **Regional Councils:** Temporary, PM-convened, include CMs/Lt. Governors of affected regions.
  - **CEO:** PM-appointed, Secretary rank, fixed tenure.
- **Key Objectives:**
  - Develop **village-level plans,** focus on **weaker sections.**
  - **Integrate national security** into economic policy.
  - Build **knowledge, innovation, entrepreneurial systems.**
  - Resolve **inter-sectoral/departmental issues.**
- **Other Features:**
  - Supported by **Development Monitoring and Evaluation Organisation** (DMEO)**, Atal Innovation Mission** (AIM), etc.
  - **Activities:** Policy/programme framework, cooperative federalism, monitoring/evaluation, think-tank/innovation hub.

Achievements of NITI Aayog

- **Cooperative Federalism:** Links centre and states. **E.g., 'Team India Hub'**
- **Competitive Federalism:** Via indexes. **E.g.,** Fiscal Health, Water, Energy Indexes.
- **Policy Advice:** Focuses on strategy, not finance. **E.g.,** Set up **State Institutions of Transformation (SITs)** in states.
- **Innovation and Digital:** Via Atal Mission, Knowledge Hub, etc.
- **Regional Interventions: E.g.,** Northeast Forum, SATH-E, Poshan, Health, Education Indexes.
- **SDGs:** Syncs programs with goals. **E.g.,** SDG Index.

Challenges: Budgetary Constraints; Inter-State Disparity; Overlapping roles with ministries; Lacks Statutory Status; Non-Binding Recommendations.

NITI Aayog Initiatives, Reports, and Indexes

Key Initiatives	Recent Reports	Indexes
Atal Innovation Mission	SAFE Accommodation	SDG India Index
National Data and Analytics Platform	Enhancing Domestic Coking Coal Availability	Composite Water Management Index
Aspirational District Programme	Pathways for Edible Oil Growth	State Health Index
Women Entrepreneurship Platform	SATH-E Report	India Innovation Index

Conclusion

- NITI Aayog has influenced policy through **federalism, planning, and innovation**, but faces limits. It requires **more autonomy, resources, and enforcement** for improved state-central coordination.

AHMEDABAD | BENGALURU | BHOPAL | CHANDIGARH | DELHI | GUWAHATI | HYDERABAD | JAIPUR | JODHPUR | LUCKNOW | PRAYAGRAJ | PUNE | RANCHI

1.9. INTERNET SHUTDOWN

Why in the News?

India saw 60 mobile internet shutdowns in 2024, the **lowest in eight years**, per the Software Freedom Law Centre's Tracker. The drop from 96 in 2023 stems from **fewer shutdowns in Manipur and Jammu and Kashmir.**

Provisions for Internet Shutdowns in India

- **CrPC, 1973:** Before 2017, under Section 144 (now 163 of BNSS).
  - Allowed Magistrates to curb gatherings/activities.
- **Telegraph Act, 1885 (2017 amendment):** 2017 Rules permit 15-day shutdowns.
  - **Grounds:** Public emergency/safety (undefined).
  - **Authority:** Home Secretary.
  - **Review:** Committee (Cabinet/Chief Secretary) within 5 days.
- **Article 19(2):** Restricts speech for security, public order, etc.

Arguments in Favor of Internet Shutdowns	Arguments Against Internet Shutdowns
Security: E.g., J&K post-370 shutdowns curbed militancy. **Communal Violence:** E.g., 2023 Manipur, Haryana shutdowns limited clashes. **Misinformation:** E.g., 2020 Delhi riots curbed fake news. **Law and Order:** E.g., CAA/farm bill protest shutdowns. **Exam Integrity:** E.g., 2021 Rajasthan REET shutdown.	**Economic Loss:** $1.9 billion, $118 million in investment lost in first half of 2023. **In 2020:** $2.8 billion loss to India from 129 shutdowns, impacting 10.3 million people. **379 jobs** lost per day. **Human Rights:** Women can't report crimes. **Rights Violation:** Limits speech (Article 19), info access. **Press Freedom:** E.g., 2019 J&K journalism impacted. **Education/Healthcare:** Disrupts learning, telemedicine.

Key Judgements

- **Faheema Shirin v. State of Kerala:** Kerala HC recognized internet as **Fundamental Right (Art. 21)**
- **Anuradha Bhasin v. union of India:** SC reaffirmed internet freedom as Fundamental under **Article 19(1)(a).**

Recommendations of the Parliamentary Standing Committee on Communications and Information Technology (Report: 'Suspension of Telecom Services/Internet and its Impact', 2021)

- **Global best practices:** Department of Telecommunication (DoT) to study and **practices from democratic countries.**
- **Suspension grounds: Codify criteria and mechanisms** to justify internet shutdowns.
- **Proportionality:** DoT and MHA to set proportionality rules and shutdown lifting procedures.
- **Review Committee:** Include **retired judges** and public members in the **3-member review committee.**
- **Selective bans:** DoT to frame policy for selective bans.
- **Shutdown effectiveness:** DoT and MHA to assess shutdown impacts on safety and emergencies.

1.10. BHARATIYA VAYUYAN VIDHEYAK, 2024

Why in the News?

President recently approved the Bharatiya Vayuyan Vidheyak (BVV), 2024 to replace the Aircraft Act, 1934, modernise India's aviation, improve safety, and meet global standards.

Key features of BVV, 2024

Parameters	Retained from Aircraft Act, 1934	Addition/ Changes in BVV, 2024
Regulatory Structure	Establishes 3 bodies: **DGCA, BCAS, and AAIB** under central government oversight.	Power to issue **Radio Telephone Operator (Restricted) Certificate and licence** transferred to DGCA.
Regulation of aircraft-related activities	Regulates **manufacturing, use, operation, and trade** of aircraft.	Adds regulation of **aircraft design.**
Power to make Rules	With central government on **licensing, air transport services,** and implementation of **Convention on International Civil Aviation,1944**	With central government on **radio telephone operator certificate and licences** under the **International Telecommunication Convention.**
Offences and Penalties	up to **2 years imprisonment or ₹1 crore fine** for violations like carrying prohibited goods.	**Allows central government to specify** civil or criminal penalties for rule violations.
Adjudication of penalties	Adjudication by an officer of **Deputy Secretary rank or above.** First appeal to a higher-ranked officer.	**Second appeal** available to an officer of higher rank than the First Appellate Officer.

Concerns related to BVV 2024

- **Lack of independence of DGCA:** Central government oversight unlike other regulatory bodies.
- **Appellate System:** Appeals limited to Union Government only.
- **Arbitration:** Government's unilateral arbitrator appointment may violate equality rights.

Aviation Governance in India

- **Ministry of Civil Aviation (MoCA):** Manages policy, rules, and regulations for aviation.
- **Organizations under Ministry of Civil Aviation**
  - **Directorate General of Civil Aviation (DGCA):** Regulatory body for civil aviation safety.
  - **Bureau of Civil Aviation Security (BCAS):** Responsible for security standards at airports.
  - **Airport Authority of India (AAI):** Manages airport development and modernization.
  - **Aircraft Accident Investigation Bureau (AAIB):** Investigates aircraft accidents.
  - **Airport Economic Regulatory Authority of India (AERA):** Regulates tariffs and monitors performance of aeronautical services.
- **Key legislations:**
  - **Aircraft Act 1934(and Aircraft Rules, 1937):** Governs civil aviation activities.
  - **AERA Act, 2008:** Regulates airport service tariffs.
  - **FDI Policy:** Allows up to 100% FDI in scheduled Air Transport Service/Domestic Scheduled Passenger Airline.

Key Initiatives for India's Aviation Sector

- **Policies:**
  - **National Civil Aviation Policy, 2016:** Enhances regional connectivity with an integrated eco-system.
  - **Vision 2040:** Strategic development plan for aviation.
- **Schemes/ Initiatives:**
  - **RCS-UDAN:** Aims for 1,000 routes and development of 100 airports by 2024.
  - **Maintenance, Repair and Operations (MRO):** Budget incentives for maintenance operations.
  - **Airport Privatization:** 25 airports via PPP under the National Monetization Pipeline.
  - **Technological Interventions:** NABH Nirman (for airport capacity), Digi Yatra (paperless travel), AirSewa (online grievance redressal), GAGAN (for air traffic management).
- **International Cooperation:**
  - **Delhi Declaration on Civil Aviation (2024):** Enhances regional aviation cooperation.
  - **Carbon Neutrality:** Standardization of Carbon Accounting and Reporting framework of Airports.

Conclusion

India's aviation sector is advancing in infrastructure, connectivity, and sustainability, with BVV 2024 aiming to clarify legal frameworks for further growth.

1.11 OVERSEAS CITIZEN OF INDIA (OCI)

Why in the News?

Ministry of External Affairs has dispelled concerns regarding OCI cardholders being reclassified as foreigners, confirming that the **existing OCI rules remain unchanged.**

About OCI Cardholders

- Under the **OCI scheme introduced in 2005** by amending the Citizenship Act, 1955
- **Eligibility:**
  - Foreign nationals **(except from Pakistan or Bangladesh),** who were Indian citizens or eligible for citizenship on or after January 26, 1950, or related to territories merged with India post-August 15, 1947, or their descendants, etc.
  - Also, **foreign spouses** of Indian citizens or OCI cardholders, married for at least two years.
  - Excludes foreign military personnel.
- **Merged PIO and OCI** into one category in 2015.

Benefits for OCI card holders

- **Lifetime,** multi-entry visa for India.
- **Similar rights as NRIs** in financial, economic, and educational fields, **except land acquisition and adoption.**
- Eligible for **Indian citizenship after 5 years** of OCI status, with one year of residence in India.
- Can enroll in the **National Pension Scheme** similar to NRIs.

Restrictions Related to OCI Cardholders

- Does not grant **dual citizenship or voting rights.**
- Ineligible for **constitutional posts, judicial positions, or Parliament membership,** etc.
- **Excluded from public employment,** except specific posts designated by the Central Government.
- **Special permission needed** for research, mountaineering, missionary work, journalism, or visiting restricted areas.

1.12. NEWS IN SHORTS

1.12.1. PRESIDENT'S RULE IN MANIPUR

President of India issued Proclamation imposing President's rule in Manipur (11th for state), placing the state assembly under suspended animation.

About President's Rule

- **Constitution:** Under **Article 356,** if the President (on the Governor's report), finds the State government cannot follow Constitutional provisions.
  - Also, **Article 365** permits a **"Constitutional Emergency"** if a State disobeys Union directions.
- **Duration and Approval:** As per **Article 356 (3),** it lasts **only two months** unless Parliament (Both Houses) approves it by **simple majority.**
  - o If approved, it **extends to six months, (maximum 3 years** with Parliamentary **approval every 6 months).**
- **Revocation:** By a subsequent Presidential proclamation.
- **Consequences:**
  - **Governor administers the State on President's behalf,** aided by the Chief Secretary or advisers.
  - President can transfer **State Legislature's powers to Parliament.**
  - **High Court** remains **unaffected.**

S R Bommai Vs Union of India (1994)

- Supreme Court ruled that **Article 356** proclamations are subject to **judicial review.**
- The President can dissolve a state assembly **only after Parliament approves,** until then it stays suspended.

1.12.2. RIGHT TO ACCESS TO JUSTICE NOT ABSOLUTE: SUPREME COURT

Acknowledging the **right to access justice** as a democratic cornerstone, SC recently penalized a petitioner for filing multiple **frivolous litigations** burdening the judicial system.

- **Frivolous litigation:** A lawsuit lacking legal or factual basis, aimed at harassment or delaying justice.

- Issue addressed earlier in Subrata Roy **Sahara Vs Union of India** (2014), **Dalip Singh v. State of Uttar Pradesh** (2010), etc.

Right to Access to Justice

- **Meaning:** A rule of law principle enabling people to seek remedies through justice institutions.
  - SC in **Anita Kushwaha v. Pushap Sudan** (2016) ruled it a **Fundamental Right under Articles 14 and 21.**
- **Essential Elements:**
  - **Adjudicatory Mechanism:** Court, Tribunal
  - **Affordable Adjudication:** Low cost, support for poor
  - **Speed:** Quick & efficient trials
  - **Accessibility:** Only seat of SC in Delhi, overburdened court, etc.

Other Provisions/Mechanisms

- **Constitutional**
  - **Preamble** ensures social, economic, and political justice.
  - **Article 39A** (free legal aid), **Articles 32 and 226** (remedies and writs).
- **Public Interest Litigation:** Relaxing locus standi.
- **Alternative Dispute Redressal (ADR) Mechanisms:** Informal, low-cost grievance redressal.

1.12.3. GOVT TO SET UP DEREGULATION COMMISSION

Prime Minister announced that Government will set up Deregulation Commission **to Reduce State's role in governance.**

- PM also highlighted the **Jan Vishwas Bill 2.0** (announced in the 2025-26 Union Budget), to reduce bureaucratic hurdles by easing regulations.
  - The Bill **aims to decriminalize over 100 outdated laws** to boost **ease of doing business.**

About Deregulation

- It is **reduction or elimination of government oversight** of an industry.
- **Global Initiatives:** DoGE (US); Better Regulation Framework (UK); Ministry of Regulation (New Zealand).

Challenges of deregulation		
Market Monopolization: Larger firms may dominate	**Potential for Exploitation:** Unethical practices (like price gouging)	**Lack of Transparency:** Companies may withhold information, affecting public trust

Significance of Deregulation in Fueling Economic Activity

- **Boosts Growth:** For 8% growth India **needs investment to rise from 31% to 35% of GDP.**
  - E.g., **Japan and China** grew via deregulation.
- **Enhances Economic Freedom:** Cuts bureaucracy, boosting competition.
  - E.g., **Jan Vishwas Act 2023** eased 183 provisions in 42 Acts.
- **Reduces MSME Costs:** Due to simpler rules.
  - E.g., **Haryana & Tamil Nadu** relaxed building regulations.
- **Enhances Competitive Federalism:** E.g., **Andhra Pradesh, Karnataka & Haryana** eased night shift rules for women.

1.12.4. AMENDMENT TO PRISON MANUAL AND CORRECTIONAL SERVICES ACT

Ministry of Home Affairs amended the **Model Prison Manual, 2016, and Model Prisons and Correctional Services Act, 2023,** to tackle caste-based discrimination in prisons nationwide.

- Amendments align with the SC's ruling in **Sukanya Santha vs. UoI & Others,** addressing caste-based discrimination.
  - SC mandated that **"habitual offenders"** in prison manuals follow State legislative definitions—**individuals repeatedly convicted within five years** for separate offenses, upheld on appeal.

Prisons in India

- **Governance:** State responsibility **(State List-Entry 4)**
- **Legal Framework:** Prison Act, 1894
- **Reform:** 'Model Prison Act 2023'.

Key Amendments

- Prison authorities **must prevent caste-based discrimination,** classification, or segregation in duty or work allocation.
  - Caste discrimination violates **Articles 14 (equality), 15 (non-discrimination), and 17 (untouchability abolition).**
- The **'Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013'** is binding in prisons.
  - **Manual scavenging or hazardous sewer/septic tank cleaning** in **prisons is banned.**

1.12.5. THE BOILERS ACT, 2025

The Act **replaces Boilers Act, 1923** and incorporates the provisions in consonance with the Jan Vishwas (Amendment of Provisions) Act, 2023.

- The Act will ensure the **safety of life and property of persons** from the dangers of explosions of steam boilers.
- **About Boilers:** Falling under the **concurrent list**, boilers are vessels **generating steam under pressure.**

Key Provisions

- **Regulation**: A **Central Boilers Board** will be constituted to oversee boiler design, manufacture, and use.
- **Inspection**: To be conducted by State Inspectors or third parties.
- **Ease of Doing Business (EoDB)**: Only 4 serious offences from 7 previous offences remain criminal; others now face penalties via executive action.

Issues

- **Safety**: State exemptions could compromise safety.
- **Limited Judicial Recourse**: Central and state decisions are not challengeable in regular courts; **only via High Court under writ petitions** (Article 226).
- **EoDB**: No set timelines for inspections or boiler modifications.

1.12.6. State Consent for CBI

Supreme Court ruled that **CBI doesn't need state government sanction to file cases under Central laws** like the Prevention of Corruption Act against Central employees in a state.

- This **reversed an Andhra Pradesh High Court ruling** dismissing cases for lack of state consent.

About State Consent for CBI

- **Law**: Section 6 of **Delhi Special Police Establishment (DSPE) Act, 1946** mandates state consent for CBI to probe crimes in a state.
- 2 **Consent types**: General and Case-specific.

1.12.7. Panchayat Se Parliament 2.0

Lok Sabha Speaker launched **Panchayat Se Parliament 2.0.**

About Panchayat Se Parliament 2.0

- Organised by **National Commission for Women, Lok Sabha Secretariat, and Tribal Affairs Ministry**.
- Aims to **empower ST women from Panchayati Raj** with knowledge of Constitution, Parliament, and governance.

1.12.8. Viksit Panchayat Karmayogi' Initiative

Ministry of Personnel, Public Grievances & Pensions launched **'Viksit Panchayat Karmayogi'** Initiative on Good Governance Day.

- **Good Governance Day, 25th December**, honors Atal Bihari Vajpayee's birth anniversary.

About Viksit Panchayat Karmayogi' Initiative

- **Aim**: Boost **Panchayati Raj Institutions' (PRIs)** capacity with tools and knowledge for effective governance and planning.
- Part of **'Prashasan Gaon Ki Aur' campaign**.
- Promotes **decentralized,** grassroots decision-making.

1.12.9. SC Guidelines on Mercy Petition

Supreme Court (SC) issued guidelines on processing of Mercy Petitions to States/UTs

Guidelines from Pradeep Yashwant Kokade case

- **Dedicated Cells**: States/UTs to establish for prompt processing.
- **Judicial Officer**: To be attached to dedicated cell.
- **Information Sharing**: Forwarded to cells from prison authorities.
- **Coordination**: With Governor and President's offices.
- **Electronic Communication**: Preferred for efficiency.
- **State Government to issue executive orders** for handling procedures.
- **Compliance Reporting**: Within three months.
- **Guidelines to Sessions Courts**: Record cases and notify prosecutors or agencies for pending appeals.
- **Execution Warrants**: To be issued by the State post-death penalty enforcement.

Other Significant Observations by SC

- **Impact of Delays**: Dehumanizing effect on convicts, **violating Article 21.**
- **Right to Challenge Delay**: Under Article 32 (SC) and Article 226 (High Court).
- **Case Specific Determination**: What constitutes undue or inordinate delay?

About Mercy Petition

- **Constitutional Framework**: President (Article 72) and Governor (Article 161) have the power to grant pardons or commute sentences.
  - SC in **Maru Ram vs. Union of India (1981):** President must act **based on the Council of Ministers' advice.**
- **Legal Framework**: Covered under Section 472(1) of **Bharatiya Nagarik Suraksha Sanhita (BNSS) 2023.**

1.12.10. E-Courts Mission Mode Project Phase III

Union Cabinet approved Phase III of the e-Courts Mission Mode Project.

- **e-Courts Project**: Active since 2007 for ICT in Indian Judiciary **under National e-Governance Plan**. Phases I & II from 2011-15 and 2015-23.

About e-Courts Phase III

- **Central Sector Scheme**: 4 years (2023-2027), Rs.7,210 crore budget.

- **Objective**: Unified tech platform for judiciary, paperless court-stakeholder interaction.
- **Implementation**: By **High Courts** and funds **via Department of Justice** on e-Committee's (Supreme Court) advice.

Components of e-Court Phase

- **S3WAAS Platform**: Secure, efficient data storage.
- **e-Seva Kendra**: Electronic services for users.
- **CLASS System**: Live audio-visual courtroom streaming.
- **Scanning and Digitization**: Converts physical to digital records.
- **Cloud Infrastructure**: Scalable storage and computing.
- **Virtual Courts**: Remote court proceedings via digital platforms.

Significance of Digitalization

- **Judicial Modernization**: Data-driven decisions, fully digital justice.
- **Reducing Case Pendency**: AI and OCR integration for efficiency.

1.12.11. Edelman Trust Barometer

The annual Edelman Trust Barometer was recently released before the **World Economic Forum** Annual Meeting.

About Edelman Trust Barometer

- Conducted by **Edelman Trust, it surveys 28 countries** to explore trust in government, media, business, and NGOs.
- **Key Findings**
- Among **low-income groups, India dropped to 3rd place**, behind China and Indonesia, for trust in government, businesses, and media.
- **Among high-income groups**, India ranked 4th.
- India placed **13th for trust in Indian-headquartered companies** by people in other countries.

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- Development of Advanced answer writing skills
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- Special emphasis to Essay & Ethics

1.13. TEST YOUR LEARNING

Prelims Questions

1. With reference to the Election Commission of India (ECI), consider the following statements:

1. It is a constitutional body established under Article 324.
2. The Chief Election Commissioner (CEC) can be removed in the same manner as a High Court judge.
3. The 2023 Act governing the ECI mandates a collegium including the Prime Minister, CJI, and Leader of Opposition for appointments.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 1 only

(c) 1 and 3 only

(d) 1, 2 and 3

2. Consider the following pairs:

Scheme/Concept Associated	Constitutional Article
1. State's role in welfare	Article 38
2. Panchayat Devolution	Article 243G
3. Cooperative Societies	Article 19(1)(g)
4. Liberty	Article 21

Which of the pairs are correctly matched?

(a) 1 and 2 only

(b) 2 and 4 only

(c) 1, 2 and 4 only

(d) All four

3. Which of the following reports or bodies is correctly matched with its recommendation on simultaneous elections?

(a) Sarkaria Commission – Simultaneous Lok Sabha & Rajya Sabha elections

(b) Law Commission 2018 – Holding simultaneous polls for Parliament & State Assemblies

(c) ARC II – Reducing number of political parties contesting elections

(d) ECI 1952 Report – Delimitation freeze till 2026

4. Which of the following is/are part of the governance reforms suggested by the Election Commission of India?

1. Legalization of the Model Code of Conduct (MCC)
2. Use of AI for detecting deepfakes
3. Remote Electronic Voting Machine (RVM) testing
4. Capping the number of seats a candidate can contest

Select the correct answer using the code below:

(a) 1 and 2 only

(b) 1, 2 and 3 only

(c) 2, 3 and 4 only

(d) All of the above

5. With reference to the Lokpal and Lokayukta Act, 2013, which of the following statements is NOT correct?

(a) Lokpal is a constitutional body.

(b) The Chairperson must be a former CJI or an eminent person.

(c) The Lokpal can inquire into allegations against the Prime Minister.

(d) At least 50% of Lokpal members must be from SC/ST/OBC/women/minorities.

Mains Questions

Q1. (150 words)

"Freebies often blur the line between welfare and populism. In light of recent judicial scrutiny, examine the constitutional and economic implications of freebie culture in Indian politics."

Q2. (250 words)

"The Election Commission of India is a constitutional watchdog of democracy. Critically examine its evolving role and the reforms needed to strengthen its autonomy and efficiency."

INTERNATIONAL RELATIONS

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2.1. GEO-ECONOMIC FRAGMENTATION

Why in the News?

The Economic Survey 2024-25 highlights a global shift from **economic integration** to **geo-economic fragmentation (GEF)**, signaling the **replacement of globalization**.

About Geo-Economic Fragmentation (GEF): The New Global Reality

- **GEF**: Policy-driven reversal of global economic integration, driven by strategic concerns.
- **Examples**:
  - **Friendshoring**: Supply chains shift to politically aligned nations (e.g., Apple moving iPhone production from China to India).
  - **Nearshoring**: Outsourcing to nearby countries (e.g., German firms using Polish customer service).

From Globalization to GEF

Rise of Globalisation (1980s-2000s)	Peak Globalisation (2000s-2010s)	Slowbalization (2010s)	Fall of Globalisation (2020s)
Trade liberalisation & cross-border investments integrated economies, boosted growth and reduced poverty. E.g., Global trade rose from 39% (1980) to 60% (2012) of world GDP.	Hyper-globalisati on saw unprecedented trade, FDI, etc.	Rising inequality, geopolitical tensions, and outsourcing backlash fueled discontent with globalisation's uneven benefits.	**Geo-Economic Fragmentation (GEF)** intensified via trade wars, tech decoupling, etc.

Key Characteristics of GEF

- **Geopolitical Alignments** and **Retreat from Multilateralism.**
- **Economic BlocS** and **Strategic National Policies**.

Channels of GEF

- **Trade Restrictions**: Tariffs, non-tariff barriers.
- **Tech Decoupling**: Reduced collaboration in high-tech sectors (e.g., U.S. **CHIPS Act** vs. China's **Made in China 2025**).
- **Capital Flow Reduction**: Declining FDI in non-aligned economies.

Impacts of GEF

- **Economic Losses**: Slower global growth; threatens India's **$5T economy goal by FY28**.
- **Investment Shifts**: FDI in India hit a **5-year low in FY24**.
- **Labor Market**: Restricted migration reduces skills flow and remittances.
- **Decline in Globalization**: Weakens climate cooperation, tech diffusion, and cultural exchange.

Way Forward

- **Domestic Supply Chains**: Boost self-reliance (e.g., **KABIL** for critical minerals like lithium).
- **Regional Partnerships**: Leverage **BIMSTEC, IPEF** for Indo-Pacific trade.
- **Tech & Innovation**: Focus on **AI, renewables, and digital transformation**.

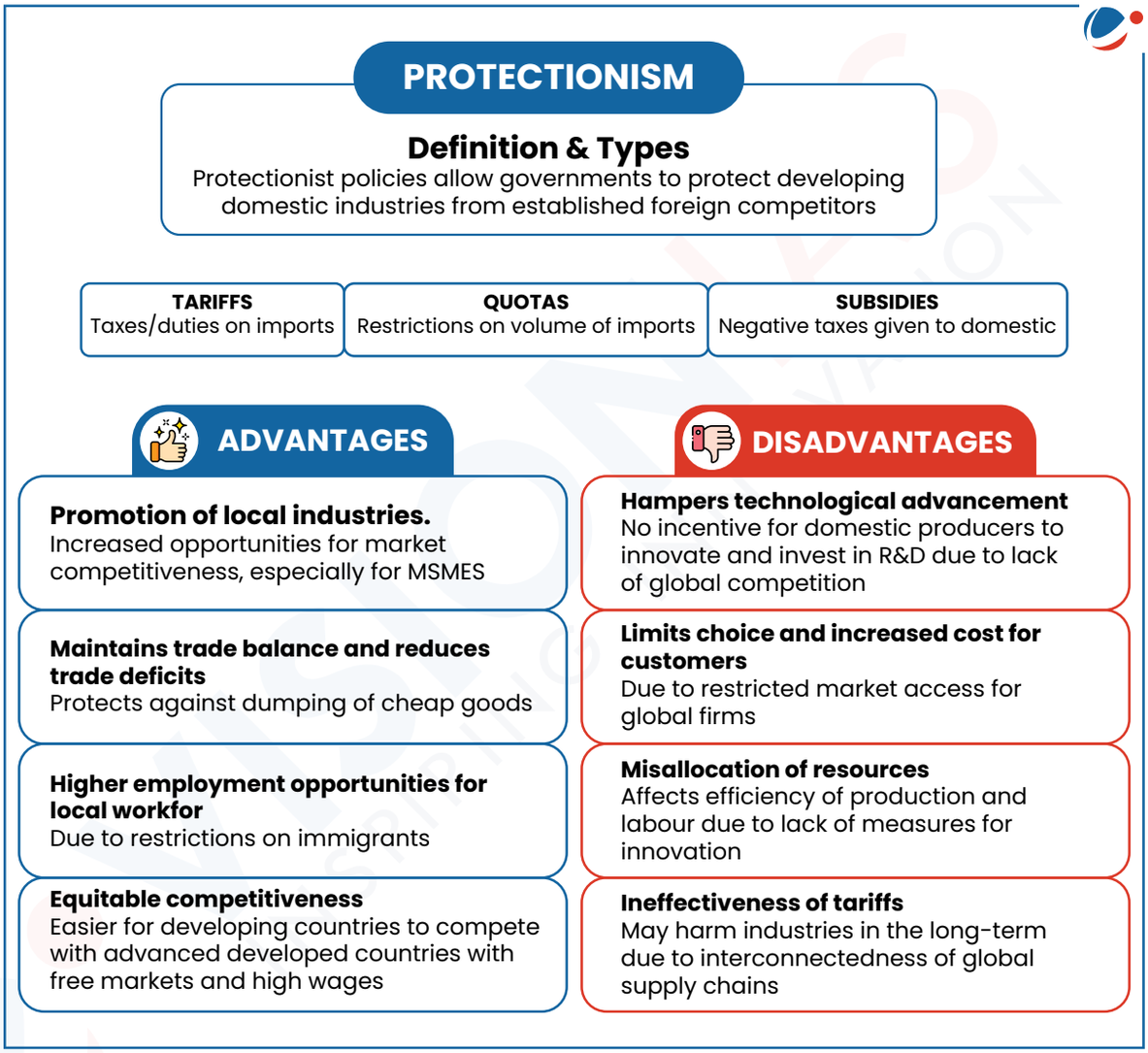
2.2. USA'S PROTECTIONIST MEASURES

Why in the News?

The USA, upholding its **'America First Policy,'** has decided to **exit from key global institutions** like the **World Health Organization (WHO), Paris agreement** and the **International Criminal Court** (ICC).

More on the News

- USA had earlier exited **Paris Agreement in 2017 but** rejoined in 2021 and initiated process of withdrawal from **WHO in 2020**, reversed in 2021.
- USA is also engaged in a tariff war to reduce **trade deficit** of the USA.
- These protectionist measures are being promoted as idea of **economic nationalism**.



Previous Protectionist Measures by the USA

- **Withdrawal from Global Institutions.**
  - **UNESCO** (withdrawal in 2017, rejoined in 2023).
  - **TPP Agreement (withdrawal in 2017).**
  - **WTO's Dispute Settlement Body's Appellate Body** rendered dysfunctional by blocking appointments.
  - **NAFTA** terminated in 2020 and replaced by United States-Mexico-Canada Agreement (USMCA).

Potential Impact of these Measures

- **Impact on Multilateralism/ Multilateral Institutions.**
  - **Weakening of Global international order**: USA's **'sovereigntist view of international law'** accelerates the **weakening of the normative authority of multilateral institutions**.
  - **Threat to global research.**
  - **Funding**: Impacting **developmental and emergency works**.
  - E.g., U.S. contributions being **15.6% WHO's total revenue in the 2022-2023**.
  - **Environmental impact:** U.S. policy is against the principle of **Common but Differentiated Responsibilities (CBDR).**
  - **Global Trade and Supply Chains disruption.**

- **Impact on India-US Cooperation**
  - **Positive: India as manufacturing alternative** amid US-China tensions (IT, electronics, pharma), **Indo-Pacific partnerships** (QUAD, IMEC, IPEF) counter China and **Tech collaboration** via iCET, nuclear energy.
  - **Negative: Indian exports face Chinese competition**, U.S. tariffs ($45.7 billion deficit), **H1-B visa curbs** hit Indian tech workers (70% of visas), **'Buy American' limits** Indian exports, affects Make in India.

2.2.1 World Health Organization (WHO)

Why in the News?

United States announced its withdrawal from WHO, pausing transfer of any funds, support or resources to WHO.

US in WHO

- **Founding Member:** US was a **founding member of WHO** in 1948.
- **Earlier Withdrawal:** US earlier withdrew from WHO in 2020 citing following reasons: **Mishandling of the COVID-19 pandemic** and other global health crisis, **Failure to adopt urgently needed reforms**, and Its **inability to demonstrate independence**.
- **Funding from US:** For the two-year budget ending in 2025, the U.S. is **largest single contributor.**

About WHO

- **UN Agency:** United Nation's specialized health agency.
- **Genesis:** The **International Health Conference** held in New York in 1946 adopted the Constitution of WHO, which **entered into force in 1948.**
- **Key Functions: Coordinates the world's response to health emergencies**, promote well-being, prevent disease and expand access to health care.
- **Membership: 194** members grouped into **6 regions** (Africa, Americas, Eastern Mediterranean, Europe, South-East Asia, and Western Pacific).
  - All countries which are **Members of the UN** may become members. Other countries admitted through application **approved by** World Health Assembly.
- **Two main sources of funding:**
  - **Assessed contributions (AC): Member States pay** their AC.
  - **Voluntary Contributions (VC):** Largely from **Member States**.
- **Governance and Organizational Structure:**
  - **World Health Assembly (WHA):** held annually in Geneva, Switzerland.
  - **Executive Board:** headed by the Director-General and **WHO Secretariat**.

Significance of WHO

- **Regulating international health laws**.
- **Universal Health Coverage (UHC)**: e.g. **WHO's Global Drug Facility.**
- **Tackling Health Emergencies:** Declares a **Public Health Emergency of International Concern (PHEIC).**
- **Eliminating diseases:** Key role in **eradicating smallpox, achieving near eradication of polio etc.**

WHO's Global Initiatives

- **Emergency Response:** Uses standardized frameworks for rapid, complex emergency responses.
- **Health Action Plans:** Includes plans like Every Newborn, Indigenous Peoples, nutrition, cervical cancer, meningitis, TB, polio eradication (2017-2026).
- **Wellness Promotion:** Features MPower, LIVE LIFE for aging, suicide prevention (2021-2030).
- **Research and Innovation:** Focuses on genomic surveillance, mRNA vaccine tech, Global Centre for Traditional Medicine, Vaccine Safety Initiative.

Shortcomings of WHO

- **Poorly coordinated** responses to outbreaks.
- **Political Pressures:** especially from **China and USA.**
- **Complex Organizational Structure:** Multiple departments with overlapping tasks.
- **Absence of financial independence and effective legal powers**.

Strategic Objectives of WHO's 14th General Programme of Work

- **Conflict of Interest:** It is alleged that decisions influenced from pharmaceutical sector.

WHO Reforms

- **Transformation Agenda (2017):** It aims at **supporting health leadership.**
- **Three-Level Operating Model.**
- **Sustainable Financing:** WHO launched its **first investment round** in 2024.
- **WHO Results Framework:** Tracks **country-level progress** using **output scorecards**.
- **Supply Chain & Logistics and Partnerships** such as with Google and FIFA.
- **Incident Management System:** Enables **rapid deployment of medical teams, etc**.

2.2.2 Trade Weaponisation

Why in the News?

- India's External Affairs Minister raised concerns about increasing trade weaponization and associated job losses.

What is Trade Weaponization?

- **Definition:** The strategic use of trade policies and tools as a foreign policy instrument, aimed at influencing a partner's actions or policies by exploiting trade vulnerabilities.
- **Purpose:** Not just economic gain, but to induce changes in economic or diplomatic practices.
- **Example:** The 1973 oil embargo, where Arab states used oil supply disruptions to pressure the US and its allies over their support to Israel.

Key Tools for Trade Weaponization

- **Selective Import/Export Restrictions:** E.g., USA's **Countering America's Adversaries Through Sanctions Act (CAATSA)**
- **Exploitation of Economic Dependencies:** E.g., China **controls 60% of global production of 20 critical minerals and 85% of rare earth processing**
- **Non-Tariff Barriers:** E.g., The EU imposes strict agricultural product requirements
- **Currency Manipulation:** E.g., China has been accused of undervaluing its currency
- **Fulfilling National Agenda:** E.g., After **Liu Xiaobo's Nobel Peace Prize in 2010,** China reduced trade with Norway

Consequences of Trade Weaponization

- **Economic:** Disrupts supply chains, reduces trade, and increases inflation, etc.
- **Geopolitical:** Trade disputes escalate into broader tensions. **E.g., U.S.-Russia sanctions over Ukraine**
- **Multilateral Institutions:** Undermines cooperation and erodes trust. **E.g., WTO's dysfunctional Dispute Settlement System.**

Measures to Counter Trade Weaponization

- **Supply Chain Resilience:** Supply Chain Resilience Initiative (SCRI) (Australia, India, Japan), **Indo-Pacific Economic Framework for Prosperity** (IPEF), **Mineral Security Partnerships** (MSP) etc.
- **Countering Dominance:** E.g. **China Plus One** (business strategy that prevents investing in China only)
- **Strengthening Domestic Production:** Launched initiatives like **Make in India, Atmanirbhar Bharat,** and **PLI schemes**
- **Strengthening International Cooperation:** Strengthen WTO to enforce trade rules and resolve disputes.

Key Trade Weaponization measures used against India

- U.S. halted food aid **(PL 480) in the 1960s** when India refused to adopt policy changes.
- Western sanctions following **India's nuclear tests in 1974 and 1998** led to a reliance on thorium reserves.

2.3. MINILATERALISM AND MULTILATERALISM

Why in the News?

Recent adoption of **Cybercrime Treaty** by **UN General Assembly** is not only a breakthrough for a fractured cyber governance system but also a major victory for **multilateralism.**

UN Cybercrime treaty and resurgence of Multilateralism

- **Rise of nationalism, populism, economic inequalities, great power competition** is leading to the **fall of liberal world order** and **multilateralism.**
- The above factors have led to the **emergence of short-term strategic alliances** and **minilaterals**.
- The process of adoption of **UN Cybercrime Treaty** is therefore a **major triumph for multilateralism.**

About Multilateralism and Minilateralism

- **Multilateralism: Opposite** to bilateralism and unilateralism involving cooperation between 3 or more states adhering to a **common issue** based on **shared system of norms.**
  - **Emergence:** Most of the **multilateral institutions** emerged after the World War II.
- **Minilateralism:** It is an **informal, flexible,** and **voluntary** framework with varied situational interests and **coexisted** since **1945.** E.g., **GATT** originated as **minilateral negotiations.**

Factors Responsible for the shift towards Minilateralism

- **Rising multipolarity:** Emergence of **multiple centres of power**.
- **Strategic Alliance Vs Global Cooperation**. E.g., QUAD.
- **Easy Regulation and Decision Making**
- **Stagnation in reforms such as stalemate in WTO** Doha rounds, etc.
- **Perceived failure of Multilateralism:** To achieve global cooperation.

Comparison between Minilateralism and Multilateralism

	Minilateralism	Multilateralism
Participants	Fewer countries involved	Multiple countries involved
Formality	Voluntary commitments	Formal agreements
Target	Addresses specific threats	Tackles global issues
Examples	RCEP, QUAD	WTO, UN, IMF

Need for co-existence of Minilateralism and Mulitlateralism

- **Minilateralism as building blocks of Multilateralism** and **Streamlining Negotiations.**
- **Accelerate the pace in multilateral negotiations:** E.g., **Paris negotiations of 2015**.
- **Filling gaps** and **Dealing with Global Challenges with Rule-Based Framework:** Like climate change, terrorism, etc.

2.3.1. Role of Institutions in Climate Negotiations

Why in the News?

Recent **CoP29** of the **UNFCCC in Baku, Azerbaijan** witnessed a rift on the issue of climate finance between the developed and the developing countries questioning the efficacy of multilateral institution in provisioning of global common good.

Role of Institutions in advancing climate negotiations

- **Legitimacy and Credibility:** Through structured frameworks, membership inclusivity, etc.
- **Building Trust** and **Addressing Climate Corruption**.
- **Supporting implementation in Global South:** In implementing, sustaining, and enhancing climate change mitigation.
- **Flexibility to ensure compliance** and **Promoting Climate Justice** to the vulnerable and small island developing states.

Challenges in multilateral Climate Negotiations

- **Limitations of UNFCCC:** Under the Paris Agreement all countries have to voluntarily **mitigate, adapt and pay**.

- **Unresolved Issue of Climate Justice** and **Non-Recognition to the Problem of Climate Change**.
- **Rising Emissions:** Major agreements like Cancun and Paris, UNFCCC has little results.

Way forward on promoting effective institutional frameworks for Climate Negotiations

- **Role of Minilateralism:** involving smaller, interest-based coalitions.
- **Inclusive Multilateralism** and **Promoting Epistemic Institution**.
- **Promoting** Value-Based Cooperation **and Strengthening** Climate Finance Mechanisms.

2.4. TRIANGULAR PARTNERSHIP

Why in the News?

A recent report by the OECD and the Islamic Development Bank stresses **that triangular partnerships can effectively win influence in a divided and conflicted world.**

Key Actors of Triangular Cooperation

- **Beneficiary:** Developing country seeking help for a development issue.
- **Pivotal Partner:** Developing country with expertise, sharing knowledge/resources.
- **Facilitating Partner:** Developed country/agency funding and supporting collaboration.

Reasons for Resurgence of Triangular Partnerships

- **Failed Aid Models**: Traditional donor-recipient hierarchies lost credibility.
- **Rise of Emerging Donors**: India, China, Brazil's **mutual-benefit** approaches gained traction.
- **Countering China**: G7 engages India (shared democratic values) to balance China's BRI influence.
- **Geopolitical Instability**: New models needed amid conflicts/economic crises.

Challenges of Triangular Partnerships

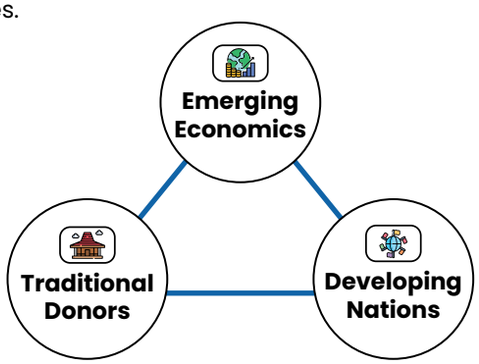
- **Power Imbalance**: Donor agendas may override recipient needs (e.g., focus on **investment-grade** over poorer nations).
- **Complex Standards**: African nations struggle with **EU sustainability norms**.
- **Implementation Hurdles**: Disputes over **procurement rules** (e.g., India's **75% local sourcing** clause in LoCs).
- **Limited Impact**: Project-based approach risks misalignment with long-term development goals.

Way Forward

- **Inclusivity**: Let recipients co-design projects.
- **Simpler Norms**: Adapt standards to local contexts.
- **Flexible Policies**: Balance donor mandates with local job creation.
- **Scale Up**: Align with **Paris Declaration**, integrate into national strategies.

Triangular Partnership/Cooperation

Definition
Collaboration between traditional donors (e.g., US, Japan), emerging economies (e.g., India), and developing nations to share expertise and resources.



Benefits

- Cost-effective solutions (68% projects under $1M budget)
- Strengthens South-South cooperation
- Supports SDGs

Global Trends & India's Role

2000-2022: 199 countries, 85 organizations engaged in 1,000+ projects (OECD)

India's Position: 8th globally
Example: India-Japan-Sri Lanka East Container Terminal (2019)

2.5. AUKUS

Why in the News?

AUKUS, a trilateral security and defense partnership between **Australia, the United Kingdom, and the United States**, has entered its fifth year.

About AUKUS

- **Genesis**: In **September 2021** between **Australia, the UK** and **US.**
- **Aim**: To boost **defense capabilities**, accelerate **technological integration** etc.
- **Composed of two pillars:**
  - **Pillar 1: To support Australia** in acquiring conventionally armed, **nuclear-powered submarines (SSNs).**
  - **Pillar 2:** Focuses on expediting **cooperation in intelligence sharing and critical technologies**, etc.

Significance of AUKUS

- **Strategic**: Strengthening of defense capabilities of Australia and **vision of free and open Indo-Pacific**.
- **Complements QUAD in Indo-Pacific.**
- **Strategic Competition with China** for technological dominance.
- **Alliance of Democracies strengthens its acceptance and legitimacy**.

Concerns related to AUKUS

- **Geopolitical:** concerns about **potential arms races.**
- **Weakening of QUAD's Strategic Role**.
- **Nuclear Proliferation risks**: AUKUS enables Australia to acquire nuclear-powered submarines.

2.6. INDIA'S NEIGHBOURHOOD FIRST POLICY

Why in the News?

India's Neighbourhood First policy has completed a decade.

About India's Neighbourhood First Policy (NFP)

- **Genesis: Launched in 2008**, intensified post-2014.
- **Objective**: Strengthen ties with immediate neighbors, **Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal, Pakistan, Sri Lanka**.
- **Guiding Principles**: **5S Framework** (Samman, Samvad, Shanti, Samriddhi, Sanskriti) with a **non-reciprocal, outcome-oriented approach**.

Key Aspects of NFP

- **Economic & Connectivity Boost:** E.g., **Bangladesh**: Mongla seaport access (2024) cuts costs for NE India.
- **High-Level Diplomatic Outreach:** E.g., **Nepal**: PM Modi's 2014 visit (first in 17 years).
- **Development Projects & Aid:** E.g., **Maldives**: Greater Malé Connectivity Project.
- **Energy Cooperation:** E.g., **Bangladesh-Nepal-India** tripartite power trade.
- **Countering China's Influence:** E.g., **Maldives**: Financial aid vs. China's debt-trap diplomacy.
- **Humanitarian Leadership:** E.g., **Vaccine Maitri** (Bhutan, Maldives first recipients).

Importance of India's Neighbourhood (South Asia)

- **Economic Integration:** South Asia's 5% intraregional trade offers India a leadership role.
- **Infrastructure:** South Asia helps India counter China economically and strategically.
- **Cultural Influence:** Shared history boosts people-to-people ties and soft power.
- **Security:** Stable South Asia ensures India's internal security.

Instability in India's neighbourhood

	Country	Concerns for India
	Afghanistan: Taliban takeover in 2021 led to collapse of democratic government.	⊛ Safety of its investments in Afghanistan ⊛ Security implications of a Taliban-ruled state
	Myanmar: Military coup in 2021 has destabilized democracy, sparking widespread protests and violence.	⊛ Increased insurgency and refugee flows.
	Sri Lanka: In 2022, Economic crisis triggered political instability and public unrest	⊛ **Potential refugee influx** ⊛ **Economic spillover effects** ⊛ **Strategic concerns** over Chinese influence.
	Maldives: Political turbulence since 2012. ⊛ In 2023, a new government, which campaigned on an anti-India platform was elected.	⊛ **Maintaining influence against Chinese inroads** ⊛ **Protecting Indian Ocean security** ⊛ **Balancing diplomatic ties**
	Nepal: Political instability persists due to frequent government changes.	⊛ Growing Chinese influence.
	Bangladesh: Political instability since 2024 to resignation of Bangladesh's Prime Minister.	⊛ **Illegal migration and forced displacement**: ⊛ Threat to key projects like **Akhaura-Agartala rail link**

Challenges

- **Political Instability**: E.g., Myanmar coup, Maldives' pro-China shift.
- **Perceived "Big Brother" Attitude**: E.g., 2015 Nepal blockade backlash.
- **Project Delays**: E.g., Malé bridge delays fueled anti-India sentiment.
- **Unresolved Disputes**: Teesta River (Bangladesh), Kalapani (Nepal).
- **China's BRI Expansion**: Hambantota Port (Sri Lanka), BRI inroads in Nepal, Bangladesh.

Way Forward

- **Diplomatic Sensitivity**: Align with neighbors' domestic politics (e.g., Maldives' shifting alliances).
- **Resolve Irritants**: Fast-track Teesta pact, Kalapani/Kachatheevu solutions.
- **Efficient Project Delivery**: Avoid delays to retain trust.
- **Strategic Balancing**: Counter China without forcing binary choices.
- **Support Democracy**: Stabilize engagement with Bangladesh, Myanmar, and Afghanistan.

2.7. INDUS WATER TREATY

Why in the News?

Recently, **the World Bank appointed Neutral Expert on Indus Water Treaty (IWT)** has backed India's position on its **competence to decide the outcome** of a dispute over two hydroelectric projects in India's Jammu and Kashmir.

More on the News

- In **2015,** Pakistan initiated a complaint, prompting the World Bank to pursue **dual dispute resolution**: **a Neutral Expert** (India's request) and the **Permanent Court of Arbitration** (Pakistan's request).
- **Disputed Hydroelectric Projects** include **330 MW Kishenganga Project**, inaugurated in 2018 and **850 MW Ratle Project,** on the Jhelum and Chenab rivers, respectively.

About IWT

- **Genesis**: **Signed in 1960** between India and Pakistan **mediated by the World Bank.**

AHMEDABAD | BENGALURU | BHOPAL | CHANDIGARH | DELHI | GUWAHATI | HYDERABAD | JAIPUR | JODHPUR | LUCKNOW | PRAYAGRAJ | PUNE | RANCHI

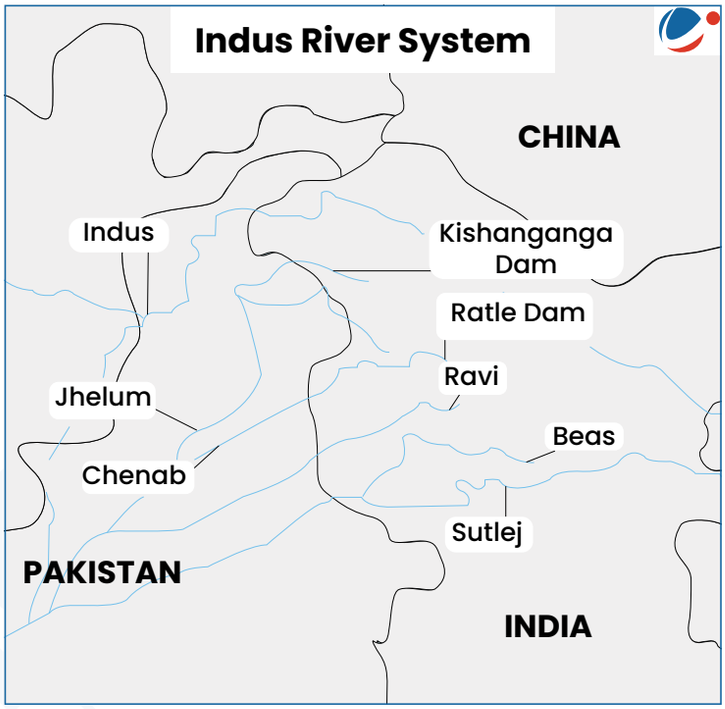
- **Water usage rights:**
  - **Eastern Rivers** (Ravi, Beas, and Sutlej) **for India's unrestricted use**.
  - **Western Rivers** (Indus, Jhelum, and Chenab) are **allocated to Pakistan**, with India allowed for specific non-consumptive uses like navigation, floating of timber or other property etc.
    - This gives **India roughly 30% and Pakistan 70%** of the water carried by the Indus River System.
- **Implementation:** Permanent Commissioners for Indus Waters.
- **Dispute Resolution Mechanism (Three Level Graded Mechanism):** Permanent Indus Commission (PIC), Neutral Expert and Court of Arbitration.

Challenges to IWT

- **Pakistan's** opposition to Indian projects.
- **Environmental Concerns**: Climate change induced alteration in the river flow.
- **India's Growing Needs**: With a burgeoning population and expanding agricultural sector.
- **Security and Political Pressure**: Strategic Use and Terrorism Concerns of India.

Way Forward

- **Integrated water management and climate adaptation**.
- **Modernization and renegotiations:** To take into account technological advances.
- **Transparency and data sharing:** Real-time **satellite-based monitoring**.



International Principles on Trans boundary Water Sharing

- **Helsinki Rules, 1966:** Regulates how **rivers and their connected groundwater**.
- **Helsinki Convention, 1992:** Provides a **legal framework** for preventing **water pollution**.
- **UN Convention on the Law of Non-Navigational Uses of International Watercourses, 1997**.

2.8. SHIFT IN INDIA–AFGHANISTAN RELATIONS TREATY

Why in the News?

Recently, **1st bilateral meeting between India's foreign secretary and Afghanistan's acting foreign minister** took place in Dubai.

More on the News

- The meet signifies **India's diplomatic shift and increased engagement** with the Taliban-led Afghan government.
- **It marks the highest-level engagement with the Taliban since their 2021 Kabul takeover post-US withdrawal.**
- **In November 2024, the first official meeting** between Indian diplomats and the Taliban's defence minister occurred in Kabul.

Why shift in India's diplomatic policy?

- **Deteriorating Afghan–Pakistan relations:** Pakistani airstrike on eastern Afghanistan.
- **To counter rising** Chinese influence and to prevent Afghan-soil based terrorism.
- **To strengthen** connectivity and access to Central Asia.
- **To restart** developmental projects and secure already done investments.
- **To strengthen** India's soft power and to ensure stability in the region.

India's contributions to Afghanistan

- The Salma Dam for agriculture, Zaranj-Delaram Highway for trade, transmission projects for electricity, Indian Embassy Complex.

Why the shift in diplomatic approach can be challenging?

- **Taliban's internal dynamics especially in its treatment towards women and girls.**
- **Terrorism and security concerns** and **Drug trafficking.**
- **Increasing presence of China.**

Way forward

- **Act West Policy:** India should **capitalize its traditional.**
- **Humanitarian assistance: to counter China.**
- **Resuming developmental projects:** Increasing investments through developmental projects.
- **Cultural engagements:** Develop people-to-people ties through **liberalizing the visa regime.**
- **Enhanced diplomatic engagements:** At various international and multi-lateral forums.

Evolution of India-Afghanistan Relations

1. Ancient Ties

India and Afghanistan shared deep historical and civilization connections.

2. Friendship Treaty

The signing of the 1950 treaty marked a close and friendly relationship.

3. POST-US Withdrawal

India's approach shifted after the Taliban's return, focusing on limited engagement.

2.9. INDIA-SRI LANKA RELATIONS

Why in the News?

Sri Lankan President visited Delhi on his first foreign trip after taking office.

Key Announcements

- **Economic Cooperation**: Discussions on the **Economic & Technological Cooperation Agreement (ETCA)** to expand the Free Trade Agreement (FTA)-2000.
  - MOU to amend the **Double Taxation Avoidance Agreement (DTA)** to align with global standards.
- **Infrastructure**: Explore collaboration on rehabilitating the **Kankesanthurai port** with Indian grant assistance.
- **Other**
  - Expedite implementation of **India-funded grant project of Sri Lanka Unique Digital Identity.**
  - Support the development of **Trincomalee as a regional energy and industrial hub.**

Significance of India-Sri Lanka Bilateral Relations

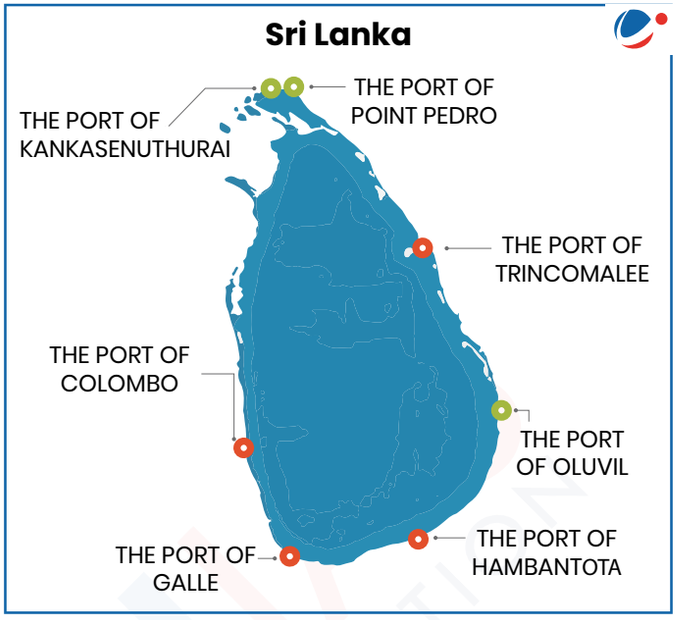
For Both Nations

- **Mutual Support at International Forums**
  - India's support for Sri Lanka's BRICS membership bid.
  - Sri Lanka's backing for India's non-permanent seat on the UN Security Council (2028-29).
- **Maritime Security:** Shared commitment to addressing traditional and non-traditional threats in the Indian Ocean Region.
- **Energy Cooperation:** Ongoing projects include inter-grid connectivity, a multi-product petroleum pipeline, the Sampur Power Project etc.
- **Regional & Multilateral Collaboration:** Active members of **Indian Ocean Rim Association (IORA) and BIMSTEC.**
- **Defence Collaboration:** E.g., **SLINEX** (Naval), **MITRA SHAKTI** (Army) and **MILAN**, India's multilateral naval exercise.

For Sri Lanka

- **Role of India in Debt Restructuring:**
  - **Financial Aid**: India provided nearly USD 4 billion in 2022-2023 to support Sri Lanka's economic crisis.
  - **IMF Bailout**: India was one of the first to offer financing assurances for IMF's $2.9 billion bailout package in 2023.
- **Economic Importance:** India is Sri Lanka's largest trade partner, top FDI contributor, and biggest source of tourists.

- **Other Key Areas of Support**
  - **Humanitarian Assistance**: India is Sri Lanka's first responder for disaster relief.
  - **Regional Security**: Supports the Colombo Security Conclave and Sri Lanka's regional security initiatives.
  - **Capacity Building**: Helped install the Maritime Rescue Coordination Centre (MRCC) under an Indian grant.
  - **Cultural Support**: Assisted in the restoration of Thiruketheeswaram Temple and exposition of the Kapilavastu Relics in 2012.



For India

- **Security of Indian Ocean**: Sri Lanka plays a pivotal role in safeguarding India's maritime security and stability.
- **Economic Interest:** Safeguarding Colombo Port, crucial for transshipment of Indian container traffic
- **Alignment with India's Policy**: Central place in India's **'Neighbourhood First' policy** and the **'Security and Growth for All in the Region' (S.A.G.A.R)** vision.
- **Indian Origin Tamils (IOTs)**: About **1.6 million IOTs** work mainly in Sri Lanka's plantations and Colombo's business sector.

Challenges in India-Sri Lanka Relations

- **Chinese Strategic Presence:** Growing Chinese influence through projects **like Hambantota Port**.
- **Fishermen Disputes:** Sri Lanka opposes Indian bottom trawlers and their incursions
  - Territorial dispute over this Kachchatheevu Island, ceded to Sri Lanka in 1974, remains a contentious issue, with Indian fishermen.
- **Delayed Implementation of the 13th Amendment:** Result of the **Indo-Lanka Accord (1987)** for resolving ethnic conflict via devolution of power.

Way Forward

- Bolster **'Neighbourhood First'** and **SAGAR policies** to counter Chinese influence in the Indian Ocean.
  - Implementing **India's Five "S" Diplomacy** in letter and spirit.
- **Fishing Dispute Resolution:**
  - **Shared Zones:** Limited fishing access near maritime boundaries for both nations.
  - **Regulations:** Restrict trawling frequency, hours, and ban bottom trawling.
  - **Kachchatheevu Lease:** Allow Indian fishermen access while Sri Lanka retains ownership.
- **Implementation** of the **13th Amendment**

2.10. INDIA-BHUTAN RELATIONS

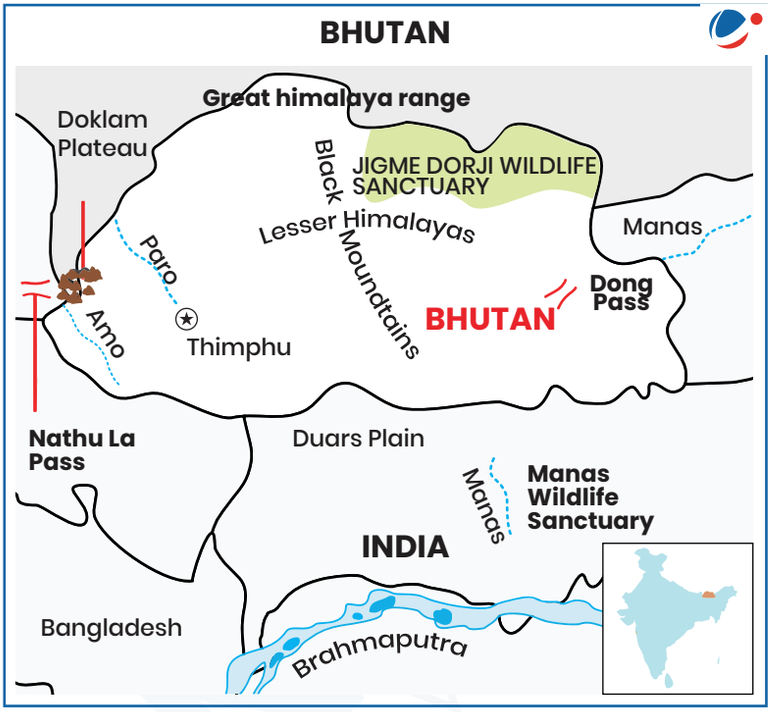
Why in the News?

The King and Queen of Bhutan were on an official visit to India.

Key Highlights of the Visit

- **Gelephu Mindfulness City Project:** India's Prime Minister reassured Bhutan's King of continued support for the **zero-carbon, 2500 km² co-operative city**.
- **Highlighted recent Milestones:**
  - **Inauguration of the first Integrated Check Post (ICP)** along the India-Bhutan border in Assam.
  - **Punatshangchhu-II hydroelectric project** is nearing completion.

Significance of India-Bhutan Bilateral Relations



For Both Countries

- **Robust Political Relationship:** Founded on the **Treaty of Friendship**.
- **Hydropower Cooperation: E.g., Basochhu** and **Nikachhu hydropower plants** now trade in Indian power markets.
- **Buddhist Connect:** Promotion of Buddhist pilgrimage and cultural exchanges.
- **Transboundary Wildlife Conservation:** E.g., **Transboundary Manas Conservation Area (TraMCA)** to protect wildlife in **Manas National Park** (India) and **Royal Manas National Park** (Bhutan).

For Bhutan

- **Free Trade Agreement:** The **1972 India-Bhutan Trade Agreement**, revised in 2016.
- **Development Assistance:** India supports **Bhutan's 13th Five-Year Plan (2024-29)** and its **Economic Stimulus Programme.**
- **Security Support: During Doklam Standoff (2017),** India invoked the **Treaty of Perpetual Friendship** to protect Bhutanese territory from Chinese aggression.
- **Infrastructure Development:** India's Border Roads Organisation (BRO) built most of **Bhutan's roads under Project 'DANTAK'.**
- **Other Support:** 50% of Bhutan's foreign direct investment comes from India.

For India

- **Trade:** Largest trade partner, with a favorable trade balance.
- **Strategic Location:** Acts as a buffer between China and India, especially in the Chumbi Valley.

Cooperation in New and Emerging Areas

- **Space Cooperation:** India-Bhutan SAT launched in 2022.
- **Fin-Tech Collaboration:** RuPay Card for cross-border payments (2019-2020) and Introduction Bhim app in Bhutan
- **e-Learning & Digital Connectivity:** Integration of Bhutan's Druk Research Network with India's National Knowledge Network for enhanced educational connectivity.

Growing Concerns in India-Bhutan Relations

- **Increasing Proximity with China:** China influences Bhutan's economy, accounting for 25% of its trade.
- **Chinese Territorial Assertiveness:**
  - China views Bhutan as part of its **"five-finger policy"** targeting sensitive Indian regions (views **Tibet as the palm** and **Ladakh, Nepal, Sikkim, Bhutan, and Arunachal Pradesh** as the fingers).
  - **Bhutan-China border dispute:** Bhutan and China signed a roadmap in 2021 for dispute resolution.
  - India fears China may gain control over the **Doklam plateau**, affecting India's strategic **Siliguri Corridor.**
- **Other Challenges:**
  - **Militant Groups:** North-East Indian militants (such as **United Liberation Front of Assam (ULFA) & National Democratic Front of Bodos (NDFB)**) use Bhutan as a hideout.
  - **Stalled Projects:** Bhutan halted the **BBIN Motor Vehicle Agreement** (Bangladesh, Bhutan, India, Nepal) due to environmental concerns.

Conclusion

Strengthening economic ties, security commitments, and fostering educational and cultural collaborations will ensure mutual growth and stability.

2.11. INDIA - U.S.A RELATIONS

Why in the News?

The Indian Prime Minister paid an Official Working Visit to the USA.

Key Outcome of the Visit

Area/Sphere	Development
Defense & Security	➤ **Proposed Ten-year Framework for the U.S.-India Major Defense Partnership:** Signing to boost defense ties. ➤ **Autonomous Systems Industry Alliance (ASIA):** Scaling industry partnerships in Indo-Pacific. ➤ **Other:** Co-producing Javelin Missiles and Stryker Vehicles in India.
Technology and Innovation	➤ **U.S.-India TRUST Initiative:** Drives collaboration in critical tech like defense. ➤ **INDUS Innovation:** Enhances industry-academia ties in space, energy, etc. ➤ **Strategic Mineral Recovery Initiative**.
Others	➤ **U.S.-India COMPACT for the 21st Century:** to build trust and mutual benefits. ➤ **Mission 500:** Aims to double bilateral trade to $500 billion by 2030.

Significance of a Robust India-US Relationship

- **Advancing Economic Opportunities:** USA as India's top export destination; India joined three IPEF pillars.
- **Strengthening Global Strategic Influence:** Quad partnership counters China's influence in the Indo-Pacific.
- **Defense Modernization:** Foundational agreements (GSOMIA, LEMOA, COMCASA, BECA); US recognizes India as Major Defense Partner with STA-1 status.
- **Emerging Technologies:** Launched iCET (2023).
- **Space Outreach:** NISAR mission; India joined Artemis Accords for space governance.
- **Energy Security:** US-designed nuclear reactors in India; US as a major LNG supplier.
- **Countering Terrorism:** US approved extradition of 26/11 accused Tahawwur Rana to India.
- **Multilateral Support:** US back India's UNSC permanent seat, NSG, and IEA membership.
- **Climate & Renewable Energy:** US joined International Solar Alliance, launched RETAP.

Issues Straining India-US Partnership

- **Trade & Economic Challenges:** India on US 2024 Special 301 Priority Watch List for IPR.
- **Geopolitical Divergences:** e.g., avoiding militarizing Quad, stance on Russia-Ukraine war.
- **Visa & Immigration:** Tightened H-1B visa rules, deportation of illegal Indian immigrants.
- **Human & Religious Rights:** USCIRF concerns over CAA seen as interference in India's affairs.
- **Sanctions:** US concerns over India's S-400 purchase from Russia under CAATSA.

Ways to Strengthen India-US Partnership

- **Bilateral Trade Agreement (BTA):** Enhance market access, reduce tariffs, resolve IPR issues.
- **Defence Framework:** Finalize 2025-2035 defense framework.

- **H-1B Visa Easing:** Streamline visa processes for Indian professionals.
- **CAATSA Waiver:** Leverage Indian-American influence for long-term exemptions.
- **Human & Religious Rights:** US to avoid interference in India's internal matters.
- **Emerging Tech & AI:** Deepen cooperation, e.g., U.S.-India Roadmap under TRUST Initiative.

2.11.1. India-U.S. Civil Nuclear Agreement

Why in the News?

The budget's focus on developing **100 GW of nuclear energy by 2047,** alongside amendments to **the Atomic Energy Act** and **Civil Liability for Nuclear Damage Act,** can revitalize the dormant India-U.S. Civil Nuclear Agreement.

More on the News

- **U.S. removes 3 Indian nuclear entities** (BARC, IGCAR, IRE) from its Entity List, easing trade restrictions.
- **Significance:** Facilitates implementation of the U.S.-India 123 Agreement for nuclear cooperation.

About India-U.S. Civil Nuclear Agreement or 123 Agreement

- **Background:** 1978 U.S. sanctions post-Pokhran-I; 2005 cooperation pact; 2008 final deal under U.S. Atomic Energy Act.
- **Key Provisions:**
  - **IAEA Safeguards:** Civilian reactors under permanent monitoring.
  - **NSG Waiver:** Allowed nuclear trade despite India's non-NPT status.

Significance of India-U.S. Civil Nuclear Agreement

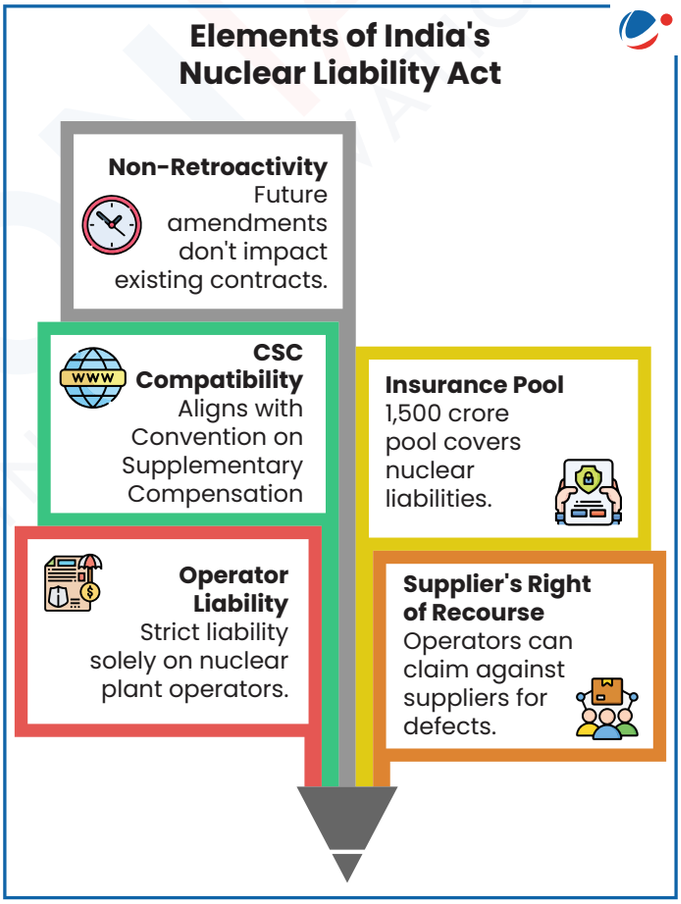
- **Ended India's isolation,** legitimized nuclear status, and boosted energy security (reactor efficiency rose to 80%).
- **Strategic impact:** Foundation for deeper U.S.-India ties and entry into export control regimes (MTCR, Wassenaar, Australia Group).

Challenges

- **Civil Liability Law (CLND 2010):** Supplier liability clauses deterred private investments.
- **Commercial hurdles:** Westinghouse bankruptcy stalled reactor projects; high costs shifted focus to renewables.

Way forward to operationalize India-U.S. Civil Nuclear Agreement

- **Amend India's Civil Liability for Nuclear Damage (CLND) Act.**
- **Establish an Intergovernmental Understanding on Liability.**
- **Expedite the Implementation of the Insurance Pool.**



2.12. INDIA-EUROPEAN UNION (EU) RELATIONS

Why in the News?

Recently, in a **High- Level Meeting** was held between the EU Trade Commissioner, the Indian Commerce and Industry Minister.

More on the news

- During the meeting a **roadmap** based on **six broad principles for building a mutually beneficial partnership** between **India and the European Union (EU)** was outlined.

- **6-Point Roadmap for India-EU Cooperation**
  - **Common Values:** Cooperates on democracy, rule of law for market integration.
  - **Quality Production:** Harmonizes standards (Zero Defect Zero Effect Principle).
- **Sustainable Development: Promotes fair, differentiated sustainability (CBDR).**
- **Trade Agenda:** Builds a fair, equitable trade framework addressing tariffs.
- **Technology and Supply Chain Resilience**.
- **People Ties:** Strengthens connections through skilled youth collaboration.

Significance of India-EU Relations

- **Mutual**
  - **Historical Relations:** India was **amongst the first** countries to establish diplomatic relations with the European Economic Community in **1962**.
    - During the **5th India-EU Summit held (2004)** in Hague, upgraded to a **Strategic Partnership**.
  - **Trade Partnership**:
    - **EU:** India's largest trading partner
    - **India:** EU's 9th-largest trading partner with India maintaining trade surplus (2023)
  - **Strategic Alignment:** Common interests in security, renewable energy etc. Examples-
    - **India-EU Bilateral Dialogues** exist on Counterterrorism, Cyber Security etc.
    - **India-EU Clean Energy and Climate Partnership** launched in 2016.
  - **Connectivity: Connectivity Partnership (2021)** enhancing **digital, energy, transport etc.**
- **For India**
  - **Investment**: Foreign Direct Investment valued at **USD 107.27 Bn**. (Apr 2000-December 2023).
  - **Export promotion**: Particularly in **IT, pharmaceuticals, textiles, and agriculture**.
  - **Security & Defence**: E.g. manufacturing of **Airbus C-295 aircrafts** in India.
  - **Technology & Innovation**: **E.g. India-EU Trade and Technology Council (2022)** is a strategic coordination mechanism.
- **For the European Union (EU)**
  - **Access to market**: India can be the EU's **valuable trade partner**.
  - **Cultural & Educational Ties** and **Geopolitical cooperation**: The EU can leverage **India's centrality in the Indo-Pacific** and **growth potential**.
  - **Security and Stability**: India can provide security and stability in the **Indian Ocean**.

Challenges

- **Lack of Trade diversification**: Due to non-tariff barriers like **technical barriers to trade**.
- **EU's import dependence on China**.
- **Delayed FTA negotiations**: Due to **Divergent perspectives**: Like **digital regulation** etc.
- **Carbon border adjustment mechanism (CBAM)**.
- **Lack of consensus**: on some aspects of **labour laws, human rights, etc.**

Way Forward

- **Fastrack FTA** and **Trade Reforms**: Predictable tariffs and harmonised rules, etc.
- **Green cooperation** and **Labour policy** etc.

2.13. INDIA-FRANCE RELATIONSHIP

Why in the News?

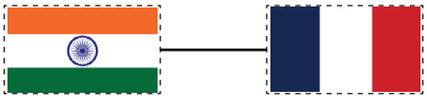
India and France co-chaired **Artificial Intelligence (AI) Action Summit** held in France.

More on the news

- **Event:** AI Action Summit, Paris (France + UNESCO)
- **Goal:** AI benefits for society, economy, environment
- **Next Host:** India (endorsed by France).

Importance of France For India

First Strategic Partnership (Est. 1998)



Strategic Alignment

- Both nations value **independence** in global politics. India followed **non-alignment** after WWII France left
- **NATO's military command** in 1966. Both opposed a **US-dominated world** after the **Cold**
- **War.**

Support for India's Interests

- France engaged with India after its **1998 nuclear tests** while others imposed sanctions.
- First **P-5 nation** to support India's bid for a permanent **UN Security Council** seat.
- France holds unique influence as member of **G7, UN Security Council, NATO, and EU.**

Indo-Pacific Partnership

- France has **territories** in the Indian Ocean region.
- Both nations want a **stable, rule-based** Indo-Pacific.
- **55% of India's trade** passes through South China Sea and **Malacca Strait.**

Key Defence Partner

- France is a **major defence supplier** to india.
- India now **exports defence equipment** to France.
- Joint projects include **Scorpene submarines Rafale aircraft**, and fighter jet engines.
- **28% of French arms exports** went to India (2020-2024).

Key Dimensions of India-France Partnership

Cooperation Area	Description
Economic	The total trade for **FY 2022-23** breached the **USD 13 billion**.
Defence	**Important exercises:** SHAKTI (Army Exercise), Exercise GARUDA (Bilateral Air Exercise), etc. **FRIND-X (France-India Defence Startup Excellence)** launched. **Horizon 2047:** roadmap **was launched on the** 25th Anniversary of the India-France Strategic Partnership to set the course for the bilateral relationship up to 2047.
Science	**India-France Roadmap on AI.** Creation of the **Indo-French Life Sciences Sister Innovation Hub.** **Unified Payment Interface (UPI)** in France and Europe.
Space	France is a key supplier of **components and equipment** for India's space program. Ongoing projects include **joint satellite TRISHNA, maritime domain awareness, etc.**
Civil Nuclear	India and France signed a **civil nuclear agreement in 2008**. India is also a member of the **International Thermonuclear Experimental Reactor (ITER)**. Both nations are now working on a **partnership for Small Modular Reactors (SMR).**
Other Areas	**Climate Change:** Both nations actively drive the implementation of the **2015 Paris Climate Agreement and in 2018** Co-launched the **International Solar Alliance**. **Trilateral Cooperation:** The **India-France-Austral:** Promotes a **free, open, and rules-based Indo-Pacific**.

Key Challenges in India-France relations

- **Roadblocks in Nuclear Energy Cooperation:** High costs, delays, and concerns over India's Civil Liability for Nuclear Damage Act (2010).
- **Divergent Geopolitical Stances:** France supports Ukraine; India remains neutral.
- **Intellectual Property Rights (IPRs) Concerns:** Weak enforcement in pharma, fashion, and tech discourages French investment.

- **Trade Barriers and Protectionist Policies:** French resistance to Indian agri-exports.
- **Stalled India-EU Free Trade Agreement (FTA):** Unresolved BTIA since 2007.
- **Limited Private Sector and P2P Engagement:** Dominantly G2G-driven.

2.14. INDIA-INDONESIA RELATIONS

Why in the News?

In the context of the **75th Anniversary of India-Indonesia Diplomatic Relations**, the **Indonesian President visited India**.

Key Developments during the visit

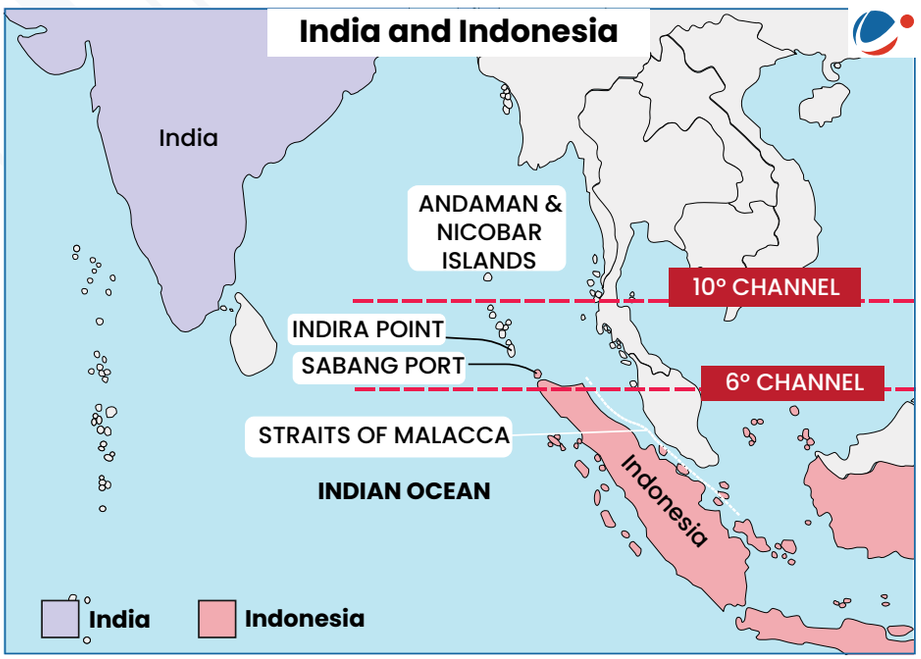
- The two countries signed **MoUs on Health Cooperation, Traditional Medicine etc.**
- He was also the **chief guest at India's 76th Republic Day celebrations**.

History of India-Indonesia Relations

- **Historical Ties:** Ancient cultural and commercial ties, with Ramayana and Mahabharata.
- **1950:** H.E. Sukarno, Indonesia's first President, was Chief Guest at India's first Republic Day.
- **Non-Alignment Movement (NAM):** India and Indonesia were key founders of NAM.
- **Strategic Partnership:** Established in 2005, upgraded to a New Comprehensive Strategic Partnership in 2018.

Significance of India-Indonesia Relations

- **Mutual Benefits**
  - **Economic engagement: India–Indonesia Economic and Financial Dialogue (EFD Dialogue)** (2023 and **Maritime Security E.g.** Safety of Navigation in the Straits of Malacca and Singapore (SOMS).
  - **Defence and Security:** Bilateral exercises **Garuda Shakti** (Army) and **Samudra Shakti** (Navy), and participation in other multilateral exercises- **Milan, Komodo, Tarang Shakti and Super Garuda Shield**.
    - **Developing defence indigenization and modernization capacities** by transfer of **Brahmos missiles**.
  - **Multilateral reforms**: including **UN** and the **G20.**
  - **Regional partners:** Indonesia recently became a full member of the BRICS.
  - **Infrastructure & Connectivity:** E.g. India's Development Partnership with the **Indonesia-Malaysia-Thailand Growth Triangle (IMT-GT) and Cultural and Heritage Cooperation: E.g.** Cultural Exchange Programme (2025-2028).
  - **Other areas of common interests:** Condemning all forms of terrorism, cybersecurity etc.
- **For India**
  - **Trade: Indonesia** is the **second largest trading partner** in the **ASEAN** (after Singapore).
  - **Geostrategic significance:** India, in line of its **Security and Growth for All in the Region (SAGAR) initiative and Sabang port** development.
  - **Internationalization of rupee**: MoU on Local Currency Settlement Systems (LCSS).
  - **Health and Pharmaceuticals:** Sharing best practices.
- **For Indonesia**
  - **Market Access:** India is **2nd largest buyer of coal and crude palm oil** from Indonesia.
  - **Investment** in Indonesia in infrastructure, power, textiles, steel, automotive, etc.
  - **Climate Change and Disaster Resilience: Humanitarian Assistance and Disaster Relief (HADR)** Indonesia joined the India-led **Coalition for Disaster Resilient Infrastructure (CDRI).**



- **Food Security**, **Space Cooperation** and **Education and Skill Development.**

Challenges

- **Unrealized Trade Potential**: High tariff, non-tariff barriers along with low FTA utilisation.
- **China's influence:** Investments from China under the Belt and Road Initiative (BRI).
- **Slow Progress of** strategic projects such as purchase of Brahmos missiles, development of Sabang Port etc.
- **Lack of connectivity**: Limited direct air connectivity, visa issues etc.

Way Forward

- **Identifying areas of collaboration**: Creating an "ASEAN Plus" policy.
- **Trade Reforms** and **Capitalizing on Regional cooperation**.
- **Cooperation in the Global South.**
- **Developing Minilaterals** like India-Indonesia-Australia cooperation.
- **People-to-people Ties**: Promoting cultural exchanges, opportunities for education, etc.

2.15. INDIA-KUWAIT RELATIONS

Why in the News?

India's Prime Minister visited Kuwait, marking the first visit by an Indian PM in 43 years.

Key Outcomes

- **Award Conferment:** Indian PM received Kuwait's highest honor, **'The Order of Mubarak Al Kabeer.'**
- **Strategic Partnership:** India-Kuwait relations elevated to a strategic partnership.
- **India- Gulf Cooperation Council (GCC) Cooperation:** Kuwait, as GCC President, pledged stronger ties with India.
- **Other**:
  - Kuwait joined **International Solar Alliance (ISA)**
  - **Defence Pact signed to promote** cooperation in defense training, personnel exchanges, joint exercises etc
  - Renewed **Cultural Exchange Program (2025–2029)** for arts, literature, etc.

India-Kuwait Relations: An Overview

- **Diplomatic Ties**: India was among the first to establish relations with Kuwait in 1961.
- **Indian Community**: **1 million Indians** live in Kuwait, the largest expatriate group.
- **Energy Trade**: Kuwait is India's **6th largest crude oil** and **4th largest gas supplier**.
- **Historical Relations**: India was a top trading partner; **Indian Rupee** was the legal tender until 1961.
- **1990 Kuwait Airlift**: India airlifted **1,70,000 Indians** after Iraq's invasion, setting a Guinness World Record.

Convergence in India-Kuwait Relations

- **Strategic Location & Connectivity**: E.g., Securing busy sea lanes (e.g., Red Sea) and enhancing India's connectivity through projects like the **India-Middle East-Europe Economic Corridor (IMEEC)**.
- **Energy Security**: Kuwait's oil reserves meet **3.5% of India's energy needs**.
- **Petrochemical Collaboration**: Potential in Kuwait's oil and India's growing petrochemical sector
- **Investment Opportunities**: **Kuwait Investment Authority (KIA)** views India as a prime investment destination.
- **Geopolitical Alignment**: Growing political ties reflect India's broader Gulf strategy, positioning it as a **Net Security Provider**.

Divergences in India-Kuwait Relations

- **Expatriate Welfare & Labor Issues**: Indian faces labor rights violations and mistreatment, highlighted by the **2024 Mangaf fire** that killed 40 Indians.
- **Limited Economic Diversification**: While energy trade dominates, economic engagement in other sectors remains limited.
  - India also has a **trade deficit with Kuwait**.
- **Geopolitical Differences**: Kuwait's diplomatic stance during regional crises (e.g., Gulf War, Yemen, and Syria) sometimes diverges from India's **non-interventionist policy**.

AHMEDABAD | BENGALURU | BHOPAL | CHANDIGARH | DELHI | GUWAHATI | HYDERABAD | JAIPUR | JODHPUR | LUCKNOW | PRAYAGRAJ | PUNE | RANCHI

India and Gulf Cooperation Council (GCC)

- **Established**: 1981
- **Members**: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE

India-GCC Relations

- **Economic & Trade:** Amajor trading bloc for India, accounting for ~14% of India's total foreign trade in 2023-24.
- **Trade Balance:** GCC has a trade surplus with India due to large oil and gas imports.
- **Investment:** India received ~US$25 billion FDI from GCC countries (2000-2024).
- **Energy Security:** GCC provides 50% of India's crude oil and 70% of its natural gas, with Qatar being a top LNG supplier.
- **Indian Diaspora:** GCC hosts **8 million Indian expatriates**, the **largest diaspora in the region,** and is the **second-largest source of remittances** to India after the US.

Challenges in India-GCC Relations

- **Geopolitical Rivalries:** Saudi-Iran rivalry complicates India's relations with both countries.
- **Labor Migration Issues:** Concerns over the Kafala system, exploitation, and human rights violations against migrant workers.
- **Slow Free Trade Agreement (FTA) Progress**
- **Discriminatory Crude Pricing:** The "Asian Premium" results in higher oil prices for India and other Asian nations.

2.16. NEWS IN SHORTS

2.15.1 World's Largest Hydropower Dam on Brahmaputra

China has approved the construction of the world's largest dam and world's biggest infra project in **Medog region of Tibet.**

- The dam is **over three times the capacity of the Three Gorges Dam** (currently the world's largest, in central China).

Project Overview

- **Location:** Lower reaches of the Yarlung Zangbo River (Tibetan name for Brahmaputra.

Concerns Associated with the Dam Construction

- **Engineering Challenges:** frequently experiences earthquakes.
- **Environmental Impact** and **Geopolitical Risks:** India and Bangladesh fear China's ability to control water flow.
- China and India have established **Expert Level Mechanism (ELM)** in 2006 to address trans-border river issues.

2.15.2 60 Years of India-Singapore Bilateral Relations

The Presidents of India & Singapore jointly unveiled a **logo to mark the 60th anniversary** of diplomatic relations between the two nations.

India-Singapore Relations

- **Diplomatic Relations:** Establish **diplomatic relations in 1965.**
  - Comprehensive Economic Cooperation Agreement was signed in 2005. **Comprehensive Strategic Partnership** in 2024.
- **Trade:** Singapore is **India's 6th largest trade partner** (2023-24).
- **Defence Cooperation:** Exercise **Agni Warrior** (Army) & **SIMBEX** (Navy).
- **Indian Diaspora: 9% of Singapore's population.**

Significance of Singapore for India

- **Countering China:** Changi Naval Base access counters China's influence.
- **Geographical Location and Foreign Direct Investment:** $11.77 billion FDI in FY 2023-24

2.15.3 Birthright Citizenship In US

The United States President Signed an Executive Order to End Birthright Citizenship

About Birthright Citizenship in the US

- **Definition**: Birthright citizenship is a provision under the **14th Amendment (1868) of the US constitution** that grants automatic citizenship to anyone born on US soil.
- **Historical Context**: Upheld by the US Supreme Court in **United States v. Wong Kim Ark (1898),** even for children of non-citizen parents.

Implications for India with End of U.S. Birthright Citizenship

- **H-1B Visa Holders** will no longer qualify for automatic citizenship.
- **Temporary Visa Holders** will face difficulties securing citizenship for their US-born children.
- **Impact on Immigration** and **Curb "birth tourism"**: A practice of women travelling to the US specifically to give birth.

2.15.4 BRICS

Nigeria has been admitted as **"partner country"** of **BRICS** grouping.

- It is the **9th BRICS partner country**, joining **Belarus, Bolivia, Cuba, Kazakhstan, Malaysia, Thailand, Uganda,** and **Uzbekistan**.

About BRICS

- **Total members: 10. Brazil, Russia, India and China** in **2009**, with **South Africa** added in **2010. Other Full Members:** Egypt, Ethiopia, Iran, UAE, Indonesia.
- **India** hosted **4th (2012), 8th (2016)** and **13th (2021) BRICS Summit.**

2.15.5. BIMSTEC

Ministry of Youth Affairs and Sports has hosted the **first-ever Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Youth Summit** in **Gandhinagar**, Gujarat.

About BIMSTEC (Secretariat: Dhaka, Bangladesh)

- **Genesis:** Established in 1997 with the signing of **Bangkok Declaration.**
- **Members**: Bangladesh, **India**, Sri Lanka, Thailand, Myanmar, Nepal, Bhutan.
- **7 focus area**: Trade; Environment and Climate Change; Security; Agriculture and Food Security; People-to-People Contact; Science, Technology, and Innovation; Connectivity.'

2.15.6. UK Joins CPTPP

UK becomes the **first European country** to join the **Indo-Pacific trade bloc Comprehensive and Progressive Agreement for Trans-Pacific Partnership** (**CPTPP**).

Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

- **Genesis**: Initially signed by 11 countries in March 2018 in Santiago, Chile, after the US withdrew from the original Trans-Pacific Partnership (TPP) in 2017.
- **Membership**: 12 member nations — UK, Australia, Canada, Japan, New Zealand, Brunei, Chile, Malaysia, Mexico, Peru, Singapore, and Vietnam.
- **Significance**: Bloc accounts for around **15% of global GDP** and **a market access of over 500 million people.**

Significance of such Multilateral Groupings for India

- **Economic Opportunities**: Joining trade blocs like CPTPP and **RCEP** (Regional Comprehensive Economic Partnership) can open new markets and support the "China plus one" strategy.
- **Export Boost**: Reduced tariffs and access to large Asia-Pacific markets can enhance exports, especially for MSMEs, which contribute 40% to India's exports.

2.15.7 Indian Chemical Council Wins OPCW-The Hague Award

The 2024 OPCW The Hague award conferred upon Indian Chemical Council (ICC)

- Conferred by the **Organisation for the Prohibition of Chemical Weapons (OPCW)** for ICC's contributions to chemical safety and compliance with the Chemical Weapons Convention (CWC).
  - For the First time the award recognizes a chemical industry body.
- **Hague Award** was established in 2014 to honor OPCW's efforts towards the CWC's goals.

Indian Chemical Council (ICC), 1938

- **Representation**: Apex body for all sectors of India's chemical industry, including organic/inorganic chemicals, etc.
- **Industry Share**: Represents over 80% of India's $220 billion chemical sector.
- **HQ**: Mumbai

Chemical Weapons Convention (CWC)

- **Genesis**: Came into force in 1997.
- **Aim**: To eliminate chemical weapons by prohibiting their development, production, acquisition, transfer, or use.

- **Members**: 193 States Parties (India is an original signatory)
- **Implementing Body**: OPCW
  - In India, the **National Authority for Chemical Weapons Convention (NACWC)** oversees CWC implementation, established under the **Chemical Weapons Convention Act, 2000.**

2.15.8 International Organization of Aids to Marine Navigation (IALA)

India is elected to the **Vice Presidency** of IALA in Singapore, strengthening its commitment to maritime safety, navigation, and international cooperation.

About IALA (Hq: Saint-Germain-en-Laye, France)

- **Establishment: 1957** as a Non-Governmental Organization (NGO).
- **Transition to IGO**: In 2024, from a NGO to an **Intergovernmental Organization (IGO).**
- **Aim: Aids to Navigation globally.**
- **Member Categories: National Member, Associate Member** and **Industrial Member.**

2.15.9 United Nations Disengagement Observer Force (UNDOF)

Recently, **UN Secretary General paid tribute to Brigadier Amitabh Jha**, who was **serving with United Nations Disengagement Observer Force (UNDOF) at Golan Heights**.

- **India is third largest military contributor** to UNDOF.

About UNDOF

- **Genesis**: Established by UNSC Resolution 350 (1974), after the 1974 Disengagement of Forces Agreement between Israel and Syria.
- **Mandate**: Maintain ceasefire and supervise the demilitarized buffer zone and area of limitation where Israeli and Syrian troops are restricted.
- **HQ**: Camp Faouar, Syrian side of the Golan Heights.

2.15.10 "Crossroads of Peace" Initiative

Armenia briefed India and Iran on its regional connectivity proposal (**Crossroads of Peace**) during a trilateral consultation.

About Crossroads of Peace Initiative

- **Objective**: Connecting **Armenia with its neighboring countries—Turkey, Azerbaijan, Iran, and Georgia**—by developing infrastructure like roads, railways, pipelines, cables, and electricity lines.
- **Significance**: Seeks to link the **Caspian Sea to the Mediterranean Sea** and the **Persian Gulf to the Black Sea**.

2.15.11. Kerch Strait

Recent Event: Russian tanker split during a storm, spilling oil in the Kerch Strait.

- A strait is a **narrow waterway between two pieces of land** that connects two large bodies of water.

About Kerch Strait

- **Location**: Eastern Crimean Peninsula, linking Black Sea and Sea of Azov.
- **Significance**: Key route for Russian grain and oil exports.

2.15.12 Pangsau Pass

The **Pangsau Pass International Festival, a three-day event** celebrating border trade and cultural exchange, concluded recently in Arunachal Pradesh.

About Pangsau Pass

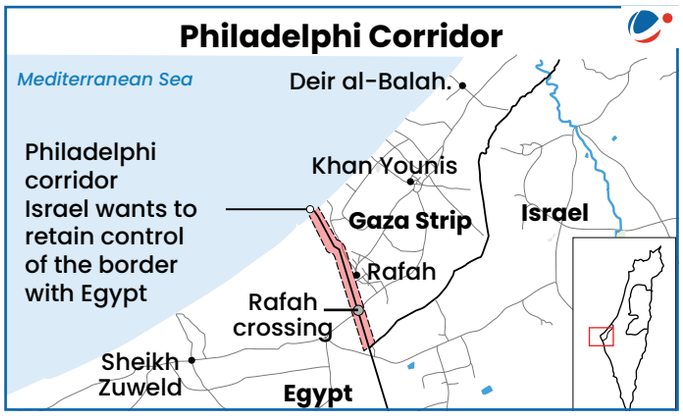
- **Location:** Situated at 3,727 feet (1,136 m) on the **Patkai Hills along the India-Myanmar border.**
- **Origin of Name:** Named after the nearest Burmese village, Pangsau.
- **Historical Significance:** Believed to be the route of the 13th-century Ahom invasion of Assam by the Shan tribe.
- **Connectivity:** The historic **Stilwell Road (Ledo Road) passes through Nampong** and the Pangsau Pass into Myanmar.

2.15.13 Philadelphi Corridor

Recent **ceasefire terms between Israel and Hamas** also stipulate Israel's withdrawal from the Philadelphi Corridor.

About Philadelphi Corridor

- Corridor was **originally established under the 1979 Israel-Egypt Peace Treaty**.
- It is a **narrow strip of land along the Gaza-Egypt border**, ~14 km long and 100 meters wide.
- It serves as a **critical border** area between the **southern Gaza Strip and Egypt's Sinai Peninsula.**
- It runs from the **Mediterranean to Kerem Shalom** crossing with Israel.



2.15.14 Gulf of Mexico

Recently, there has been a proposal to change name of **Gulf of Mexico** to "Gulf of America".

About Gulf of Mexico

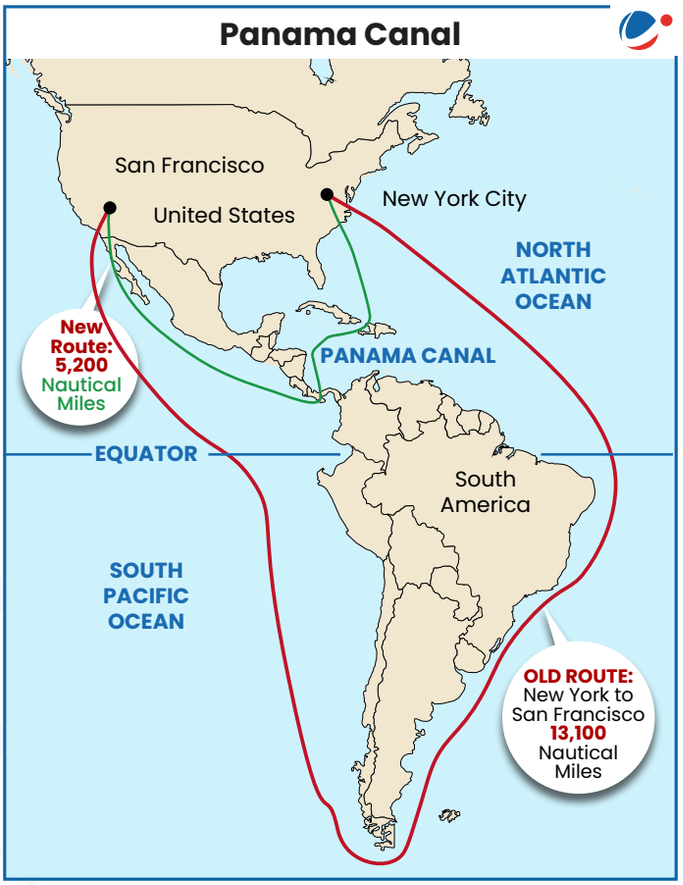
- **Boundaries:** United States (North), Mexico (West and South), Cuba (South-east).
- It connects to the **Atlantic Ocean** through the **Straits of Florida** and to the **Caribbean Sea via the Yucatán Channel.**
- **Control and Ownership:** Shared by **U.S., Mexico, and Cuba**

2.15.15 Panama Canal

U.S. President-elect Donald Trump threatened to reimpose U.S. control over the Panama Canal.

About Panama Canal

- It is an **82-km (51-mile) artificial waterway** that **connects Pacific** & **Atlantic Oceans** through Panama.
- The canal transports ships through **Gatun Lake.**
- **Significance:** It **shortens the journey of ships between east and west coasts of U.S.** by 8,000 miles (around 22 days).



2.17. TEST YOUR LEARNING

Prelims Questions

1. Which of the following is/are direct outcomes of geo-economic fragmentation as highlighted in India's Economic Survey 2024-25?

1. Reduced global capital flows
2. Increase in cross-border digital taxation treaties
3. Formation of regional trade and security blocs
4. Decline in Foreign Direct Investment (FDI) in neutral countries

Select the correct answer:

(a) 1 and 3 only

(b) 1, 3 and 4 only

(c) 2 and 4 only

(d) All of the above

2. With reference to the India–U.S. Civil Nuclear Agreement (123 Agreement), consider the following statements:

1. It required a waiver from the Nuclear Suppliers Group.
2. It placed India's civilian nuclear reactors under IAEA safeguards.
3. It grants India permanent membership in the NSG.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) All of the above

3. Consider the following statements regarding Triangular Partnerships:

1. They involve three actors: a beneficiary, a pivotal partner, and a facilitating partner.
2. They are a recent Western initiative to counter China's BRI.
3. India often plays the role of the facilitating partner.

Which of the above statements is/are correct?

(a) 1 only

(b) 1 and 2 only

(c) 2 and 3 only

(d) All of the above

4. The doctrine of Common But Differentiated Responsibilities (CBDR) was undermined by which of the following actions?

(a) India signing the Paris Agreement

(b) U.S. withdrawal from the Paris Agreement

(c) Formation of the BASIC Group

(d) Introduction of NDCs in the Paris Framework

5. Which of the following are pillars of the AUKUS Pact?

1. To support acquisition of nuclear-powered submarines by Australia
2. Joint development of renewable energy technologies
3. Enhanced cooperation on quantum technologies and cybersecurity
4. Shared command structure for Indo-Pacific naval operations

Select the correct answer:

(a) 1 and 2 only

(b) 1 and 3 only

(c) 2 and 4 only

(d) All of the above

Mains Questions

Q1. (150 words)

"India's foreign policy is navigating a turbulent global order shaped by economic nationalism and multilateral decay." Discuss with reference to recent U.S. protectionist measures.

Q2. (250 words)

"India's Neighbourhood First policy has been central to its regional strategy. However, China's assertiveness and local sensitivities pose new challenges." Examine.

ECONOMY

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3.1. STATE FINANCES

Why in the News?

Reserve Bank of India (RBI) released **State Finances: A Study of Budgets Of 2024-25 Report** with theme **'Fiscal Reforms by States'**.

Fiscal Position of the State Governments as per Report

- **Gross fiscal deficit:** Within 3% of GDP (2021-22 to 2023-24).
- **Revenue deficit:** 0.2% of GDP (2021-22 to 2023-24).
- **Capital Expenditure:** Increased to 2.6% of GDP from 2.2%
- **Debt of states:** Declined from 31.8% of GDP (2004) to 28.5% of GDP (2024);
  - **Fiscal Responsibility and Budget Management (FRBM)** target: 20%.

Why Fiscal Deficit is still high in some States?

- **Power Sector Losses**: Losses at ₹6.5lakh crore by 2022-23 (2.4% of GDP).
- **Rising subsidy burden**: Farmers, electricity, youth, women etc.
- **Unreliable fiscal data and reporting**
- **Other issues in fiscal management in states**: Delays in the setting up of State Finance Commissions (SFCs), Economic, climatic and geopolitical uncertainties.

Fiscal Reforms undertaken by States

- **Fiscal Responsibility Legislations (FRLs)**
- **Institutional Reforms**: **State Institutions of Transformation** set up with help of NITI Aayog by several states
- **Expenditure Reforms**:
  - Direct Benefit Transfer, National Pension System etc.
- **Tax Reforms:** Adoption of **goods and services tax (GST), Modernisation of Tax Administration.**
- **Market-based financing:** increase from 17% in 2005-06 to 79% in 2024-25.
- **Power Sector Reforms:** UDAY scheme

Way Forward: Recommendations of the report

- **"Next generation" fiscal rules**: States have autonomy to create fiscal rules.
  - **Risk-based fiscal framework** as per debt and growth; **Medium-Term Expenditure Framework (MTEF)** which links policymaking to budgeting.
- **Data Driven Fiscal Policy Making:** Data analytics, machine learning and artificial intelligence can be used for improved taxation system.
- **Improving fiscal data generation and dissemination processes**
- **Contain DISCOM Losses**: **enhancing productivity**, reducing transmission and distribution losses etc.
- **Other recommended measures:** Rationalize subsidies and **centrally sponsored schemes (CSS)**, Implement the 'golden rule' for expenditure, Ensure timely SFC appointments, Use outcome budgeting for accountability, Adopt climate budgeting for sustainable finances.

Conclusion

The State governments have demonstrated **fiscal prudence**. However, the state finances will increase due to several developmental expenditure and liabilities and **reforms have to be undertaken**.

3.2. FISCAL HEALTH INDEX REPORT 2025

Why in the News?

Recently, NITI Aayog released **Fiscal Health Index (FHI) Report 2025**.

More on the News

- FHI report will be an **annual publication focusing on the fiscal health of Indian states**.
- It will help in **policy interventions** for **fiscal governance, economic resilience**, and **stability.**

Fiscal Health Index 2025

- **About**: Index **ranks States on the basis of composite fiscal index**, which is based on five major sub-indices (Quality of Expenditure, Revenue mobilization, fiscal prudence, debt index, debt sustainability) and nine minor sub-indices.
- States have been classified on the **basis of the FHI score: Achiever:** Greater than 50; **Front Runner:** Greater than 40 & less than equal to 50; **Performer:** Greater than 25 & less than equal to 40; **Aspirational:** Less than equal to 25.
- **Report analyses 18 major states** using CAG data, **excluding special category and Himalayan states**.
- **Period of the analysis:** Financial Year 2022-23.

Key Findings of FHI 2025

- **Top Performing States:** Odisha, Chhattisgarh and Goa.
- **Non-tax revenue: Odisha, Jharkhand, Goa, and Chhattisgarh** demonstrated strong non-tax revenue generation, accounting for **21% of their total revenue**.
- **Capital expenditure:** Madhya Pradesh, Odisha, Goa, Karnataka, and UP demonstrated stronger capital investment by **allocating 27% of their development funds to capital expenditure**.
- **Debt Sustainability:** West Bengal and Punjab showed fiscal trends with increasing debt-to-GSDP ratios.
- **Significance of the FHI Report:** Competitive federalism, Transparency and accountability, Informed policy making.
- **Conclusion:** FHI encourages states to adopt best practices in fiscal management.

3.3. GDP BASE YEAR REVISION

Why in the News?

Government has formed 26-member Advisory Committee **on National Accounts Statistics (NAS)** to update the GDP base year from existing 2011-12 to 2022-23.

More on the News

- **Chairman of Advisory Committee on NAS:** Biswanath Goldar
- **Aim:** To identify new data sources & refine methodology for compiling NAS.
  - **Advisory Committee on NAS** will review data sources to align GDP with inflation and industrial indices.
- The **previous base year revision in 2015** changed base **year from 2004-05 to 2011-12.**
  - **Gross Value Added (GVA)** at basic prices was adopted.

What is Base Year?

- A base year is the **reference year** whose **prices are used to calculate the real growth** (minus inflation) in national income.
- Base year is a **benchmark used for GDP calculation**.
- Revision of base year are also **relevant for other metrics** such as the Index of **Industrial Production (IIPs), the Wholesale Price Index (WPI) and the Consumer Price Index (CPI).**

Why Update needed: Removing Inflation Effects, Enhances Data Quality, enhances more reliable data use, Aids in global comparison, adapts to post-pandemic dynamics, supports policymaking, etc.

About GDP

- **Measurements of GDP:** 3 ways (Production, Expenditure, Income Approach)
  - **Nominal GDP:** Measured at current market prices, ignores inflation.
  - **Real GDP:** Adjusted for inflation using base year prices, showing true economic growth.
- **Limitations of GDP:** Excludes non-market activities (e.g., household work), Ignores income inequality, Overlooks environmental damage, Misses informal economy contributions, Doesn't measure welfare or living standards.

3.4. WPI BASE YEAR REVISION

Why in the News?

The **Government of India** has constituted a **Working Group** for **base revision** of the current series of **Wholesale Price Index (WPI)** from base **2011-12 to 2022-23.**

More on the News

- Group will suggest improvement in computational methodology and **recommend roadmap for switch over from WPI to Producer Price Index (PPI)**.
  - **Advantages of PPI:** Cover services, exclude indirect taxes, **International Prominence.**

Issues with WPI

- **Need for revision in WPI Base Year**: Structural Changes, Updating Commodities basket, Compatibility with Goods and Services Tax.;
- **Need to replace WPI by PPI:** Multiple Counting Bias, Exclusion of Services, Exclusion of taxes.

Comparison

Parameters	WPI	PPI	CPI
Definition	Measures price changes at the wholesale level.	Measures price changes at the producer level.	Measures price changes at the consumer level.
Base Year	2011-12	Not yet officially implemented in India.	2012
Composition	Primarily includes manufactured products, fuel, and primary articles.	Includes both goods and services across different production stages.	Includes goods and services like food, healthcare, education, and housing.
Are services included?	No	Yes	Yes
Measurement	The WPI weights are based on production values.	Weights of items are derived from Supply Use Table.	The weights of the CPI basket are based on the average household expenditure taken from the Consumer expenditure survey.
Inclusion of taxes	Excludes indirect taxes	Some variants of PPI may include taxes if they are passed on to producers.	Includes indirect taxes
Multiple Counting bias	Present	Absent	Present
Published by	Office of Economic Advisor, DPIIT, Ministry of Commerce and Industry	Not yet officially implemented in India.	National Statistics Office (NSO), Ministry of Statistics and Programme Implementation.

Conclusion

WPI base year revision and transition to PPI may lead to **more precise and globally aligned inflation metric.** Enhance **economic policymaking and** provide a **robust framework for data-driven decisions**.

3.5. INTERNATIONALIZATION OF RUPEE

Why in the News?

Recently, **Reserve Bank of India** (RBI) liberalized **FEMA regulations, 1999** to **encourage use of Indian Rupee** (Internationalization of Rupee) for **settlement of cross border transactions.**

Recent Changes made in FEMA regulations by RBI

- **People residing outside of India** will be able to:
  - **Open Indian Rupee (INR) accounts in overseas branches of Authorized Dealer banks** and use them for foreign investment.
  - **Settle transactions with other persons resident outside India** using repatriable INR accounts such as Special Non-Resident Rupee (SNRR) account & **Special Rupee Vostro Account** (SVRAs).
- **Indian exporters** can **open accounts in any foreign currency overseas** for **trade transactions**.

- **Vostro Account:** It refers to a **foreign bank's account held in a domestic bank** in the local currency.
- **Nostro Account**: It refers to a **domestic bank's account held in a foreign bank** in the currency of the overseas country.

Internationalization of Rupee: It refers use of the rupee in cross-border transactions, including trade, current and capital account transactions.

International Currency: Currency that is used and held beyond the borders of issuing country by country's residents and non-residents. E.g., US dollar, Euro etc based on usage, economy, stability.

Benefits of Internationalization of Rupee

- **Reduces** dependence on foreign currencies, **currency crises, and inflationary pressures.**
- **Limits Exchange Rate Risks promoting business.**
- **Reduces Requirement of Forex Reserves.**
- **Deficit Financing managing fiscal deficits without exchange rate risks**.
- **Strengthening India's Financial Markets.**

Challenges in Internationalization of the Rupee

- **Exchange Rate Volatility**
- **Monetary Policy Dilemma or Triffin Dilemma**: Balance global currency demand with domestic needs.
- **Restricted Convertibility**: INR is fully convertible in the current account but **partially in the capital account**.
- **Risk to External Shock and Lack of global Usage**

Steps taken for Internationalization of Rupee

- **Internationalization of Indian Payment Infrastructure:** UPI is adopted in **Singapore, France, UAE, etc.**
- **Memorandum of Understanding (MoU):** RBI has signed **MoU with the central banks of the United Arab Emirates, Indonesia and Maldives**.
- **RBI's Strategic Action Plan for 2024-25.**
- **Special Vostro Rupee Accounts (SVRAs):** RBI has enabled **INR trade settlement with 22 countries**.
- **Other: Bilateral Currency Swap agreements**, Issue of **rupee-denominated bonds** i.e. Masala bonds.

Way Forward (Recommendations of Inter-Departmental Group of RBI)

- **Internationalisation of** Real Time Gross Settlement (**RTGS**), National Electronic Funds Transfer (**NEFT**).
- **Inclusion of INR in Continuous Linked Settlement (CLS):** CLS is a global **system for the settlement of foreign currency transactions** on a Payment vs Payment (PvP) basis.
- **Currency Swaps & Local Currency Settlement (LCS)**
- **Efforts for Inclusion of INR to Special Drawing Rights (SDR) basket.**
- **Strengthening Financial Markets:** Harmonisation of KYC norms of RBI and SEBI, Global 24x5 INR market, Inclusion of Indian Government Bonds in Global Bond Indices.

3.6. RUPEE DEPRECIATION

Why in the News?

Recently, Indian rupee's **exchange rate** against US dollar breached 85 mark facing **sharpest depreciation**.

What is Rupee Depreciation?

- It refers to the **decline in the value of the Indian Rupee** (INR) **relative to a foreign currency**.
- **Exchange Rate:** It is the price of one currency in terms of other.
  - **Fixed Exchange Rate:** fixed by the government.
  - **Floating Exchange Rate:** fixed by the forces of demand and supply of different currencies in the foreign exchange market.
  - **Managed Floating Exchange Rate:** combination of previous two. **Currently India follows this with occasional RBI interventions.**

Key Factors Responsible for Rupee's Depreciation

- **Confidence in Central Bank:** value at risk assessments of the central bank's balance sheet by market.
- **Illiquidity:** Short term foreign currency debt becoming larger than liquid foreign currency assets.
- **Inflation:** Higher inflation in erodes purchasing power.
- **Monetary policy:** RBI's interest rate decisions and foreign exchange interventions.
- **Capital Outflows:** Foreign investors pulling out funds;
- **Trade Deficit:** imports exceeding exports.
- **Global economic factors:** High crude oil prices, US Federal Reserve interest rate hikes, etc.

Impact of Rupee's Depreciation

- **Positive Impact:** Boost to Exports, Higher Remittance Value, Capital and Investment increase.
- **Negative Impact:** Higher Import Costs, Higher Inflation, Capital and Investment decrease (FDI decrease), Increased cost of foreign debt, reduced purchasing power.

Way Forward

- **Short-term measures:** RBI's market operations, Currency swap agreements, Monetary Policy Adjustments, import rationalization to restrict non-essential imports, etc.
- **Long-term measures: Diversifying trade payments:** Boosting forex reserves; **Export promotion** (**Rangarajan Committee): Free Trade Agreements, ease of doing business;** Fiscal Prudence, etc.

3.7. CENTRAL BANK DIGITAL CURRENCY (CBDC)

Why in the News?

US President issued executive order **banning** establishment of USA's CBDC i.e., **'Digital Dollar'**.

What is Digital Currency?

- It is money that is **exclusively available only in digital or electronic form**.
- **3 Types of Digital Currencies:**
  - **Cryptocurrency:** Blockchain ledger is used to verify transactions, Decentralized, e.g., bitcoin.
  - **CBDCs: Digital version of fiat currencies** issued by Central Banks, centralized, e.g., digital rupee.
  - **Stablecoins: backed by underlying asset's reserves or by algorithms** modifying the supply based on market demand, Centralized or hybrid, e.g., tether.

About CBDC

- **Legal tender** and **liability in digital form denominated in sovereign currency** appearing on central bank balance sheet. **(RBI)**

AHMEDABAD | BENGALURU | BHOPAL | CHANDIGARH | DELHI | GUWAHATI | HYDERABAD | JAIPUR | JODHPUR | LUCKNOW | PRAYAGRAJ | PUNE | RANCHI

- **Types of CBDCs:**
  - **Wholesale CBDCs:** Used among banks and other licensed financial institutions.
  - **Retail CBDC:** General public uses via digital wallets, smartphone apps, etc. **Two models of retail CBDC: Token-based CBDCs:** anonymous; **Account-based CBDCs:** Requires identification.
- **India's Digital Rupee (e₹):** Issued and regulated by the RBI. Currently in pilot mode, liability of RBI.

Potential benefits of CBDCs

- **Financial inclusion:** Can give access to digital payment services, allowing them to engage more.
- **Reduced transaction costs**
- **Reduced dependence on cash,** tracking of transactions, reducing corruption, tax evasion, and illicit activities.
- **Improve monetary policy transmission; Cross-Border Payment Efficiency**
- **Programmable Payment Mechanisms restricting usage.**

Challenges with CBDCs: Cybersecurity risks, Privacy Concerns, Digital divide, International Regulatory Challenges, Threat to Monetary Sovereignty.

Way Forward

- **Balancing Privacy and Transparency:** Use of technologies such as Zero-Knowledge Proofs (ZKPs) and privacy-preserving digital ledger solutions.
  - **Zero-knowledge Proofs** are a cryptographic method used to prove knowledge about a piece of data, without revealing the data itself.
- **Monetary Policy and Fiscal Policy integration:** CBDCs use for Direct Benefit Transfers (DBTs), etc.
- **Regulatory and Legal Frameworks**: States need to unambiguously define CBDCs to prevent misuse.
- **Cross-border collaboration and standardization:** Establish global standards for interoperability, regulation.

3.8. INDIA'S DIGITAL ECONOMY

Why in the News?

The **Ministry of Electronics and Information Technology (MeitY)** has released a comprehensive study titled **Estimation and Measurement of India's Digital Economy**.

About Study

- The study has been done by the **Indian Council for Research on International Economic Relations.**
- It is based on an **internationally accepted framework** developed by the **Organisation for Economic Co-operation and Development (OECD)** and the **Asian Development Bank (ADB).**
  - India will be **first among developing countries**, to have used the OECD framework and beyond including digital share of **traditional industries** like **banking, financial services, insurance (BFSI)**, and **education**.

What is the Digital Economy?

- It generally refers to the **information and communication technology (ICT)** sector, including telecommunications, the Internet, ICT services, hardware and software.

Overview of India's Digital Economy (2022-23)

- **Status:** Third largest digitalized country (as per State of India's Digital Economy Report 2024).
- **Contribution:** ~USD 402 billion, 14.67 million workers or 2.55% of India's estimated workforce.
- **Projected Growth:** Likely to rise to 13.42% by 2024-25, Share will be larger than agriculture or manufacturing

Benefits/Significance of Digital Economy

- **Enhances Exports**: India is the 2nd highest ICT services exporter in the world, behind Ireland (2023).
- **Enhanced Service Delivery:** E.g., **e-Hospital** and **e-Sanjeevani** (National Telemedicine Service).
- **Increases Global Competitiveness/Promotes Ease of doing Business.**
- **Boost to Startups and Innovation:** India has the **third-largest number** of homegrown unicorns in the world (2024). Also, hosts about **55%** of the world's **Global Capability Centers** (GCCs: offshore centres established by multinational corporations to provide a variety of services to their parent organisations).
- **Reducing Inequality/Promoting Rural Development**: E.g., the **National Agriculture Market (e-NAM)**

Key Challenges faced by the digital economy

- **Universal Definition; Lack of Reliable Data**
- **Cyberattacks and cybercrimes**: E.g., Digital arrest and cyber slavery
- **Privacy violation and related Concerns**: E.g., misuse of personal data, misinformation, monopolisation, etc.
- **Poor digital Literacy**: 70% of Indian youth aged between 15 and 29 years cannot send emails (NSSO).
- **Other: Off-take on semiconductors** in India is slow, **Telecom** is yet to **unleash competitive forces**, etc.

Way Forward

- **Reliable Data Collection**: Produce **periodic updates** and expanding estimates for the digital economy
- **Promoting digital literacy and skilling:** Incorporate digital literacy in the schools.
- **Minimise regulatory uncertainty:** Bring regulatory clarity on the use of **emerging technologies**.
- **Make high-quality broadband universal**
- **Enhance cybersecurity and trust:** Build cross-country collaboration.
- **Improve the ease of doing business:** Review and re-evaluate business laws, including labour laws.

3.9. HOUSEHOLD CONSUMPTION EXPENDITURE SURVEY, 2023-24

Why in the News?

National Sample Survey Office (NSSO) released household consumption expenditure survey **(HCES)**.

More on the news

- MoSPI decided to conduct two household consumption expenditure surveys **during 2022-23 and 2023-24**.

Important Findings of HCES: 2023-24

- Growth in Monthly Per Capita Expenditure (MPCE): **Rural**: ₹4,122 (₹4,247 with imputed benefits, **9% increase**), **Urban**: ₹6,996 (₹7,078 with imputed benefits, **8 % increase**).
- **Urban-Rural Gap: Reduced** from 84% (2011-12) to 70% (2023-24), indicating rural consumption growth.
- **Increased Spending on Non-Food Items:** conveyance, clothing, etc.
- **Consumption Inequality Reduced: Gini coefficient declined** to 0.237 (rural) and 0.284 (urban).
- **Inequality among States:** MPCE is highest in Sikkim and lowest in Chhattisgarh.

About Household Consumption Survey Expenditure (HCES)

- **Conducted by: National Sample Survey Office (NSSO)** at regular intervals. It was conducted at **one-year duration** (starting 1950-51). Since its 26th round, the survey has been **conducted roughly every 5 years.**
- **Key Objectives:** Reflecting living standards and well-being; Facilitates the development of **Consumer Price Indices (CPI);** Basis for revising the base year.

3.10. RESTRUCTURED SKILL INDIA PROGRAMME

Why in the News?

Union Cabinet approves continuation and restructuring of Skill India Programme (SIP).

More on the News

- It has been extended till **2026** with an outlay of **Rs.8,800 crore**.
- Restructured by **combining 3 components**, Pradhan Mantri Kaushal Vikas Yojana 4.0 **(PMKVY 4.0)**, Pradhan Mantri National Apprenticeship Promotion Scheme **(PM-NAPS)** and Jan Shikshan Sansthan **(JSS) Scheme**.

Skill India Mission

- Launched in **2015** as Centre Sector Scheme under **Ministry of Skill Development and Entrepreneurship (MSDE).**
- **Aim**: To provide a strong **institutional framework** for skill development and impart **training to youth**.
- **Formal recognition of skills**: All certifications mapped to **National Skills Qualification Framework (NSQF)** and seamlessly integrated with **DigiLocker** and the **National Credit Framework (NCrF).**
- Skill Development through:
  - **Short-term training**: Pradhan Mantri Kaushal Vikas Yojana (PMKVY) and Jan Shikshan Sansthan (JSS)
  - **Long-term training**: Craftsmen Training Scheme through Industrial Training Institutes (ITIs)

About the Restructured Schemes

PMKVY 4.0

- Provides **NSQF-aligned demand-driven skill training** through **Short-Term Training (STT)** and reskilling and upskilling through **Recognition of Prior Learning (RPL).**
- **Target beneficiary**: 15-59 years
- **Future Skills**: 400+ new courses on **emerging technologies** like AI, 5G tech, Green Hydrogen, etc.
- **Skill Hubs**: Established across premier academic institutions like IITs, NITs, Jawahar Navodaya Vidyalayas etc.
- **International Mobility Initiatives**: **Mobility Partnership Agreements (MMPAs),** sectorial skill gap studies and training in domain skills, soft skills etc.
  - India has signed **MMPAs** with 10 countries. E.g. France, Germany, Israel etc.
- 30 **Skill India International Centers** to be set up to cater to the demand for skilled workers for overseas.
- **Whole-of-government approach**: E.g. collaboration with PM Vishwakarma, PM Surya Ghar: Muft Bijli Yojana, National Green Hydrogen Mission, NAL JAL Mitra etc.

PM-NAPS

- Aimed at fostering **apprenticeship training**, ensuring apprentices gain **industry-specific skills** in both **manufacturing and services** through **real-world exposure** in accordance with **Apprenticeship Act, 1961**.
- **Target Beneficiary**: 14-35 years
- **Financial incentives** to industries for engaging apprentices. **25% of the stipend**, up to **Rs.1,500** per month per apprentice, will be provided by the **Central Government** through Direct Benefit Transfer (DBT).
- **Future Skills**: Apprenticeship opportunities in emerging fields such as **AI, Industry 4.0 technologies etc.**
- **Inclusivity**: Promotes enrolment of apprentices in **small establishments like MSMEs** and **underserved areas**.

JSS Scheme

- **Objective: Community-centric** skilling initiative to provide **vocational training** to non-literates, neo-literates as well as school drop-outs in rural regions by identifying relevant skills in that region.
- **Target Beneficiary**: 15-45 years
- **Inclusivity**: Focus on women, rural youth, and economically disadvantaged groups. JSS is linked with initiatives like **PM JANMAN**, Understanding of Lifelong Learning for All in Society (**ULLAS**), etc.

Need for Restructuring Skill India Mission

- **In-silos approach:** Low impact of schemes like PM-NAPS, PMKVY, and JSS
- **Lack of Industry-academia linkage**
- **Others**: **Mismatch** between demand and supply, **limited mobility** between **skill and higher education** programmes and **vocational** education and very **low coverage of apprenticeship**.

Other Challenges to skilling: Fast-changing job market, Lack of quality skilling, Governance issues: Multiplicity of assessment and certification, **Lack of Quality Infrastructure, Gender inequality**

Way Forward

- **Evidence-based interventions**: Improve **mapping of skills**
  - **E.g. 36 Sector Skill Councils (SSCs),** led by **industry leaders** set up by **NSDC** to identify the skill need.
- **Promote experiential learning**: Strengthen **National Council for Vocational Education and Training.**
- **Private sector participation**
- **Learning from Global Best Practises**:
  - **Technical and Vocational Vouchers Program (TVVP), Kenya**: vocational training through vouchers.
  - **Apprenticeship Levy, United Kingdom**: To incentivise employers to recruit apprentices

3.11. FOREIGN DIRECT INVESTMENT (FDI)

Why in the News?

The **cumulative amount of FDI inflows** into **India** has crossed the **$1 trillion milestone** ($1,033.40 billion) in the **April 2000-September 2024 period**.

More on the News

- The decade **2014-24** saw an **increase of 119%** in FDI inflows over the preceding decade (2004-14).
- India's FDI inflows have increased **~20 times** from **2000-01 to 2023-24**.
- During 2000-2024, India's **service sector** attracted **the highest FDI equity inflow** (US$ 115.18 billion).
- Maharashtra received highest 31%, with Karnataka 21%, Gujarat 16%. **Mauritius largest source.**

What is Foreign Direct Investment (FDI)?

- FDI means **investment** through **capital** instruments by a person **resident outside India** in an **unlisted Indian company**; or in **10% or more** of the post issue **paid-up equity capital** on a fully diluted basis of a **listed Indian company.**
- It is usually a **long-term investment** and is largely a **non-debt creating capital flow.**
- **Routes of FDI**
  - **Automatic Route: Informing** the **Reserve Bank of India (RBI)** after the investment is made.
  - **Government Approval Route: Prior nod from the Ministry or department concerned**. Mandatory for investments from a land border sharing country.
- **Regulation**
  - Currently, FDI in India is **governed by FDI Policy 2020** and **FEMA (Non-debt Instrument) Rules, 2019.**
  - **DPIIT** is the **primary regulator of FDI in India alongside RBI** (authority to **implement the FDI Rules).**
  - **Sectors where FDI is Prohibited:** Lottery, Gambling, Betting, Real Estate Business except development of townships, Tobacco Manufacturing, Sectors not open to Private sector (Atomic Energy and Railway Operations) etc.

FDI vs. Foreign Portfolio Investment (FPI)

Parameters	Foreign Direct Investment (FDI)	Foreign Portfolio Investment (FPI)
Form of investment	An investment made by a foreign entity in a business enterprise intended for long-term operations.	Investment in financial assets (e.g., stocks, bonds) of a foreign country intended at short-term gains.
Type of investment	Involves investments in financial and non-financial assets, including resources, technology, and securities.	Focuses on financial assets such as stock, bonds, etc.
Volatility	Low volatility	More volatile
Investor Control	Higher as they can influence company decisions	Limited control
Liquidity	Low liquidity	Highly liquid

Challenges for FDI in India

- **Complex Regulation and policy uncertainty:** E.g., Retrospective taxation on Vodafone
- **Institutional deficiencies:** Inadequate enforcement by bodies like Competition Commission of India (E.g., Flipkart controversy)
- **Concentration of FDI:** Concentrated in few sectors like services as well as regions (urban areas of Maharashtra, Karnataka etc.)
- **Impact on local businesses:** Foreign companies' dominance can harm local businesses (e.g., Walmart's entry).
- **Impact on Labour market:** Concerns over job security and working conditions, with companies like Amazon and Uber facing legal challenges.

Challenges faced by Indian Economy due to FDI: Dependency on foreign capital, Development vs. Environment, Intellectual Property concerns.

Steps taken to promote FDI inflows

- **Schemes:** National Industrial Corridor Programme, Production Linked Incentive (PLI) Scheme etc.
- **Promoting Ease of Doing Business (EoDB):** E.g., **Jan Vishwas (Amendment of Provisions) Act, 2023**; more than 42,000 compliances reduced
- **Project Development Cells (PDCs):** To fast-track investments in all concerned Ministries/ Departments.
- **Technological interventions:** National Single Window System (NSWS) and Foreign Investment Facilitation Portal (FIFP)
- **Global Investment Summits**: E.g., **Vibrant Gujarat Global Summit** to attract FDI.

Way Forward

- **Infrastructure and Skill Enhancement**
- **Policy reforms for** attracting FDI in manufacturing as well. (**Baba Kalyani Committee**)
- **Dispute resolution and contract enforcement; FDI in Tier-II and Tier-III cities and adopt cluster-based development** (Bulk Drug Parks, Mega Food Parks, etc.); **Bilateral Investment Treaties (BITs)**

3.12. THE BANKING LAWS (AMENDMENT) BILL, 2024

Why in the News?

Recently, the Banking Laws (Amendment) Bill, 2024 was passed by the Lok Sabha which seeks to improve governance standards in India's Banking System.

More on the News

- The Bill proposes amendments to the **RBI Act, 1934**; **Banking Regulation Act, 1949**; **State Bank of India Act, 1955**; and the **Banking Companies (Acquisition and Transfer of Undertakings) Acts** of 1970 and 1980.
- **Key Provisions of the Bill**
  - **Fortnight for cash reserves:** Redefined as 1st to 15th or 16 to month end, applicable to all banks.
  - **Substantial interest in the company:** Threshold raised from ₹5 lakh to ₹2 crore, subject to revision.
  - **Investor Education and Protection Fund (IEPF)**: Unclaimed dividends, shares, and bonds transferred after seven years.
  - **Remuneration of Auditors**: Banks can decide without RBI-central government consultation.

Issues with the Governance of Banking System in India

- **Rise in Banking Frauds:** RBI's Report noted 18,461 frauds amounting to ₹21,367 crore.
- **Governance and autonomy of Public Sector Banks (PSBs): Duality of control over PSBs** from the **RBI** and the **banking division of the Union Ministry of Finance, Fear of 5Cs** (CAG, CBI, CVC, CIC, Courts).
  - **Regulatory gaps and ambiguity:** Coexistence of multiple regulatory bodies like the RBI, SEBI, IRDAI etc.
  - **Cooperative banking sector** suffers from weaker regulation due to dual control by RBI and state registrar.
- **Structural issues:**
  - **Credit growth outpacing deposit growth**: household savings shift from bank deposits to mutual funds etc.
  - **Political considerations** like debt waivers disrupting credit culture and balance sheets of banks, etc.
- **Cybersecurity and IT Risks, Digital Frauds**

Recent measures taken to improve Banking Governance in India

By the Union Government	By the RBI
Reforms in PSBs: Consolidation of PSBs recapitalization of PSBs to Basel III norms, etc. **Legislative reforms:** Amendments to the Banking Regulation Act, 1949 to empower **RBI to supersede boards in case of governance failures**; **implementation of IBC** to streamline NPA resolution; etc. **Reducing stress on Banks.**	**Strengthened risk management framework:** Risk-based Supervision, **Asset Quality Review** and **Prompt Corrective Action Framework**, **Prudential Framework for Resolution of Stressed Assets Framework** (2019) **Regulatory reforms for Cooperative Banks:** Enhanced RBI's regulatory control over cooperative banks under **Banking Regulation (Amendment) Act, 2020.**

Way Forward

- **Autonomy of PSBs**: Establish Bank Investment Company to manage government stakes. (P J Nayak)
- **Performance Incentives:** Link executives' pay to profits. (P J Nayak)
- **Transparency:** Strengthen disclosures, reporting, and whistleblower mechanism. (Narasimham-II)
- **Regulatory Coordination:** Improve RBI-SEBI-IRDAI collaboration. (Narasimham-II)

3.13. URBAN COOPERATIVE BANKS

Why in the news?

The RBI has imposed a **six-month moratorium on New India Co-operative Bank Limited**.

Structure of Co-operative Credit Institutions in India

- **Urban Co-operative Banks**
- **Rural Co-operative Credit Institutions:**
  - **Short-Term Structure**: State Cooperative Banks, Central Cooperative Banks, Primary Agricultural Credit Societies.
  - **Long-Term Structure**: State Cooperative Agriculture and Rural Development Banks, Primary Cooperative Agriculture and Rural Development Banks.

About Urban Cooperative Banks

- **Urban Cooperative Banks (UCBs)** are a subset of cooperative banks in India that operate primarily in urban and semi-urban areas.
- Currently, they are registered as cooperative societies **under respective State Cooperative Societies Acts** (for single-state operations) **or Multi-State Cooperative Societies Act, 2002** (operate across multiple states).
- **Control and Regulation:** UCBs function under a **dual regulatory framework**: **Banking Regulation Act, 1949** and **Registrar of Cooperative Societies (RCS).**
- **Significance of UCBs:** Financial Inclusion, Local Focus, Priority Sector Lending, Developmental Support.

Challenges Faced by UCBs

- **Weak Governance and Fraud Risks**: During 2023-24, licenses of 24 UCBs were cancelled.
- **Competition from Commercial Banks, Fintech: S**hare **declined to 2.5%** in March 2024,**from 3.8% in 2017**.
- **High Non-Performing Assets (NPAs):** Gross NPAs of UCBs were 8.8 per cent at the end of March 2024.
- **Capital Adequacy Shortfalls**: Limited access to capital markets.
- **Regulatory Non-Compliance; Technological Obsolescence**: lag in adopting digital banking technologies.

Recent measures taken

- **Banking Regulation Amendment Act, 2020:** The amendment empowered the RBI to supersede boards, restructure managements and formulate resolution plans.
- **Revised Prompt Corrective Action (PCA) Framework:** In 2024, the RBI extended the PCA framework to UCBs. PCA is a mechanism that allows RBI to intervene early when a bank shows signs of financial distress.
- **Liquidity Support via Umbrella Organization (UO):** Established **National Urban Co-operative Finance and Development Corporation** as UO for UCBs.
- **Tiered Regulatory Framework:** RBI introduce 4-tiered regulatory framework for UCBs based on deposit size.

Way forward

Strengthening Governance and Supervision: Mandate professionalization of UCB boards; Consolidation and Mergers; Independent Audits; Technology Adoption; Social Audits

3.14. MUTUAL CREDIT GUARANTEE SCHEME FOR MSMES

Why in the News?

Government approved Mutual Credit Guarantee Scheme announced in Budget to **Strengthen MSMEs.**

Key Features of Mutual Credit Guarantee scheme for MSMEs

- **Guarantee Coverage:** Offers **60% guarantee coverage** by National Credit Guarantee Trustee Company Limited (NCGTC) (a wholly owned company of Department of Financial Services) to **Member Lending Institutions (MLIs).**
- **Eligible Borrower:** MSME with **Udyam Registration**; **Not a Non-Performing Asset**; **Minimum 75% of project cost for equipment/machinery**.
- **Duration of the Scheme: 4 years or until Rs 7 lakh crore** in guarantees, whichever is earlier.

Revised The Classification of MSMEs

Rs. in Crore	Investment		Turnover	
	Current	Revised	Current	Revised
Micro Enterprises	1	2.5	5	10
Small Enterprises	10	25	50	100
Medium Enterprises	50	125	250	500

- **Repayment Terms: Loans up to ₹50 crore**: Repayment period of up to 8 years, moratorium of up to 2 years on principal; **Loans above ₹50 crore:** Longer repayment schedules & moratorium periods.

Other Key Measures Announced for MSMEs in Union Budget 2025-26

- A new **Fund of Funds with ₹10,000 crore** will be established to expand support for startups.
- A scheme for 5 lakh **first-time women, Scheduled Caste, and Scheduled Tribe entrepreneurs** will provide term loans up to ₹2 crore over five years.

Significance of MSMEs for India

- **Contribution to GDP:** MSMEs contributes approximately **30 % of GDP**, **36 % to manufacturing output**.
- **Employment:** India has over 1 crore registered MSMEs, employing nearly **7.5 crore people**.
- **Foreign Currency:** MSMEs contribute **~45% of India's total exports.**
- **Reduces Disguised Unemployment where** more people are employed than are required.
- **Rural Development:** Around **50% of the MSMEs operate in rural areas**, provide 45 % of total employment.

Challenges Faced by MSMEs

- **Finance issues**: **Informal** nature of MSMEs, credit assessment difficulties etc.
- **Infrastructure Bottlenecks:** Poor roads, **unreliable power supply, and inadequate digital infrastructure**.
- **Others: Delayed Payments; Regulatory & Compliance Burden**: Complex taxation, labor laws etc; **Limited Integration of Technology**; **Export issues**: **Lack of Environmental, social and governance (ESG) reports**

Initiatives Undertaken for MSMEs

- **Trade Enablement & Marketing (TEAM) Initiative:** Enable and assist MSMEs to **onboard e-commerce platforms** by assisting in catalogue preparation, account management, logistics and packaging.
- **PM VISHWAKARMA**: Provide end-to-end support to artisans and craftspeople of **18 trades**.
- **Public Procurement Policy: 25% of annual procurement by Central Ministries.**

Way Forward

- **Policy Support:** Including **tax incentives** and infrastructure; **Addressing Credit Gaps; Technological Adoption and Digitalization; Market Access and Expansion; Simplification of Regulatory Framework; Integration with Global Value Chains (GVC); Promoting the formation of MSME clusters.**

3.15. PRIME MINISTER DHAN DHAANYA KRISHI YOJANA

Why in the News?

Finance Minister announced launch of the Prime Minister Dhan-Dhaanya Krishi Yojana (PMDKY) in Budget 2025.

About Prime Minister Dhan-Dhaanya Krishi Yojana (PMDKY)

- **Coverage: 100 districts** based on 3 parameters: low productivity, moderate crop intensity, and below-average credit parameters.
- **Inspired by ADP:** On line of **Aspirational Districts Programme** (ADP), which was launched in 2018.
- **Outlay:** Budget documents do not provide a separate allocation for the scheme.
- **Implementation Strategy:** Will be executed in partnership with state governments.
- **Objectives:** Enhancing agricultural productivity; Crop diversification and sustainable agriculture practices; Augmenting post-harvest storage at the panchayat and block level; Irrigation, credit improvement.

Agriculture in India

- **Backbone of India's economy:** food security, providing employment, and economic development.
- **Agricultural production and yield:** Despite high level of production. agricultural yield is found to be lower in most crops compared to other countries like China, Brazil & US.
- **Data:** 18 % agricultures' contribution to India's GVA in FY24. 46.1% of the population engaged in agriculture and allied activities. 1st rank in milk, pulses, and spices production in the world.

Key Reasons for Low Agricultural Productivity

Small and Fragmented Landholdings

Average farm size in India is only 0.74 hectares in 2021-22 (NABARD).

Dependence on Monsoons

Nearly 51% of India's farmland depends on rainfall rather than irrigation.

Poor Irrigation

Percentage of net un-irrigated area over net area sown is estimated to be about 48.65%.

Low Use of Modern Technology

Limited access to high-yield seeds, fertilizers, and advanced machinery

Lack of Credit and Investment

Hardly 20% of 12.56 crore small, marginal farmers have access to institutional credit

Recent Initiatives to Increase Productivity of Agriculture

- **National Food Security Mission (NFSM):** Launched in 2007-08 to increase the production of rice, wheat, pulses, coarse cereals, and nutri-cereals sustainably.
- **Pradhan Mantri Krishi Sinchayee Yojana (2015):** Extend irrigation '**Har Khet ko pani**' & improving water use efficiency '**More crop per drop**'.
- **PM-KISAN (Pradhan Mantri Kisan Samman Nidhi):** Launched in 2019, **Central Sector scheme** providing ₹6000 per year in 3 equal installments to farmers as an income support.
- **Others: Agriculture Infrastructure Fund (2020-21), Kisan Credit Card Scheme, Pradhan Mantri Fasal Bima Yojana (2016), Nutrient based subsidy policy.**

3.16. MAKHANA

Why in the News?

Makhana Board in Bihar announced in **Budget 2025-26** under 'Agriculture as first engine' for India's development.

More on the News

- Board will be established to improve **production, processing, value addition, and marketing** of makhana.
- Provide **handholding, training support to farmers** and ensure reach of benefits of schemes.
- **Budget Allocation:** Rupee 100 crores.
- **Organization of Farmer Producer Organizations (FPOs):** streamline operations, collective bargaining power.

About Makhana

- **Foxnut,** commonly known **Makhana,** is **aquatic flowering crop** with botanical name **Euryale ferox (prickly water lily).**
- It is a plant of **tropical and subtropical climate**, considered as **native of South-East Asia and China.**
- It is also referred to as the **'Black Diamond'** due to its dark outer layer.
- It is grown in **stagnant perennial water bodies** like ponds, land depressions, oxbow lakes, swamps etc.
- Makhana is now being recognized as a **superfood.**
  - **Superfood** describes foods that are rich in nutrients, antioxidants, probiotics, fiber and other health-promoting compounds. They tend to contain good fats like mono and polyunsaturated fats. It is a marketing term. Other Superfoods: Jackfruit, Moringa, Tamarind, Turmeric, etc.
- **Preferred Climatic conditions: Temperature:** 20 to 35 degree Celsius; **Relative humidity**: 50% to 90%; **Annual rainfall:** 100 cm to 250 cm; **Soil:** Smooth loamy soil
- **Major Producing Regions**
  - **Domestic: Bihar** in India is the **leading state** accounting for **~90% of India's makhana production**. **Other states:** West Bengal, Manipur, Tripura, Assam, Jammu & Kashmir, Odisha, Rajasthan,etc.
  - **International:** Makhana is also grown in Nepal, Bangladesh, China, Japan, Russia and Korea.
- **Multifaceted Makhana: Nutritional Value**: Rich in protein, vitamins, and minerals; **Economic Impact**: Industrial Use, Starch used in high-quality fabrics; **Health Benefits**; **Environmental Impact**: Supports wetland ecosystems; **Other Uses** Includes livestock feed and religious practices.
- **Other initiatives taken to promote Makhana Cultivation: National Research Centre for Makhana, Darbhanga; One District One Product (ODOP); GI Tag**: In 2022, '**Mithila Makhana**' was conferred a GI tag.

Challenges in Makhana Cultivation

- **Low productivity due to** Traditional farming; **Lack of processing infrastructure; Export barriers; Market inefficiencies; Limited awareness among farmers; Others:** Proper weed management in water bodies, better quality equipment and related accessories, better cold storage facilities etc.

3.17. MISSION FOR COTTON PRODUCTIVITY

Why in the News?

The **'Mission for Cotton Productivity' was announced** during Budget 2025-26.

Mission for Cotton Productivity

- It is a **five-year mission** to facilitate improvements in **productivity and sustainability** of cotton farming, and promote **extra-long staple (ELS) cotton varieties**.
- **Ministry: Ministry of Textiles** will provide **science & technology support** to cotton growing farmers.
- Aligned with the Government's integrated **5F (Farm, Fiber, Factory, Fashion, Foreign) vision for the textile sector**, it will **help in increasing incomes of farmers** as well as **ensure a steady supply of quality cotton**.
- Aid in **reducing import dependence** and enhance **global competitiveness** of India's textile sector, where **80% of capacity** is driven by **MSMEs**.

Need for the Mission:

- **Stagnant Productivity**: Stagnant cotton productivity.
- **Rainfed Crop**: Majority cotton area is rainfed, mainly in the Central and Southern States, Approximately **67% of India's cotton** is produced on **rain-fed areas**.
- **Pests Menace**: Cotton crop is highly prone to pests and diseases. E.g. Pink Bollworm, Whitefly etc.
- **Unstable Prices**: Wide fluctuation in cotton prices, inadequate market infrastructure and cotton export policy.

Cotton Production, Productivity and Consumption in India

- **Production**: India ranks **1st in cotton acreage** with around **40% of the world area** under cotton.
  - **Major Cotton Producing Zones in India**: **Northern Zone** - Punjab, Haryana and Rajasthan; **Central Zone** - Gujarat, Maharashtra and Madhya Pradesh; **Southern Zone** - Telangana, Andhra Pradesh and Karnataka.
- **India ranks 2nd** in cotton **production** with estimated production of **23.83% of world cotton production.**
- **Productivity**: India ranks **39th** in overall cotton **yield** which is **lower** than countries like **USA, China, etc.**
- **Consumption**: India is the **2nd largest consumer of cotton**

Significance of Cotton in India

- **Economic Significance:** Known as **'White Gold'**
- **Contributes to Forex Reserves**
- **Export Potential**: India **exported** an estimated 30 lakh bales i.e. **6% of world export in 2022-23**.
- **Livelihood Provider**: **6 million cotton farmers** and **40-50 million** people engaged in related activity, **cotton textiles industry** is the **second largest employer** in the country after agriculture.

Cotton (Scientific name: Gossypium spp)

- Cotton is a **soft, fluffy staple fiber** that grows in **a boll (protective case) around its seeds.**
- It is a **shrub (semi-xerophyte) native** to **tropical and subtropical** regions around the world.
- **Four species of cotton** are G. Arboreum & G. Herbaceum (Asian cotton), G. Barbadense (Egyptian cotton) and G. Hirsutum (American Upland cotton). India is reportedly the **only country which grows all four species of cotton**. G. Hirsutum represents 90% of the hybrid production in India and all current Bt cotton hybrids are this.
- **Climate & Soil Requirement**
  - **Temperature**: At **germination** stage, **minimum** temperature required is **15°C** whereas in **vegetative growth** the optimum temperature is **21-27°C**.
    - It can **tolerate** temperature to the extent of **43°C** but temperature **below 21°C is detrimental**.
    - It requires **at least 210 frost-free days** and **50 to 100 cm of rainfall** for its growth.
    - **Warm days of cool nights** with **large diurnal variations** during the period of **fruiting**.
  - **Soil**: Cotton is grown on a variety of soils like **well drained deep alluvial** soils in the north, **black clayey soils** of varying depth in central region and **black and mixed black and red soils** in south zone.
  - **Crop Season**: April-May in northern India and is delayed as we proceed down south.

Bt Cotton

- **Genetically Modified (GM) cotton**, also known **as Bt cotton**, is developed **by incorporating a gene** from **the bacterium Bacillus thuringiensis (Bt)** making it resistant against pests like bollworm.
- It is the **only GM crop** approved in 2002 by the **Genetic Engineering Appraisal Committee (GEAC) of** the Ministry of Environment, Forest and Climate Change **for commercial** cultivation.
- **Bollgard I and II technologies** are famous for developing **Bt Cotton**.
- Recently, **CSIR-National Botanical Research Institute (NBRI)** has developed the **world's First Pink Bollworm-Resistant GM Cotton.**

Other Steps taken for development of cotton sector

- **Minimum Support Price (MSP) for Cotton**
- **Branding of Indian Cotton: Brand "KASTURI Cotton India"** launched
- **Mobile App "Cott-Ally":** A farmer-friendly app to increase **awareness** in regional languages.
- **Technological Interventions**: **High Density Planting System (HDPS), modernized Ginning etc.**

3.18. NATIONAL CRITICAL MINERAL MISSION (NCMM)

Why in the News?

The Union Cabinet has approved the launch of the **National Critical Mineral Mission (NCMM).**

About NCMM (Announced in Budget)

- **Objective:** Secure critical mineral supply ensuring mineral availability from domestic, foreign sources.
- **Coverage**: All stages including **mineral exploration**, **mining**, **beneficiation**, **processing**, and **recovery**.
- **Key Features**:
  - It will offer **financial incentives** for **critical mineral exploration** and promote the **recovery.**
  - It aims to create a **fast track regulatory approval process** for critical mineral mining projects.
  - It will encourage **Indian PSUs** and **private sector companies** to acquire **critical mineral assets abroad**.
  - It proposes development of **stockpile of critical minerals** within the country.
  - It includes provisions for **setting up of mineral processing parks**.
  - **Mining in offshore areas** (Polymetallic nodules contain minerals like Cobalt, REE, etc.)
- **Governance Framework:** Activities will be coordinated by the **Empowered Committee on Critical Minerals. Ministry of Mines** will be the administrative Ministry.
  - The Mission will follow a **whole-of-government approach** which means it will work closely with relevant ministries, PSUs, private companies, and research institutions to achieve its objectives.
- **Components of NCMM:** Increasing Domestic Critical Minerals Production; Acquisition of Critical Mineral Assets Abroad; Recycling of Critical Minerals; Trade and Markets; etc.
- **Definition:** Critical minerals are minerals which are essential for **economic development** and **national security of any country** lack of which may lead to **supply chain vulnerability** and **disruption**.
- India has released a list of **30 critical minerals** for India including Bismuth, Cobalt, Copper, Phosphorous, Potash, Rare Earth Elements (REE), Silicon, Tin, Titanium, etc.
- Currently, India has **heavy reliance on imports of critical minerals**.
- **Significance of Critical Minerals: Environment, National security, Economic (Electric vehicles, semiconductor chips)**

Roadblocks to India's Critical Mineral Security

- **Limited Domestic Reserves: E**.g., currently no working mining leases for **cobalt, nickel, lithium etc.**
- **Challenges in Exploration:** deep-seated, high**-risk investments**, advanced **mining technologies required.**
- **Supply chain Disruptions:** geographically concentrated affecting global supply: e.g. China controlling **60% of rare earth production, 60% of critical minerals production and 80% of the processing worldwide;** Democratic Republic of Congo supplies ~**70% of the world's cobalt**.
- **Environmental Concerns: 54% of critical materials lie near indigenous people's land.** (IRENA)
- **Inadequate recycling infrastructure**

Other Initiatives taken for critical Minerals

- **Policy and Regulatory Framework: Mines and Minerals (Development and Regulation) Amendment Act, 2023; National Mineral Policy, 2019; Elimination of customs duties**
- **Exploration and Domestic Production: Geological Survey of India (GSI); Lithium Reserves Discovery (2023)** in Reasi, Jammu & Kashmir: **Strategic Mineral Reserves Plans**
- **International Collaborations & Trade Agreements: Khanij Bidesh India Limited (KABIL), 2019:** A joint venture company of Ministry of Mines, having engagements with Argentina, Australia etc; **Minerals Security Partnership (MSP):** India joined the US-led initiative.

Way Forward for long-term critical mineral security

- **Strengthening Domestic Critical Mineral Production: Increase public and private investment**
- **Developing Domestic Processing Capabilities:** E.g. **Special Economic Zones (SEZs)**
- **Need for Robust Global Cooperation**
- **Develop a Comprehensive Critical Minerals Strategy (CMS)**: assessments and recycling facility.

- **Diversifying import sources** from various countries.
- **Role of State Government:** Infrastructure Development.

3.18.1. Major and Minor Minerals

Why in the News?

Ministry of Mines has reclassified **Barytes, Felspar, Mica, and Quartz** from **minor minerals** to **major minerals**.

Reason for Reclassification

- **Association with critical minerals** and their importance in **various high-tech industries**.
- **Quartz, Felspar, and Mica:** Found in **pegmatite rocks**, which also contain **essential critical minerals** like **Beryl, Lithium, Niobium, Tantalum, Molybdenum, Tin, Titanium, and Tungsten**.
- Earlier, when leased as **minor minerals**, leaseholders **did not report or extract** the critical minerals present.
- **Baryte and its Industrial Significance**
  - Baryte often occurs in **concretions and vein fillings** in **limestone and dolostone**.
  - It has extensive **industrial applications** in **oil and gas drilling, electronics, TV screens, rubber, etc.**

Key Benefits of the Reclassification

- Enhanced Exploration & Scientific Mining; Support for Energy Transition & Technology; Stronger Industrial Applications; Extended Lease & Better Regulation.

About Major and Minor Minerals

- A **mineral** is a natural substance of organic or inorganic origin with **definite chemical and physical properties**.
- **Mines and Minerals (Development and Regulation) (MMDR) Act, 1957,** classify **major minerals and minor minerals.**
  - **Minor minerals means** building stones, gravel, ordinary clay, ordinary sand other than sand used for prescribed purposes and **any other mineral which the Central Government may declare**.
  - **Major minerals** include all minerals other than minor minerals. E.g. Coal, Iron, Zinc, Limestone etc.
- **Framework for Governance:**
  - **MMDR Act, 1957 except for petroleum and natural gas.**
  - **Mineral Concession (MC) Rules, 1960**: Regulates permits, licenses, and leases for all minerals **except Atomic and Minor Minerals**.
  - **Mineral Conservation and Development (MCD) Rules, 1988.**
- **Role of State Governments in Mineral Regulation:**
  - **Section 15 of MMDR Act**: Gives **State Governments** the power to **make rules** for **minor minerals**.
  - **Section 23C of MMDR Act**: **State Governments prevent illegal mining, transportation, and storage**.

Section 9 (b) of the MMDR Act as amended in 2015: State Government to establish District Mineral Foundation Trust in every district affected by the mining operation.

3.19. OILFIELDS (REGULATION AND DEVELOPMENT) AMENDMENT BILL, 2024

Why in the News?

Recently, the Oilfields (Regulation and Development) Amendment Bill, 2024 was passed in the Rajya Sabha to amend the **Oilfields (Regulation and Development) Act, 1948.**

Domestic Oil and Natural Gas Sector in India: 651.8 million Metric tons (MMT) of recoverable crude oil reserves; 1,138.6 billion Cubic meters of recoverable natural gas reserves.

Key Provisions of the Bill

- **Expanded the definition of mineral oils:** Expands 'mineral oils' to include hydrocarbons, coal bed methane, and shale gas/oil, excluding coal, lignite, and helium.
- **Introduction of Petroleum lease:** It seeks to replace **the mining lease with a petroleum lease**
- **Rule-making powers of Central Government:** merging petroleum leases, environmental protection and dispute resolution
- **Decriminalization of offences:** Replaces imprisonment and minor fines with a penalty of ₹25 lakh
- **Adjudication of penalties:** Designates a Joint Secretary or above as Adjudicating Authority.

Challenges in Domestic Oil Exploration and Production: Aging Oilfields, High Taxation, Environmental Risks, Geological Data Deficiency, Low Domestic Production, Alternative Energy Growth

How Will the Oilfields Amendment Bill Shape the Future of Oil Exploration?

- **Encourages domestic production and reduce import dependency;**
- **Attracts private investment**
- **Policy modernization:** Aligns regulatory provisions with contemporary energy needs
- **Clear legislative demarcation:** Establishes a clear distinction between the Oilfields Act (for petroleum and mineral oils) and the Mines and Minerals Act (for other minerals).

3.20. PUBLIC-PRIVATE PARTNERSHIP (PPP) FRAMEWORK IN INDIA

Why in the News?

Benchmarking Infrastructure Development report released by **World Bank** analysing Public-Private Partnership (PPP) regulatory landscapes across 140 economies.

Key Highlights of the report

- **Public Fiscal Management System (PFMS):** Only 19 economies have adopted specific budgeting, etc.
- **Lack of transparency:** Online publication of contract amendments was only carried out in 22 per cent of cases
- **Monitoring and Evaluation:** Only 37% of the economies require payments linked to performance.

Need of PPPs in India

- **Infrastructure Gaps**: India has major infrastructure deficits in transportation, energy, and urban development.
- **Resource Mobilization:** PPPs help **combine public and private financing.**
- **Efficiency and Innovation**
- **Risk Sharing**: PPPs distribute risks between public and private entities
- **Meeting SDGs:** SDGs directly linked to **social and economic infrastructure sectors**
- **Focus on Service delivery: Eg.** The redevelopment of railway stations, like Rani Kamlapati Station in Bhopal,

About PPP and Various PPP Models in India

PPP is collaboration between governments and private companies **to provide public services or infrastructure. Private Investment Unit** in the **Department of Economic Affairs** is responsible for policy-level matters concerning PPPs.

Various PPP Models in India

- **Build Operate Transfer (BOT)**
- **Build Own Operate (BOO)**
- **BOT-Annuity: Performance payments,** granting authority pays the **concessionaire annuities on scheduled dates** throughout the concession period.
- **Operations & Maintenance (Service Contract)**
- **Engineering Procurement and Construction (EPC):** The private entity **manages EPC, has no role in project management** and funded by government.
- **Hybrid Annuity Model (HAM):** It **combines EPC (40 per cent) and BOT-Annuity (60 percent).** The government funds 40% of the project cost, while private developer secures the remaining 60%, often investing only 20-25% of the total cost, with the rest financed through debt.

What are the challenges faced by PPPs in India?

- **Regulatory Issues**: According MoSPI, **Rs 5.01 lakh crore** projects overrunning due to **land acquisition issues, environmental clearance delays** etc. (In March 2024)
- **Financing Constraints**: National Infrastructure Plan requires INR 111 lakh crores over the next five years.
- **Long-Term Contract Issues**: Private sector loses negotiating power due to economic or policy changes.
- **Lack of Dispute Resolution Mechanisms**
- **Involvement of State-Owned Entities** discourages their involvement in PPPs.

Government Steps to Boost PPP

- National Monetization Pipeline, Viability Gap Funding, Infrastructure Project Development Fund, Foreign Direct Investment (FDI): 100% in PPP sector SPVs (automatic) for most sectors etc.

Way Forward to Improve PPP in India (According to Vijay Kelkar committee)

- **Service delivery Focus:** Prioritize service delivery over fiscal benefits.
- **Risk Management:** Use advanced modeling.
- **Expert Mechanisms:** Set up PPP Review Committee, Tribunal.
- **Legal Reforms:** Amend laws, create PPP Institute.
- **Independent Regulation:** Strengthen sectoral regulators.z

3.21. MOST-FAVOURED-NATION CLAUSE

Why in the News?

Starting **January 1, 2025**, **Switzerland** has suspended the **Most-Favoured-Nation (MFN)** clause in the **Double Taxation Avoidance Agreement (DTAA) with India.**

About Double Taxation Avoidance Agreement (DTAA)

- **About DTAA:** A treaty between **two or more countries** which ensures taxpayers (individuals or businesses) are not taxed on the same income in Residence and Source country.
- **How DTAA Works? Residence Country vs. Source Country**
  - **Residence Country**: This is the country where the taxpayer **lives or is based** (home country).
  - **Source Country**: This is the country where the **income is earned** (foreign country).

MFN Clause in Double Taxation Avoidance Agreement (DTAA)

- **Definition:** The MFN clause within DTAA is a provision in tax treaties that ensures a country grants the same or better tax benefits to the other country as it provides to any of its other "most favored" treaty partners.
- **MFN Principle is also found within WTO Framework.**
  - **The DTAA MFN clause ensures equal tax benefits between treaty partners**, while the WTO MFN principle mandates equal trade treatment by extending any trade advantage granted to one WTO member to all others.
  - **WTO's MFN Principle**: Codified in **General Agreement on Tariffs and Trade (GATT), General Agreement on Trade in Services (GATS), Trade-Related Aspects of Intellectual Property Rights (TRIPS).**

Significance of DTAA in Global Tax Governance

- **Legal Certainty:** Provides clear tax guidelines, aiding financial planning (e.g., India-Japan **Mutual Agreement Procedures (MAP)** for transfer pricing).
- **Prevents Fiscal Evasion:** Includes anti-abuse clauses (e.g., India-Mauritius DTAA).
- **Tax Savings:** Enables lower tax rates.
- **Tax Refunds:** Reduces double taxation burden.
- **Reduced TDS:** Lowers tax on dividends.

Challenges in DTAA Architecture

- **Treaty Shopping and Abuse: Example:** Mauritius **used by foreign investors** to route funds into India
- **Interpretation and Implementation Issues**
- **Lack of Harmonization with Domestic Laws: Example:** The recent 2023 Nestle issue between India-Switzerland.
- **Inadequate Dispute Resolution Mechanisms**: Delays and inefficiencies in resolving disputes under the MAP.

Conclusion

Switzerland's suspension of the MFN clause in the India-Switzerland DTAA reflects evolving global tax norms, emphasizing the need for clear treaty interpretations, compliance with domestic laws, and alignment with international tax standards.

3.21.1 Investment Facilitation for Development Agreement (IFDA)

Why in the News?

India and South Africa opposed the China-led IFDA proposal at the World Trade Organization (WTO).

About IFDA

Genesis: Proposed in 2017 by China and other developing and least-developed (LDCs) WTO members.

Objective: Legally binding provisions to boost FDI for sustainable development in developing economies and LDCs.

Plurilateral Agreement: Binding only for accepting members, open to all WTO members (per Annex 4, WTO Rule Book).

MFN Principle: Ensures equal tariff/regulatory treatment for all members' "like products" in imports/exports.

Reasons for India's Opposition to IFDA

- **Jurisdictional and Structural Issues:** India maintains that Investment is not a trade issue
- **Opposition to Plurilateralism:** India views the plurilateral approach as a threat to WTO's multilateral foundation
- **Chinese Leadership Issues:** Potential risks in formalizing such investment frameworks.
- **Sovereignty Concerns:** foreign corporate lobbying, prioritize foreign investors over domestic interests.

3.22. MBRIDGE PROJECT

Why in the News?

As per Bank for International Settlements (BIS), Project mBridge reached the minimum viable product (MVP) stage in mid-2024.

About Project mBridge

- **Launched in 2021**
- mBridge is a **cross-border, decentralised, multiple central bank digital currency (mCBDC)** platform.
- A platform based on a new blockchain **'the mBridge Ledger'** was also built to support real-time, peer-to-peer, cross-border payments and foreign exchange transactions.
- **Participants:** Initially led by the **BIS Innovation Hub,** in collaboration with the other **four central banks** of China, Thailand, the United Arab Emirates (UAE) and Hong Kong.
  - Saudi Central Bank joined in 2024. There are more than **31 observing members** including **RBI.**

Advantages of Cross-Border Digital Currency: Monetary Sovereignty, Preventing Monopoly, Security and Transparency (Blockchain, AI), Efficiency and Speed, Benefits to Developing Countries (Financial Inclusion, Digital Safety Net), Lower Transaction Cost, Preventing Digital Dollarization.

Significance of mCBDC:

- **Lower Transaction Cost, Increased Efficiency and Transaction Speed.**
- **Enhanced Security and Transparency** through the use of Blockchain technology, AI.
- **Monetary Sovereignty, credibility**, and trust among countries.
- **Preventing Monopoly and Digital Dollarization** (replacement of other currencies by more influent one) etc.

Challenges associated with mCBDC

- **Global Acceptance and credibility** as BIS have announced backing out
- **Regulatory Uncertainty** due to lack of a **coherent regulatory framework** across jurisdictions.
- **Volatility and Macroeconomic Stability** associated with digital currencies.
- **Security Concerns** regarding data breaches, Illegal uses such as money laundering, tax evasion etc.
- **Risks of creating Parallel and unregulated structures** of transactions.

Conclusion

mBridge represents a potential shift toward a more **multipolar global financial system**, where digital currencies backed by **local economies** can play a much larger role in international trade.

3.23. RAILWAYS REFORMS

Why in the News?

Recently, the **Railways (Amendment) Bill, 2024**, has been passed in the Lok Sabha and **Parliamentary Standing Committee on Railways** released **report on Railway Modernization and Financial Sustainability.**

About Railways (Amendment) Bill, 2024

- **Simplified Legal Framework**
  - Repeals the **Indian Railway Board Act, 1905** and incorporates its provisions into the **Railways Act, 1989**.
  - Aims to avoid referencing two separate laws for railway administration.
- **Additional Power to Central Government on Constitution of Railway Board:** Central government will prescribe:
  - the number of members of the Board,
  - the qualifications, experience, terms and conditions of service, and
  - manner of appointment for the Chairman and members of the Board.

The Railways (Amendment) Bill **simplifies** legal structures but retains the centralized framework, leaving many operational and financial challenges unaddressed. The recent Parliamentary Standing committee has also highlighted the need for Structural reforms crucial for improving efficiency, competitiveness, and service quality.

Key Recommendation of Parliamentary Standing Committee

Parameters	Recommendations
Financial	Make a **comprehensive review of passenger fares** in different trains and classes. → **Most of the earnings** of Indian Railways comes from its **freight services.** **Boost non-fare revenue to 20% by 2030** through advertising and commercial development.
Operational	Creation and Expedition of new **Dedicated Freight Corridors** to increase speed, freight loading and earnings.
Infrastructure and modernisation	**Investment:** Boost **private sector involvement** **Land acquisition:** Consider policy changes to speed up land acquisition **RoBs and RuBs:** The Committee commends the new policy allowing Railways to **fully fund stalled projects** due to state inaction on cost-sharing, ensuring timely completion of pending works.
Research	**Increase** scope of **Research & Development** to ensure **modernisation and assimilation of latest technologies**
Safety	Ensure **faster penetration of Kavach**
Green Railways	Incorporate **'Green Budgeting' (aligning public budgets with climate and environmental objectives**) methodologies in financial allocations. → Indian Railways have set a target of making themselves **Net Zero Carbon Emitter by 2030**

Conclusion

Amrit Bharat Station Scheme (2022) for development of railway stations and **National Rail Plan (2020)** to improve efficiency of freight transportation are steps in positive direction.

3.24. TOURISM SECTOR IN INDIA

Why in the News?

Recently, Union Ministry of Tourism has approved **40 Projects worth ₹ 3295.76 Crore** for development of lesser-known Tourism sites in 23 States.

Data: Status of Tourism Sector in India: 39th India's rank in Travel and Tourism Development Index 2024 published by World Economic Forum; 18.89 million International Tourist Arrivals in India during 2023.

More on the News

- Aim: **To ease pressure on high-traffic sites**, promote **balanced tourist distribution**, enhance experiences, boost local economies, and ensure sustainable tourism growth by **enhancing tourism infrastructure.**
- Aligned with the Ministry of Tourism's guidelines for **Development of Iconic Tourist Centres to Global Scale** for developing Iconic Tourist Centres under **Special Assistance to States/Union Territories for Capital Investment** (SASCI) Scheme of Department of Expenditure, Union Ministry of Finance.
  - **SASCI Scheme,** provides **50-year interest-free loans to state governments for capital projects**, including developing iconic tourist centers and promoting them globally.

Significance of Tourism for India

- **Cultural:** Revival of dying art, Heritage conservation. E.g., 'Adopt a Heritage' scheme, Fosters national integration. E.g. 'Dekho Apna Desh' campaign.
- **Economic**: Tourism sector contributed ~6.8% of India's GDP in 2024.
- **Diplomatic**: Incredible India campaign to showcase India's rich culture. E.g., Yoga and Ayurveda destination.

Challenges in Tourism Sector

- **Infrastructure bottlenecks**
- **Safety and security concerns: especially Female.**
- **Environmental degradation, lack of waste disposal systems. E.g.** Manali suffering from littering.
- **Seasonality of tourism:** overcrowding, lack of services, and sub-optimal utilization of facilities. **E.g., Char Dham Pilgrimage in Uttarakhand.**
- **Post-Pandemic Recovery Issues**: According to the **UN Tourism Barometer**, Asia and the Pacific reached only 85% of 2019 levels in international arrivals from January to September 2024.

Initiatives to promote Tourism in India

- **Infrastructure development: Swadesh Darshan 2.0, PRASHAD Scheme, RCS-UDAN**
- **Policy and legal framework: National Tourism Policy, E-Visa facility**
- **Niche tourism: medical and wellness tourism, Eco-tourism, Adventure Tourism**
- **Capacity building and training: Hunar Se Rozgar Tak,** launch of an online programme for **Linguistic Tourist Facilitators**, etc.
- **Campaigns: Incredible India Campaign, Bharat Parv 2024, Travel for LiFE** for sustainable tourism, etc.
- **PPP: Adopt a Heritage Scheme, Luxury Trains etc.**

Way Forward

- **Connectivity & Accessibility**: Improve walkability, cycling, and tourist amenities for better last-mile connectivity.
- **Niche Tourism:** Promote farm stays, cultural tourism, and wellness clusters; support film industry clearances.
- **Sustainable Tourism**: Implement zoning, environmental audits, and SDG-aligned monitoring.
- **Leveraging Technology:** Use AI, AR, IoT, and Big Data for personalized travel and efficient tourism management.

3.25. URBAN CHALLENGE FUND (UCF)

Why in the News?

Budget 2025-26 announced the creation of **Urban Challenge Fund (UCF).**

What is the Urban Challenge Fund (UCF)?

- UCF of Rs 1 lakh crore aims to encourage states to think innovatively towards attaining sustainable urbanization
  - Fund is to implement: **Cities as Growth Hubs, Creative Redevelopment** and **Water & Sanitation.**
- **Financing Mechanism:** Fund will finance up to **25% of the cost of bankable projects** with a stipulation that at least **50% of the cost is funded from bonds, bank loans, and PPPs. Rs. 10,000 crore** proposed for 2025-26.

What is the need for the UCF?

- **Cater to rising Urban Population:** Urban population increased from **27.7% in 2001 to 31.1%**(Census 2011).
- **Ensure Sustainability:** Cities in India face the risk of looming water crisis, disasters like earthquakes, etc.
- **Support Developmental Projects:** Focus on **integrated development**.
- **Ensure absorption of the available funds; Address Deficit of Human Resources**
- **Address issues with Urban Planning:** Land parcels of high urban densities are sub-optimally utilized.

Urbanisation in India

- **Characteristics of Urbanisation in India**
  - **Poverty Driven: Driven** by economic distress, with both **rural-to-urban** and **urban-to-urban migration.**
  - **Slow Progress:** due to slow process of reclassification and obsolete definition.
  - **Spatial Variations:** varies **significantly across the States and UTs.**
  - **Paradox of exclusion:** growing influx, proliferation of slums, overburdening public services.

What more can be done to improve the situation of urban areas in India?

- **Re-engineering and Strengthening of Urban Governance Structures: 2nd Administrative Reform Commission (ARC)** suggesting **clear division of roles and responsibilities** among various authorities.
- **City Master Plan:** About **52% of statutory towns in India** lack any kind of master plan. (NITI Ayog, 2020)
- **Town Planning Professionals:** An **All India Urban Planning Service**
- **Integrated Capacity Building Programme; Reviewing existing legislations; Involvement of Citizens**
- **Strengthen the role of Private Sector.**

Measures taken for reforming Urban Areas

- **India:**Swachh Bharat Mission, Smart Cities Mission, National Urban Livelihood Mission (NULM), Pradhan Mantri Awas Yojana (Urban) (PMAY-U), Atal Mission for Rejuvenation and Urban Transformation (AMRUT).
- **Global:** Sustainable Development Goal-11, United Nations Human Settlements Programme (UN-Habitat)

3.26. INSURANCE SECTOR IN INDIA

Why in the News?

The **Standing Committee on Finance** recently tabled an action taken **report** in the Parliament on observations and recommendations on the subject **'Performance Review and Regulation of Insurance Sector.**

Data Point: 10th largest Insurance sector globally; 4.2% insurance penetration in India in 2021. (Global average: 7%)

Key Observations by the Committee

- **Government Policies:** 18% GST and Tax Deducted at Source hinder insurance penetration; IRDAI recommends tax exemptions like Canada and the EU.
- **Public Sector Insurance Companies:** They face challenges of **inadequate capital, lack of level playing field** with private companies, **overexposure to health insurance** and lagging insolvency ratios (~₹ 26,000 crore financial losses

- **Increased private sector participation:** Market share in general and health insurance rose from 48.03% (FY20) to 62.5% (FY23).
- **Missing Middle in Health Insurance**: A large portion of the population lacks adequate coverage.
- **Microinsurance:** Hindered by high costs, low awareness, and unviable business models.
- **Disaster Coverage:** India ranks 3rd globally for natural disasters, necessitating increased coverage.
- **Claim Issues:** Discount-driven competition leads to repudiation/delay in large claims.

Micro insurance

- **Micro insurance** is specifically intended for the protection of **low -income people, with affordable insurance products** to help them cope with and recover from financial losses. **(sum not exceed Rs 200000)**
- **Challenges: high transaction** and **service delivery costs, absence of a business model, lack of basic awareness and knowledge** etc.
- **Current micro-insurance products** include **PM Suraksha Bima Yojana, PM Jeevan Jyoti Bima Yojana, Pradhan Mantri Fasal Bima Yojana, Ayushman Bharat Pradhan Mantri Jan Arogya Yojana, etc.**

Reforms in Indian Insurance Sector: Technological Innovations: YES-TECH (Yield Estimation System Based on Technology), WINDS (weather Information Network and Data System); **Privatization Efforts**: General Insurance Business (Nationalization) Amendment Bill, 2021; **Grievance Resolution Systems**: Insurance Ombudsman etc.

Key Recommendations of the Committee

- **Promote Microinsurance:** amend the **Insurance Act, 1938 to remove Rs. 100 crore fixed capital** limit.
- **Composite Licensing:** offer **both life and non-life insurance products** under one entity.
- **Parametric Insurance in disaster-prone areas: for vulnerable areas** and **economically weaker sections.**
- **Filling the Health Insurance gap:** Constituting a **multi-stakeholder Inter-Ministerial Working Group.**
- **Reduce GST for health insurance and microinsurance products.**
- **Level Playing Field for Public Sector Companies**
- **Unclaimed Policies: Central Portal** for unclaimed policies in line with **UDGAM (Unclaimed Deposits: Gateway to Access information) of RBI**.

3.26.1 FDI Limit Hiked In Insurance Sector

Why in the News?

Finance Minister announced proposal to **raise FDI limit in Insurance sector from 74% to 100%.**

More on the News

- This enhanced limit will be available for those companies which **invest entire premium in India.**
- To enhance FDI limit, government will have to bring **amendments to Insurance Act 1938, Life Insurance Corporation Act 1956,** and **Insurance Regulatory and Development Authority Act, 1999.**

Significance of 100% FDI in insurance sector

- **Higher Investment**: More foreign capital for growth and expansion.
- **Enhanced Competition**: Better products, improved services, and competitive pricing.
- **Technological Advancements**: Adoption of advanced tech and innovative products.
- **Improved Penetration:** More people to achieve the target of 'Insurance for All' by 2047.

Status of India's Insurance sector (Economic Survey 2024-25)

- **Total insurance premium grew** 7.7% in FY24, reaching Rs.11.2 lakh crore.
- **Insurance penetration declined** from 4% in FY23 to **3.7% in FY24.**
- **Insurance Density rose** from USD 92 in FY23 to **USD 95 in FY24**.
  - **Insurance penetration** is measured as percentage of **insurance premium to GDP** whereas **insurance density** is calculated as **ratio of premium to population** (per capita premium).

Challenges Faced by Insurance Sector in India

- **Absence of top companies, Economic Constraints like affordability, Cultural Preferences.**

3.27. 'CASHLESS TREATMENT' SCHEME FOR ROAD ACCIDENT VICTIMS

Why in the news?

Union Minister for Road Transport and Highways launch **"Cashless Treatment"** scheme for road accident victims.

Key Provisions of the Scheme

- **Financial Coverage**: Government will cover **treatment costs of up to ₹1.5 lakh for seven days**, provided **the police are informed within 24 hours.**
  - Claims raised by hospitals for providing treatment to be reimbursed from the **Motor Vehicle Accident Fund.**
  - Victims can opt for treatment under **Ayushman Bharat PM-JAY packages** for trauma and polytrauma.
- **Eligibility:** Applicable to all road accidents involving motor vehicles on any type of road.
- **Implementation**: National Health Authority (NHA) with help of e-Detailed Accident Report (eDAR) application.
- **Ex-Gratia Payment**: **₹2 lakh compensation** for families of deceased **victims in hit-and-run cases**.
- **Legal mandate: under Section 162 of the Motor Vehicles Act, 1988**.

Need for the Scheme

- **High Road Accident Fatalities**: WHO's Global Status Report on Road Safety 2023, India recorded a 15% rise in fatalities between 2010 and 2021, in contrast to the 5% global decline. In 2024 alone 1.8 lakh deaths.
- **Golden Hour Treatment:** Ensuring immediate medical attention can save thousands of lives.
- **Financial Burden on Victims:** High treatment costs often prevent timely medical intervention.
- **Enhanced Emergency Response:** The scheme integrates technology.
- **Government Commitment:** Aligns with **India's broader goal of** reducing road fatalities by 50% by 2030 under **the UN's Decade of Action for Road Safety (Developed by: WHO** and **UN Regional Commissions,** Supports the **Stockholm Declaration** and the **Safe System approach**).

Challenges to Road Safety in India

- **High Fatality Rate and Injury Burden.**
- **Over-Speeding and Reckless Driving:** Over-speeding is the **leading cause of road fatalities.**
- **Lack of Traffic Law Enforcement.**
- **Inadequate Public Transport and Growing Vehicle Population.**
- **Defective Vehicles & Lack of Safety Features.**
- **Weak Post-Crash Response and Emergency Care**: 50% of victims die due to delayed medical assistance.

Key Measures Taken by India to Improve Road Safety

- Amendments to Motor Vehicles Act (2019): Stricter penalties for violations, etc.; Identification & Rectification of Black Spots; National Road Safety Policy (2010). Etc.

Recommendation

Safe System Approach of Global Plan for Road Safety (2021-2030) recognizes **that human error is inevitable but aims to ensure that road crashes do not result in fatalities**. The key components include:

- **Multimodal Transport & Land-Use Planning:** Encouraging **public transport, cycling, etc.**
- **Safe Road Infrastructure:** Designing roads with **safety features** like pedestrian crossings, speed limits, etc.
- **Safe Vehicles:** Mandating **advanced safety features** in all vehicles, including **electronic stability control etc.**
- **Safe Road Use:** Strengthening **traffic laws, speed management**, and **awareness campaigns**.
- **Post-Crash Response:** Improving **emergency medical services, trauma care, and rehabilitation**.

3.28. NEWS IN SHORTS

3.28.1 Gross Domestic Knowledge Product

Ministry of Statistics and Programme Implementation (MoSPI) organised a session on "**Conceptual Framework of Gross Domestic Knowledge Product (GDKP) Measurement**".

- **GDKP** captures the contributions of **knowledge-driven sectors, innovation, and intellectual assets to India's economic growth.** It evaluates the impact of knowledge on economic and social life in the country.
- **MoSPI** will form technical committee to evaluate proposal and provide guidance on measuring knowledge economy.

Need of GDKP

- **Enhancing Economic Metrics; Supplementing the GDP measure; Sync with global standards adopted by** advanced economies; **Guiding Policy Innovation for Key Sectors.**
- **Challenges with Implementing GDKP:** Data collection, Conceptual, economic constraints.

3.28.2 Global Wage Report released by International Labour Organization (ILO)

Key Findings

- **Trends in wage growth**
  - **Global:** After falling in 2022, **global real wage growth recovered in 2023.**
  - **Regional:** Average **wages are increasing faster in Asia and the Pacific, Central and Western Asia, and Eastern Europe**.
- **Trends in labour income inequality**
  - **Wage inequality: Declined, however,** it is **highest** in **low-income countries** and **lowest** in **high-income countries.**
  - **Informal Economy**: Women and workers are overrepresented, **informal employment has increased.**
- **Labour Productivity (1999-2024)**: It has increased more rapidly in high-income countries than real wages.

Way forward

- **Increased research** for measuring and estimating change in inequality
- **National strategies** to reduce wage inequality
- **Redistribution of Income** through system of taxes and social transfers

3.28.3 India Secures 14.3% of Global Remittances: World Bank

According to the World Bank, **India secured 14.3% of Global Remittances in 2024, highest share ever.**

- Remittances are **financial transfers made by individuals working abroad** to their families in home country.

Trend in Remittances flow

- **Top five recipients in 2024:** India at $129 billion (Compared to $125 billion in 2023), Mexico, China, etc.
- **Low- and Middle-Income Countries** are projected to surge to **$685 billion in 2024**, with **5.8% growth rate**.
- **China's** share of global remittances **dropped to 5.3% in 2024, its lowest share in two decades.**

Factors responsible for High Remittances in India

- **Scale of Migration:** 18 million Indians living abroad as of 2023 (UN World Migration Report 2024).
- **Shift in Destination Trends:** Indian migrants are moving to high-income economies like US, UK, and Australia.
- **Skilled and Unskilled Labor**

Significance of High Remittances

- **For Recipient Households:** used for essential expenses like food, healthcare, and education,etc.
- **For Macro-economy:** foreign exchange, funding current account deficits and fiscal shortfalls etc.

3.28.4 India Remains the Fastest-Growing Economy: World Bank

World Bank's **Global Economic Prospects Report** gives overview of Global Economy for 1st quarter of 21st Century.

Key Highlights

- **Rising influence of EMDEs:** Emerging Market and Developing Economies (EMDEs), led by the **EM3 nations** (China, India, and Brazil), **have significantly increased their share** from 2000 to 2025.
- **India's Growth Leadership:** India being **fastest-growing economy, projected 6.7% annual growth**.

Factors reflecting robustness of Indian Economy

- **Strong Sectoral Performance:**
  - **Services:** The services sector is set for **sustained expansion**, with rising service exports.
  - **Manufacturing:** Manufacturing is **strengthened** to grow, driven by government initiatives.
- **Solid Economic Foundation**

- **Fiscal Health:** Shrinking fiscal deficits and increasing tax revenues.
- **Investment Outlook:** Investment growth is expected to be **steady**, with **rising private investment**, etc.
- **Consumption outlook: Private consumption** growth to boost due to **strengthening labor market, expanding credit, and declining inflation**. **Government consumption** growth is to **remain contained**.

- **Challenges:** Rising protectionism, geopolitical tensions, mounting debt burdens, and climate change-related costs.
- **Success** requires policies on boosting investment, productivity, and macroeconomic stability.

3.28.5 World Bank Released Annual International Debt Report (IDR) 2024

The IDR features external debt statistics and analysis for low- and middle-income countries (LMICs) that report to the **World Bank's Debtor Reporting System (DRS).**

Key highlights

- **Rising External Debt:** Total external debt of LMICs rose by 2.4% in 2023, **reaching $8.8 trillion**.
- **Factors Driving Indebtedness**
  - **High Interest Rates:** Tight monetary policies in high-income countries pushed interest rates.
  - **Other Factors:** Inflation, depreciating currencies, and global economic uncertainty etc.
- **Impact of rising debt:** health, education, and environmental funding.

Way Ahead

- **Global Financial Reforms** to prevent a widespread debt crisis
- **Mitigating Predatory Lending**
- **Crisis Resilience:** Implement climate-resilient debt clauses and standstill rules to pause repayments during crises
- **Improved Restructuring Mechanisms:** Establish **automatic restructuring rules** and a **Global Debt Authority** to guide and coordinate sovereign debt management.

3.28.6 Tax Justice Network Released 'State of Tax Justice 2024' Report

Key Observations of Report

- Countries are losing **US$492 billion a year** to global tax abuse.
  - **Two-third (US$347.6 billion) is lost to multinational corporations shifting profit offshore** to underpay tax.
  - Remaining one-third (US$144.8 billion) is lost to **wealthy individuals hiding their wealth offshore**.
- **Nearly half the losses (43%)** are enabled by the eight countries (all OECD members) that remain opposed to a UN tax convention: Australia, Canada, Israel, Japan, New Zealand, South Korea, UK and US.
- Countries of **Global North lose largest amount of tax revenues** in absolute terms while countries of **Global South endure the deepest losses as a share of their tax revenues**.

Policy recommendations

- Adopt a **UN tax convention**, **Having excess profits and wealth taxes**
- **Global Tax Reforms: OECD's Global Minimum Tax (GMT), Base Erosion and Profit Shifting etc.**

3.28.7 Algorithmic Trading

SEBI proposed **Retail Algo Trading Framework.**

- Algo trading **automates buy/sell orders** using preset conditions for precise execution.
- Erstwhile, only **institutional investors** were allowed to use it **via Direct Market Access (DMA).**

Key highlights of Regulatory Framework

- **Categorization of Algorithms**
  - **White-box:** Logic is disclosed and replicable i.e. Execution Algos
  - **Black-box:** Algos where the **logic is not known to the user** and is not replicable
- **Trading Limits for Retail Traders**: Retail traders must follow exchange-set limits (yet to be decided).
- **Registration of Algo Providers**: Algo providers are not regulated by SEBI, but must **register with exchanges and partner with a broker** to sell algos.

3.28.8 SFBs to extend Credit Line through UPI

Reserve Bank of India (RBI) has recently decided to permit **Small Finance Banks** (SFBs) to **extend pre-sanctioned credit lines through Unified Payment Interface (UPI)**.

Credit Line through UPI by SFBs

- Under this facility, **payments through a pre-sanctioned credit line** issued by a Bank to individuals, with prior consent of the individual customer, **are enabled for transactions using UPI System**.
- **Significance:** Aims to deepen **financial inclusion** and **enhance formal credit**, particularly for **'new to credit' customers**.

About SFBs

- **Objective:** To further financial inclusion by **provision of savings** vehicles, **supply of credit**
- **Registration:** As a **public limited company** under **Companies Act, 2013;**
- **Regulated by:** RBI.

- **Applicability of CRR and SLR:** Similar to CRR and SLR requirements for Scheduled Commercial Banks (SCBs).;
- **Capital requirement:** Minimum paid-up voting equity capital of **₹200 crore** (except for such SFBs which are converted from Urban Cooperative Banks).
- **Priority Sector Lending (PSL) norms:** Required to extend **75% of its Adjusted Net Bank Credit** (ANBC) to the priority sectors.

3.28.9 Deposit Insurance

Government is considering increasing the bank deposit insurance cover above current limit of ₹ 5 lakh.

About Deposit Insurance and Credit Guarantee Corporation (DICGC)

- Established on **January 01, 1962** under the DICGC Act, 1961.
- It is a **wholly owned subsidiary** of the **Reserve Bank of India**. **Head Office:** Mumbai

About Deposit insurance

- **Background:** Deposit insurance was introduced in India in **1962** under the **DICGC Act, 1961.**
- **Coverage:** The insurance **protection extends to ₹ 5 lakh per depositor**. However, if the **deposits are held with more than one bank**, deposit insurance coverage **limit is applied separately to the deposits.**
- **Covered Banks**: Deposit insurance scheme is **compulsory and no bank can withdraw from it**.
  - **Exceptions:** Land development banks, Non-Banking Financial Company's (NBFCs) etc.
- **Insures:** Savings, fixed, current, and recurring deposits are insured**. Exceptions**: Does not provide insurance for **deposits by foreign, central, and state governments**, and for **inter-bank deposits**.
- It insures both the **principal and interest amount** held by a depositor in a bank.
- Through amendment in **2021**, **Section 18A amendment to the DICGC Act** allowed depositors to receive time-bound (within 90 days) interim payments up to the insured amount when the RBI imposes restrictions on banks.
- Deposit insurance **premium is borne entirely by the insured bank**.

3.28.10 RBI Increases Limit for Collateral-Free Agricultural Loan

The move aims to provide **enhanced financial access to farmers** without the burden of providing collateral.

Key directives to banks include

- From **₹1.6 lakh per borrower to ₹2 lakh**.
- **Timely implementation** (from January 01, 2025).
- **Awareness campaigns**.

Significance of the Enhanced Limit

- **Enhanced Credit Accessibility: For** small and marginal farmers (over 86% of the sector).
- **Simplify Loan Disbursement**
- **Promotion of Financial Inclusion**

Other Initiatives: Primary Agricultural Credit Societies (PACS), Kisan Credit Card (KCC), Modified Interest Subvention Scheme

Key issues in disbursement of Agricultural Credit: Skewed focus on short-term crop loans, rising fiscal burden due to loan waivers, over-reliance on non-institutional credit, etc.

3.28.11 Regulation of Payment Systems in India

Reserve Bank of India (RBI) released 'Payment System Report, December 2024'.

- It is a **bi-annual report** which analyses the **trends in payment transactions** carried out **using different payment systems** in the **last 5 calendar years** (CY) up to CY-2024.

Key findings

- **Digital payment transactions:** Since 2013 **increased 94 times in volume and more than 3.5 times in value** in CY-2024.
- **Unified Payment Interface (UPI):** Volume of UPI transactions reflects a CAGR of 74.03 %, value of the transactions represented a CAGR of 68.14% in last 5 years.
- **Credit cards & Debit cards: Number of credit cards has more than doubled in five years** whereas debit cards have remained relatively stable in last 5 years.
- **Global trends: India joined Project Nexus**, facilitating multilateral linkage of fast payment systems (FPS) of four ASEAN Nations (Malaysia, Philippines, Singapore and Thailand) and India.
  - **Project Nexus**, conceptualized by **Bank for International Settlements** (BIS), **enables instant cross-border retail payments** by interlinking domestic FPSs.

3.28.12 BAANKNET (Bank Asset Auction Network)

Ministry of Finance launched a revamped e-auction portal **'BAANKNET'**.

About BAANKNET

- It **consolidates information on e-auction properties from all Public Sector Banks** and offers a **one-stop destination for buyers and investors** to discover a wide range of assets.
- Includes residential **flats, plots, commercial properties, industrial land and buildings, shops, etc.**

- The platform is expected to **unlock the value of distressed assets** and boosting investor confidence.

3.28.13 Digital Payments Index (DPI)

Recently, **RBI published** the **Reserve Bank of India–Digital Payments Index** (RBI-DPI).

About RBI-DPI

- Objective: **capture extent of digitisation of payments systems** & measure **adoption of online transactions**
- **Released frequency:** Semi-annual (March & September).
- **Base Period:** March 2018.

Parameters involved: Payment Enablers; Payment Infrastructure (demand-side factors); Payment Infrastructure (supply-side factors); Payment Performance and Consumer Centricity.

3.28.14 Prepaid Payment Instruments (PPI)

RBI has allowed **Prepaid Payment Instruments (PPIs)** holders to make and receive **Unified Payments Interface (UPI) payments** through **third-party mobile applications.**

About PPI

- PPIs are instruments that facilitate the **purchase of goods and services**, conduct of financial services, enable remittance facilities, etc., against the value stored therein. E.g. Mobile wallets, digital wallets, gift cards.
- PPIs can be **issued by banks and non-banks.**
  - Classified under two types: **small PPIs** (issued after obtaining minimum details) **and Full KYC PPIs.**

3.28.15 Credit Guarantee Scheme for e-NWR based Pledge Financing (CGS-NPF) Launched

It allows farmers to **avail loans** against **electronic Negotiable Warehouse Receipts (e-NWRs)** after depositing their commodities in **Warehousing Development and Regulatory Authority (WDRA, HQ New Delhi)** accredited warehouses.

About e-NWRs

- It is a **digital version, mandatory** of the traditional warehouse receipt, governed by the **Warehousing (Development and Regulation) Act of 2007.**
- It allows goods deposited in a registered warehouse to be transferred or sold through endorsement.

Key Features of the Scheme

- **Ministry:** Ministry of Consumer Affairs, Food & Public Distribution
- **Total Corpus: Rs 1,000-crore** for post-harvest finance
- **Coverage:** Loans up to Rs. 75 lakhs for agricultural purpose and up to Rs. 200 Lakhs for non-agricultural purpose.
- **Eligible Institutions**: All scheduled banks and cooperative banks.
- **Eligible Borrowers**: Small and marginal farmers, women, SC/ST/PwD farmers, MSMEs, traders, FPOs, and farmer cooperatives.
- **Risks Covered**: Credit and warehouseman risks;
- **Guarantee coverage**: 85% for loans up to Rs. 3 lakh and 80% for loan between 3 to 75 lakhs for small and marginal farmers/women/SC/ST/PwD. 75% for other.

Significance of the Scheme: Minimise distress selling by farmers, instill confidence in bankers, addressing the default arising out of both credit and warehouseman risk.

3.28.16 Atmanirbhar Clean Plant Programme (CPP)

Asian Development Bank (ADB) and India signed a $98 million loan agreement for developing regulatory framework and institutional systems to e□ectively implement the CPP for horticulture.

About CPP

- **Genesis**: Approved under the **Mission for Integrated Development of Horticulture (MIDH), Centrally Sponsored Scheme.**
- **Purpose**: Provide farmers access to virus-free, high-quality planting material, leading to increased crop yields.
- **Key Components**
  - 9 world class **state-of-the-art Clean Plant Centers (CPCs)** equipped with advanced diagnostic therapeutics and tissue culture labs.
  - **Certification Framework**, supported by a regulatory framework under the **Seeds Act 1966.**
  - Support for large-scale nurseries for the development of infrastructure.
- **Implementing Agencies**: Ministry of Agriculture and Farmers Welfare through the **National Horticulture Board (NHB)** and the **Indian Council of Agricultural Research**.
  - It will be **Implemented from** 2024-30 with 50% assistance from ADB.
- **Other Key Initiatives for Horticulture Sector:** Coordinated programme on Horticulture Assessment and Management using Geoinformatics (CHAMAN); Kisan Rail services; Capital Investment Subsidy Scheme by NHB.

3.28.17 New Harmonised System Codes For GI Tagged Rice

India reportedly introduces New Harmonised System (HS) Codes for GI Tagged Rice.

- Amendment to **Customs Tariff Act (1975** introduced to provide **HS code for GI-recognised rice varieties.**
- It will make it possible for **exports of GI-tagged rice without special notification** from the Ministry of Finance.

About HS

- **Definition:** HS is a **global product classification system developed by the World Customs Organization (WCO)**.
- **Classification Structure:** HS assigns specific **six-digit codes for varying classifications and commodities.**
  - **Countries are allowed to add longer codes** to the first six digits for further classification.
- **Governance and Updates:** HS is governed by "**The International Convention on the Harmonized Commodity Description and Coding System**".
  - **HS Committee**, made up of member countries, oversees the HS classification system and also updates **HS every 5 – 6 years**.
  - **Widespread adoption:** Classifies approximately **98% of international trade,** Encompasses over **5,000 commodity groups,** Implemented by **more than 200 countries**
- **Benefits of HS:Common coding method**; Reduces **international trade costs;** supports **economic research.**
- **About World Customs Organization (WCO):** Independent intergovernmental body whose mission is to enhance effectiveness and efficiency of Customs administrations. **186 members including India.**

3.28.18 Kisan Pehchan Patra

Centre has advised states to adopt a **'camp-mode approach'** to farmer registration.

About Kisan Pehchan Patra

- It is an **Aadhaar-linked unique digital identity** that is **linked dynamically to state's land records**, besides having information e.g. demographic, crops sown and ownership details.
- ID will form the **core** of the **'Farmers Registry'**.
  - Agri Stack is one of the components of the **Digital Agriculture Mission,** Other being Krishi Decision Support System
  - Agristack Consists of **3 databases: Farmers' Registry, Geo-referenced Village Maps, and Crop Sown Registry.**

3.28.19 Kisan Kavach

Scientists affiliated to the Department of Biotechnology (DBT) have developed an Indigenous '**anti-pesticide' suit** called Kisan Kavach.

About Kisan Kavach

- Developed by **BRIC-inStem, Bangalore**, it is designed to protect farmers from the harmful effects of pesticide exposure.
- The kit consists of a **trouser, pullover, and a face-cover** made of '**oxime fabric'**, which can **chemically breakdown any of the common pesticides.**

3.28.20 SMILE Program

India and Asian Development Bank (ADB) recently signed a $350 million policy-based loan under the second subprogram of **SMILE** (**Strengthening Multimodal and Integrated Logistics Ecosystem**) program.

About SMILE Program

- It is **a programmatic policy-based loan (PBL) by ADB** to support the government of India to undertake wide ranging **reforms in the logistics sector.**
- **Objective**
  - To **incentivizing private sector participation** in multimodal logistics projects (MMLPs)
  - To improve **efficiencies in external trade logistics** and encourage the **use of smart and automated systems** for improved service delivery.

3.28.21 Merchant Shipping Bill, 2024

Ministry of Ports, Shipping and Waterways introduced Merchant Shipping Bill, 2024 in Lok Sabha.

- Bill seeks to **repeal Merchant Shipping Act, 1958.**
- Bill aims to **consolidate and amend law relating to merchant shipping**.

Key Highlights of Bill

- **Establishment of National Shipping Board**
- **Maritime Administration:** Central Government appoint a person to be Director-General of Maritime Administration.
- **Registration of Vessels:** Ownership allowed by
  - **Citizen of India including Non-Resident Indian** or **an Overseas Citizen of India.**
  - **Company/ body established by any Central Act or State Act** having its registered office of business in India.
- **Transfer of Indian vessel or share:** No person shall transfer/acquire any Indian vessel at any time during which India's security or any part of territory is threatened by sanction, war or external aggression and proclamation of emergency.

- **Prevention and containment of pollution:** Every vessel shall comply with provisions of international conventions, as applicable, namely MARPOL Convention; Anti-Fouling Systems Convention; etc. to prevent pollution.

3.28.22 Coastal Shipping Bill, 2024 Passed in the Lok Sabha

Bill's purpose is to **consolidate and amend laws governing coastal shipping (Uniformity in regulation)**, promote coastal trade, connectivity and encourage domestic participation.

- Coastal shipping in India holds great potential owing to its vast **coastline (~ 7,500 km)** and proximity to **important global shipping routes.**

Key Highlights of Bill

- **Prohibition of coasting trade; National Coastal and Inland Shipping Strategic Plan; National Database of Coastal Shipping; Licensing of chartered vessels**
- **Other Provisions:** Provision for **compounding of certain offences and imposition of penalty by the principal officer**; and provision for empowering the Director-General to call for information in respect of certain matters.

3.28.23 'Jalvahak' Scheme to boost Inland Waterways

Union Government unveiled 'Jalvahak' Scheme which aims to encourage business enterprises with safe and timely delivery of cargo through inland waterways, in a cost-effective manner.

About the Jalvahak scheme

- **Ministry:** Union Ministry of Ports, Shipping & Waterways.
  - To be **jointly implemented by the Inland Waterways Authority of India** (IWAI) and **Inland & Coastal Shipping Ltd** (ICSL), a subsidiary of the Shipping Corporation of India.
- **Aim:** Schemes aim at Incentivizing Modal Shift of 800 million Tonnes KMs with an investment of ₹95.4 crores.
- **Time frame:** Valid for an initial period of 3 years.
- **Route:** Fixed Day Scheduled Sailing Service will ply vessels between **Kolkata – Patna – Varanasi – Patna – Kolkata stretches of National Waterways (NW)-1, between Kolkata and Pandu in Guwahati on NW 2,** and **NW 16 via Indo Bangladesh Protocol Route** (IBPR).
- **Incentive:** Offers **reimbursement upto 35% of total operating expenditure** incurred while transporting cargo.
- **Criteria**: Provides **direct incentive** to transport their **goods** via inland waterways for a distance of **more than 300 km.**
- **Significance:** Reduced logistics costs, decongestion of road and railways, and adapting to a sustainable mode of transportation.

3.28.24 Network Readiness Index (NRI) 2024

The 2024 edition of the Network Readiness Index (NRI) has officially launched.

- The theme of this year is **"Building a Digital Tomorrow: Public-Private Investments and Global Collaboration for Digital Readiness."**
- India climbed 11 ranks, securing the **49th position in NRI 2024.**
- **The report maps the network-based readiness landscape** of 133 economies based on their performances in four different pillars: **Technology, People, Governance, and Impact.**
- It is co-published by **Portulans Institute and Saïd Business School, University of Oxford.**

3.28.25 First Ever Auction of Minerals in Offshore Areas

Ministry of Mines Launched first ever tranche of auction of mineral blocks in offshore areas

- It is a major step forward in exploring India's extensive **offshore mineral resources** within **its Exclusive Economic Zone (EEZ).**

Key Details of the Offshore Mining Auction

- **Mineral Blocks:** Auction includes 13 mineral blocks spanning across the **Arabian Sea and Andaman Sea.**
- **Types of Mineral and corresponding Region:** Construction sand **(Off the coast of Kerala, Arabian Sea)**, lime-mud (**Off the coast of Gujarat, Arabian Sea)** and polymetallic nodules and crusts **(Off Great Nicobar Islands, Andaman Sea).**

Offshore Mining or Deep-Sea Mining

- It is the process of **retrieving mineral deposits from the deep seabed,** at a depth of more than 200 meters.
  - India's offshore mineral reserves **include gold, diamond, copper, nickel, cobalt, copper, manganese, and rare earth elements**
- **Step Taken for Offshore Mining**: National Geological Data Repository (NGDR) portal, Offshore Areas (Existence of Mineral Resources) Rules, 2024.

Significance of Offshore Mining for India

- **Increase availability of minerals, unlock India's blue economy, reduce** imports.
- **Infrastructure development, high-tech manufacturing and green energy transition.**

Challenges in Offshore Mining

- Lack of private participation, requirement of highly skilled labour and capital, environmental challenges like habitat destruction, disruption of marine ecosystems etc.

3.28.26 Revised Open Market Sale Scheme (Domestic) Policy for 2024-25

Ministry of Consumer Affairs, Food & Public Distribution announced policy to enhance food security & ethanol.

- **Rice Reserve Price** (₹2,250 per quintal) set for **sale to State Governments, Corporations, & Community Kitchens**, without e-auctions. Set reserve prices ₹2,250 per quintal (₹550 less) of rice to **ethanol distilleries.**

What is Open Market Sale Scheme (Domestic)

About: Under this scheme, **Food Corporation of India** (FCI) **sells surplus food grains** (wheat & rice) from the **central pool** in open market via **e-auction** at **pre-determined prices**.

- **Aim**: To **control market prices** and **curbs inflation**.
- **Eligibility:** Processors / Atta Chakki / Flour Millers of Wheat Products. (Traders / Bulk Buyers not allowed)
  - Usually, **states** are also **allowed to procure** food grains **without participating in auctions**.
- **About Food Corporation of India (FCI):** statutory body established under the Food Corporation's Act 1964; Ministry of Consumer Affairs, Food & Public Distribution; Objective: Ensure price support, efficient food grain distribution, buffer stock maintenance.

3.28.27 Project VISTAAR

IIT Madras has partnered with the Ministry of Agriculture and Farmers Welfare on Project VISTAAR (**Virtually Integrated System to Access Agricultural Resources**)

About VISTAAR

- It is a "Network" of Networks (AI-augmented) and every State can build their own Agri-Advisory network.
- It is a comprehensive network that connects **decentralized databases** to provide seamless access to vital agricultural resources.
- **Objective:** Enhance decision-making and resource utilization
- **Significance:** Expand access to **high-quality advisory services** on crop production, marketing, **value addition**, and supply chain management.; Provide farmers with information on **government schemes.**

3.28.28 Logistics Ease Across Different States (LEADS) 2024' Report Released

LEADS 2024 has been released by the **Ministry of Commerce and Industry.**

About LEADS

- **Objective**: Provides insights into improvement of logistics performance at State/UT level.
  - Conceived on the lines of **Logistics Performance Index** (LPI) of **World Bank** in 2018.
  - While the LPI relies entirely on perception-based surveys, LEADS incorporates both perception as well as **objectivity**.
- **Parameters**: Evaluates logistics performance across four key pillars: Sustainable Logistics, Logistic Infrastructure, Operating and Regulatory Environment, Logistic Services
- **Categories of State/UTs**: Four groups **Coastal**, **Landlocked**, **Northeast** and **Union Territories.**
- **Performance Highlights of 2024**
  - **Achievers:** Gujarat, Haryana, Assam, Chandigarh, etc.
  - **Fast movers**: Andhra Pradesh, Bihar, Himachal Pradesh etc.
  - **Aspirers**: Kerala, West Bengal, Manipur, Chhattisgarh, etc.

3.28.29 Entity Locker

National eGovernance Division, **Ministry of Electronics and Information Technology** developed **Entity Locker**.

About Entity Locker

- It is a secure, **cloud-based solution** that **simplifies storage, sharing, and verification of documents** for large organisations, corporations, MSMEs, etc.
- **Critical component of India's Digital Public Infrastructure.**

Entity Locker offer

- **Real-time access and verification** of documents through integration with government databases
- **Consent-based mechanisms** for secure sharing of sensitive information
- **Aadhaar-authenticated role**-based access management to ensure accountability.
- **10 GB of encrypted cloud storage and legally valid digital signatures** for authenticating documents.

3.28.30 Time Use Survey (TUS)

Recently, **National Statistics Office** (NSO) released the 2nd **Time Use Survey** (TUS) for the year 2024.

About Time Use Survey (TUS)

- **Purpose**: It **provides a framework for measuring time dispositions** by population on different activities.
- **Objective:** To **measure the participation of men and women in paid and unpaid** activities.

Key findings

- **Increase in women** participation in **employment** related **activities (paid activities)**.
- Increased **acknowledgement of caregiving activities regardless of gender** within Indian families.
- **Time spent in Culture, leisure**, mass-media and sports practices **has increased in both genders.**

3.28.31 Enhanced Certificate of Origin (eCoO) 2.0 System

The Directorate General of Foreign Trade (DGFT) has launched the **eCoO 2.0 System.**

About eCoO 2.0

- It is a **significant upgrade** to simplify the **certification process** for exporters and enhance trade efficiency.
- Offers several **user-friendly features, such as multi-user access** under **single Importer Exporter Code.**
- Supports **Aadhaar-based e-signing alongside digital signature tokens,** providing greater flexibility.

About Certificate of Origin

Document used in international trade to certify that goods being exported **originated in a specific country.**

3.28.32 Tonnage Tax Scheme

The **Budget 2025-26** has expanded the **tonnage tax scheme.**

Tonnage Tax Scheme

- The Scheme was previously available to **sea going ships**.
- Now it is available **to inland vessels** registered under **Indian Vessels Act, 2021** to promote water transport.
  - **Inland Vessels Act, 2021** aims to promote safe, economical inland water transport, ensure legal uniformity and vessel procedures.
- **Ministry:** Ministry of Shipping (now part of the Ministry of Ports, Shipping, and Waterways).
- **Genesis:** Introduced in 2004 under the Indian Finance Act, 2004.
- **Significance:** Encourage more cargo movement; further investment.

3.28.33 Potash

Government will explore Potash Mining in Punjab's **Fazilka and Sri Muktsar Sahib Districts.**

- **Geological Survey of India (GSI)** surveys have also identified potash reserves in Rajasthan.

About Potash

- **Definition:** Potash is an impure combination of potassium carbonate & potassium (K) salts.
- **Principal ore**: Sylvinite.
- **Uses of Potash**: **Agriculture: Over 90% of potash** is utilized as fertilizer.
  - **Purification of water**: Potash alum removes hardness of water & has anti-bacterial properties.
  - **Other industrial Uses**: Manufacturing of Glass ceramics, Soaps and detergents, Explosives etc.
- **Common Types of Potash Fertilizers:** Sulphate of Potash (SOP) & Muriate of Potash (MOP).
- **Potash Derived from Molasses (PDM):** It is **100% indigenous fertilizer** under the **Nutrient Based Subsidy (NBS) scheme.**
- **Potash classified as Critical Mineral**: Under "Mines & Minerals (Development and Regulation) Amendment (MMDR) Act, 2023".

Economic Status of Potash in India

- **Deposits**: Rajasthan (89%), Madhya Pradesh (5%) and Uttar Pradesh (4%).
- **Import**: India meets 100% of its Potash requirement through imports (Indian Mineral yearbook 2022).

3.28.34 Electronics Manufacturing

After China, India has become the **World's 2nd largest mobile manufacturing country** and is followed by Vietnam.

- Presently, **99.2%** of all mobile phones sold in India are **made in India**.
- Mobile phones constitute 43% of India's total electronics production.

Electronic manufacturing sector status

- **Total valuation:** India's electronics sector has experienced rapid growth, reaching USD 155 billion in FY23.
- **Production:** Production nearly doubled from USD 48 billion in FY17 to USD 101 billion in FY23.
- **Exports:** Electronics has become the country's fifth largest export commodity, but India **represents less than 1% of global share**.

3.28.35 Union Budget 2025: Developing 50 Top Tourist Destinations in 'Challenge Mode

These destinations will be developed in partnership with states to elevate **tourism infrastructure, improve ease of travel,** and **strengthen connectivity to key sites**.

- States will be required to provide **land for critical infrastructure**, which will be classified under the **Infrastructure Harmonized Master List (HML)**.

Key Focus of Budget

- **Employment-Led Growth**: Skill development, MUDRA loans for homestays, improved travel and connectivity.
- **Spiritual Tourism**: Focus on pilgrimage and heritage tourism, especially Buddhist sites.
- **Medical Tourism**: Promote "**Heal in India**" initiative to boost India's global healthcare position.
- **Gyan Bharatam Mission**: Documentation and conservation of India's manuscript heritage.

Contribution of Tourism Sector

- Accounted for **5% of GDP in FY23.** The sector also created **7.6 crore jobs during the same period.**

- India received **1.8 per cent of world tourism receipts**.
- **Challenges**: Infrastructure Gaps, Safety Concerns, Environmental Impact, Tourism Seasonality.

Measures taken by government

- **Infrastructure Development**: Swadesh Darshan 2.0, PRASHAD Scheme, RCS-UDAN for regional connectivity.
- **Policy & Legal**: National Tourism Policy, E-Visa for multiple categories.
- **Thematic Tourism:** Promoting wellness, culinary, rural, and eco-tourism.
- **NIDHI (National Integrated Database of Hospitality Industry**)

3.28.36 RuTAGe Smart Village Center (RSVC)

Rural Technology Action Group (RuTAGe) Smart Village Center (RSVC) launched in Mandaura, Haryana.

- RSVC was **developed under aegis of Office of Principal Scientific Adviser (PSA)**.
- It aims to **integrate cutting-edge technologies with rural needs**, enhancing quality of life and empowering communities.
- PSA conceptualized RuTAGe in 2003-04.

Key Features of RSVC Model

- **Physical Presence**: Offers **long-term tech support at Panchayat level.**
- **Market Access**: Emphasizes collaboration with platforms like **ONDC, Amazon, and Market Mirchi.**
- **Scalability**: Plans to expand with 20 new centers and **empower women entrepreneurs.**

3.28.37 Global Capability Centers

Madhya Pradesh has become the first state in country to bring a dedicated **Global Capability Centre** (GCC) policy.

About GCCs

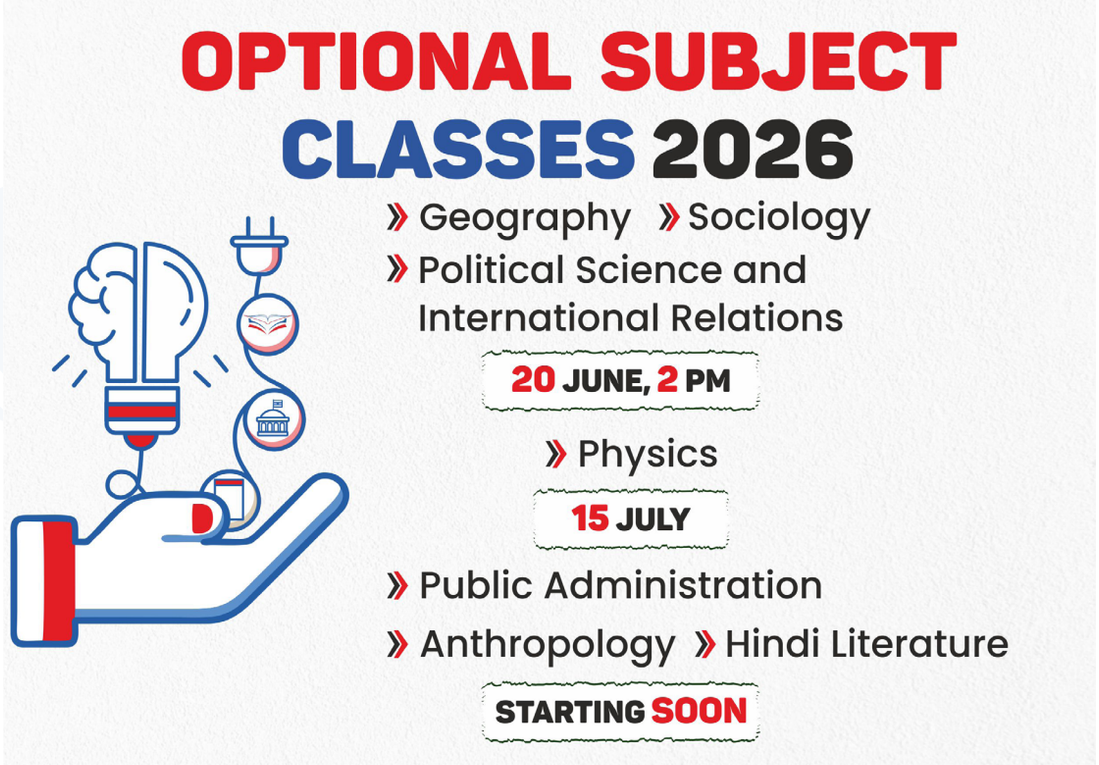
- GCCs are designed to leverage global talent pools and technological advancements to enhance organizational capabilities and drive business transformation.
- India's GCC are emerging as **strategic hubs** reshaping the **Indian corporate landscape**.
- **Present Scenario**: Number of GCCs in India has grown from ~1430 (FY 2019) to >1700(FY 2024) in FY24.
  - As of FY24, GCCs in India employ nearly 1.9 million professionals.

3.28.38 Anji Khad Bridge

Indian Railways has unveiled a monumental engineering achievement with the completion of the Anji Khad Bridge, **India's first cable-stayed rail bridge.**

About Anji Khad Bridge

- **Location**: Reasi district, Jammu and Kashmir, part of the Udhampur-Srinagar-Baramulla Rail Link (USBRL).
- **Dimensions**: Length: 725.5 meters; Height: 331 meters above the Anji River (a tributary of the Chenab).
- **Significance**: Enhances connectivity between **Katra** and **the Kashmir Valley,** expected to boost tourism and foster economic growth.



3.29. TEST YOUR LEARNING

Prelims Questions

1. Which of the following best describes "Floating Exchange Rate" as followed by India?

(a) The exchange rate is determined purely by market forces without intervention.

(b) The exchange rate is fixed by the central government periodically.

(c) The exchange rate is primarily market-determined but the RBI intervenes occasionally.

(d) It means the rupee is pegged to a basket of currencies.

2. The recent liberalization of FEMA Regulations by RBI aimed at the internationalization of the rupee allows:

1. Indian exporters to open foreign currency accounts
2. Non-residents to open INR accounts in Indian banks overseas branches
3. Use of Special Rupee Vostro Accounts (SVRAs) for cross-border trade settlement

Select the correct answer using the code below:

(a) 1 and 2 only

(b) 1 and 3 only

(c) 2 and 3 only

(d) All of the above

3. Which of the following are expected positive effects of rupee depreciation?

1. Boost to exports
2. Higher remittance value
3. Rise in foreign debt burden
4. Incentivized capital outflows

Select the correct answer:

(a) 1 and 2 only

(b) 1, 2 and 4 only

(c) 1 and 3 only

(d) 2 and 4 only

4. The Jan Vishwas (Amendment of Provisions) Act, 2023 primarily aims to:

(a) Encourage adoption of renewable energy in industrial sectors

(b) Rationalize subsidies across social welfare schemes

(c) Promote cooperative farming through digital governance

(d) Decriminalize minor economic and procedural offences

5. Consider the following policy instruments:

1. Deregulation of state-controlled markets
2. Reduction in compliance burden for businesses
3. Digital grievance redressal platforms
4. Enhanced inspector raj mechanisms

Which of the above are consistent with the government's deregulation efforts?

(a) 1, 2 and 3 only

(b) 1 and 4 only

(c) 2 and 3 only

(d) All of the above

Mains Questions (2)

Q1. (150 words)

"Rupee internationalization could be India's strategic shield in an era of global financial uncertainty." Examine.

Q2. (250 words)

"Deregulation reforms like the Jan Vishwas Act are necessary but not sufficient to make India a global investment hub." Critically examine.

SECURITY

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4.1. REGIONALISM

Why in the News?

Vice-President raised concerns about the forces that are trying to create a clash between nationalism and regionalism.

Forms of Regionalism in India

Secessionism

It refers to the desire to **withdraw from the union,** often supported by militant or fundamentalist movements.
Ex. Secessionist groups have been active in Jammu & Kashmir, Manipur etc.

Separatism

It advocates for the interests of a particular group withan a larger et such as a state, based on language, religion, ethnicity, or other factors Ex. **Bodoland movement** in Assam, **Gorkhaland** movement in West bengal and **Khalistan** movement in Punjab

Demand for Autonomy

Regional parties and Union Territories like NTC Delhi are demanding more autonomy and full statehood status.

Supra-State Regionalism

It arises from **shared interests among people** resting is **mutiple states,** with ethnic regionalism on the northeast-ern part of India serving as an example.

Inter-State and intra-State Regionalism

Inter-state regionalism creates divisions among two or more states whereas intra-specific state or **region within a state seeking autonomy.**

Regionalism

- **Shared Identity:** Reflects common ethnic/linguistic/economic ties in a geographic area (e.g., Dravidian movement in Tamil Nadu).
- **Evolution in India:**
  - Post-independence linguistic state demands (Potti Sriramalu's 1952 fast)
  - Recent state formations (Jharkhand/Chhattisgarh/Uttarakhand 2000).

Factors behind Regionalism

- **Linguistic/Cultural Identity:** e.g., Marathi Manoos concept in Maharashtra.
- **Ethnocentrism:** Native vs "outsider" binaries.
- **Tribal Identity:** Jharkhand's tribal heritage.
- **Uneven Development:** e.g., GNLF in Darjeeling vs South Bengal.
- **Administrative Neglect:** Telangana's water/budget grievances.

Impact of Regionalism

- **Positive:** Strengthens federalism/state autonomy, Amplifies marginalized voices, Preserves cultural diversity, Channels grievances democratically.
- **Negative:** Threatens national unity (secession risks), "Sons of Soil" discrimination (migrant attacks), Political fragmentation, Regional-over-national prioritization.

Way Forward

- **National Unity:** Ek Bharat Shreshtha Bharat cultural exchanges.
- **Cultural Integration:** Interstate interaction programs.
- **Cooperative Federalism:** Balance state empowerment with national cohesion.
- **Inclusive Development:** Targeted infrastructure/jobs in backward regions.
- **Autonomy Respect:** Limited central interference in state matters.

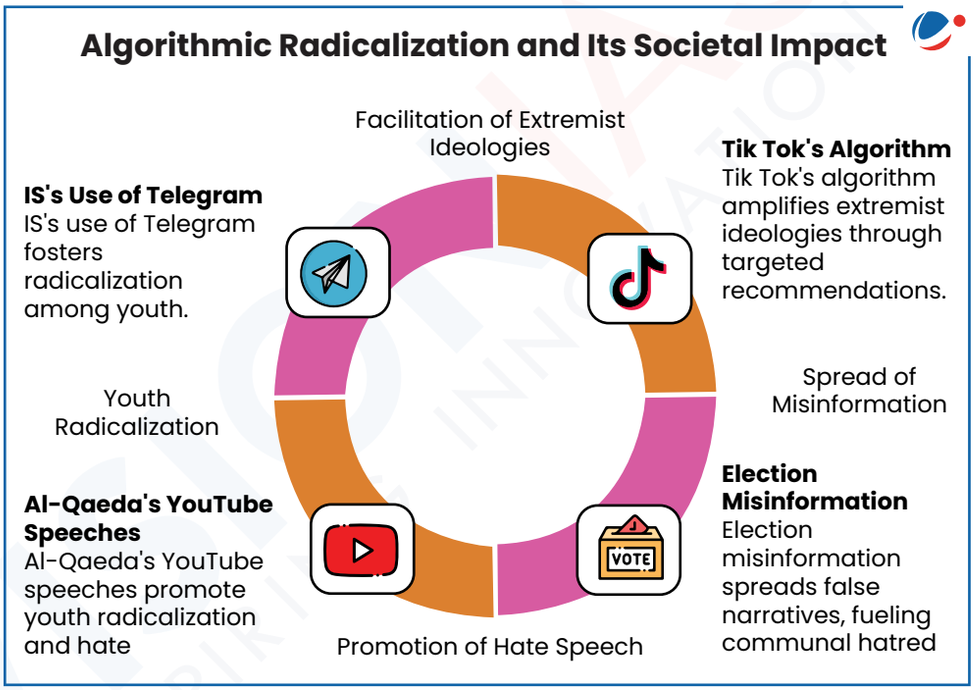
4.2. ALGORITHMIC AMPLIFICATION AND RADICALISATION

Why in the News?

Recently, experts have raised concerns regarding **social media algorithms having the potential to amplify and spread extremism**.

Understanding Social Media Algorithmic Amplification

- **Social media algorithms:** Computerized rules analyzing user behavior to rank content (likes, comments, shares).
- **Algorithmic Radicalisation:** Algorithms push users toward extremist content.
  - **Impact:** Deepens societal divisions, spreads disinformation, etc.
  - **Mechanism:** Promotes confirmation bias and group polarization.
  - **Outcome:** Traps users in ideological filter bubbles through selective content curation.



Challenges in curbing Algorithmic Radicalization

- **Complex mechanisms involved:** Social media algorithms operate as 'black boxes'.
- **Modulated content:** Extremist groups use coded language/ symbols (e.g., IS/al-Qaeda's satire) to bypass detection.
- **Moderation vs. Rights:** Hard to balance removal of harmful content with free expression rights.
- **Failure in accounting local context:** Global algorithms miss region-specific socio-political nuances, worsening radicalization.
- **Lack of international regulation:** Countries prioritize national over global interests

Steps taken to curb Algorithmic Radicalisation

Global steps

- **European Union's (EU's) Digital Services Act 2023.**
- **Artificial Intelligence (AI)-driven moderation:** E.g., **YouTube's** machine-learning model, 2023.
- **Christchurch Call**: To eliminate terrorist and violent extremist content online.

Indian steps

- **Ministry of Electronics and Information Technology's** several initiatives.
- **IT Rules 2021:** Removing flagged content within 36 hours.

Way forward

- **Algorithmic Audits:** Mandate regular audits (e.g., EU's Digital Services Act 2023).
- **Accountability measures:** Define clear rules. (e.g., Germany's NetzDG law with 24-hour removal mandates).
- **Custom-made content moderation:** (e.g., France's dialect-specific detection systems).
- **Public awareness:** (e.g., UK Online Safety Bill's media literacy initiatives).

4.3. HYBRID WARFARE

Why in the News?

Recently, Union Defence Minister **underlined the dangers of hybrid warfare** to India.

More on the news

- Highlighted blurred lines between border/internal security, with threats to critical infrastructure.
- **Noted evolving frontline concepts:** terrorism, cyber-attacks, human trafficking transcends borders.

About Hybrid Warfare

- **Definition:** Combines conventional/unconventional tactics (kinetic/non-kinetic) for strategic gains without full-scale war.
- **Examples:** China's "three warfares," Russia-Ukraine cyber/disinformation, Israel-Palestine psyops, Lebanon pager blasts.

Reasons for emergence

- **Strategic advantage:** Achieves objectives without war (e.g., Russia's "little green men").
- **Cost-effective:** Sanctions/cyberattacks avoid direct conflict (e.g., U.S. vs. Iran).
- **Tech advancement:** Enables cyber/disinformation campaigns (e.g., Russian attacks on Ukraine).
- **Non-state actors:** Proxy warfare (e.g., Iran-Houthis in Yemen).
- **Global interconnectivity:** Exploits cyberspace/economics (e.g., Russian 2016 U.S. election interference).

Hybrid warfare threats to India

- **Hostile neighbors:** Pakistan's proxy terror, China's gray-zone tactics.
- **Internal insurgencies:** Naxalism, NE ethnic conflicts.
- **Critical infrastructure:** Cyberattacks (Kudankulam 2019, Mumbai grid 2020).
- **Economic warfare:** Chinese import dependencies (APIs, electronics).

India's preparedness

- **Defense modernization:** DURGA-II Project, 'Make in India'.
- **Structural reforms:** CDS, DAIPA, DAIC, Defence Cyber Agency (2021).
- **International partnerships:** GSOMIA (USA), Quad collaboration.
- **Parliamentary reviews:** Standing Committee on Defence (2024) assessing cyber/anti-drone tech.

Way forward

- **Capacity building:** Cyber retaliation/offensive capabilities, tech-resilient personnel.
- **Adaptive strategies:** Dedicated hybrid warfare division.
- **Proactive approach:** Smart power (diplomatic/economic/informational tools).
- **'Whole of government' plan:** NSCS-led, CCS-approved grand strategy.

4.4. NUCLEAR DISARMAMENT

Why in the News?

UN Secretary-General António Guterres warned at the **"UN Conference on Disarmament" in Geneva** that the risk of nuclear war is rising and urged governments to push for total disarmament.

Factors behind Rising Risk of Nuclear War

- **Geopolitical Risks:** Russia suspended New START/CTBT during Ukraine war.
- **Doomsday Clock Alert:** Moved closer to midnight (Jan 2025).
- **Expanding Arsenals:** 12,000+ warheads; China may reach 1,500 by 2035.
- **Modernization Risks:** Hypersonic missiles reduce decision time.
- **False Alarms:** 1983 Soviet incident nearly triggered war.
- **AI Weaponization:** Automated nuclear decisions raise risks.
- **Space Militarization:** U.S. Space Force, India's ASAT test (2019).

What is Nuclear Disarmament?

- Elimination/reduction of nuclear weapons via unilateral or multilateral action.

Key Obstacles to Disarmament

- **Commitment Gap:** States modernize while pledging cuts (e.g., Russia's NPT support vs. ICBM development).
- **Treaty Loopholes:** NPT's vague clauses enable evasion.
- **Withdrawals:** North Korea left NPT, conducted tests.
- **Bilateral Failures:** INF Treaty collapsed over violations.
- **Non-NPT States:** India, Israel, Pakistan outside framework.
- **Military Imbalance:** U.S. (916B)vs.Russia(916B)vs.Russia(109B) spending fuels nuclear reliance.

Global Nuclear Weapons Treaties/Other Initiatives

Treaty on the Non-Proliferation of Nuclear Weapons (NPT) (1970)
Prevents the spread of nuclear weapons and promotes disarmament

Comprehensive Nuclear-Test-Ban Treaty (CTBT) (1996)
Prohibits nuclear explosion tests but awaits ratification by key countries

Treaty on the Prohibition of Nuclear Weapons (TPNW) (2021)
Legally binds countries to refrain from nuclear weapons activities

Conference on Disarmament (CD) (1978)
Serves as a forum for negotiating arms control agreements

United Nations Office for Disarmament Affairs
Aims for general and complete disarmament globally

International Atomic Energy Agency
Ensures the safe and peaceful use of nuclear technology

Pact for the Future (2024)
Reaffirms the goal of total nuclear disarmament

India's stance on Nuclear Disarmament

- India is committed to **the goal of global, non- discriminatory and verifiable nuclear disarmament.**
- **Key Actions:**
  - **1954:** First country to call for a **ban on nuclear testing** worldwide.
  - **1978:** Proposed an **international cconvention** to prohibit the **use or threat of nuclear weapons.**
  - **1982:** Called for a **nuclear freeze,** urging a halt to fissile material production for nuclear weapons.
  - **1998:** Voluntarily adopted measures to **prevent nuclear proliferation** despite conducting nuclear tests.
    - Policy of a **'no - first - use'.**
  - **1999: Draft Nuclear Doctrine.**
- **India's Stands on Global Nuclear Treaties:**
  - **NPT: Opposes** due to its **discriminatory nature.**
  - **CTBT:** Did **not sign** it because it failed to address nuclear disarmament, non-proliferation.
  - **TPNW:** Does **not support** this treaty since it lacks **new legal standards for disarmament.**
- **Multilateral Approach**
  - India advocates **gradual disarmament** through **universal agreements.**
  - India supports negotiating a **Nuclear Weapons Convention.**

- **Other Issues:** Prestige symbolism (UN), No missile regulation treaty, NATO's deterrence doctrine, MAD theory persistence.

Way Forward

- **Transitional Approach**: A phased strategy balancing **deterrence and disarmament**. It covers
  - **Bilateral Arms Reduction**: The **U.S. and Russia**, holding the largest nuclear stockpiles.
- **Treaty-based limits on strategic missile defences.**
- Strengthened international norms against both nuclear and conventional aggression.
- **Need for Global Cooperation**: continue **International Physicians for the Prevention of Nuclear War (IPPNW)** nuclear disarmament efforts.

4.5. COASTAL SECURITY SCHEME

Why in the News?

During a review of the implementation of the **Coastal Security Scheme (CSS)** by the **Ministry of Home Affairs**, various **shortcomings were reported.**

About Coastal Security scheme (CSS)

- The scheme was formulated **in 2005 by the Ministry of Home Affairs (MHA)**.
- **Phases of the scheme**
  - **Phase-I (2005-2011):** Based on the requirements projected by **the coastal States/Union Territories.**
  - **Phase-II (2011-2020):** On the basis of **vulnerability/gap analysis.**
  - **Phase-III:** Currently under the **process of formulation** by the center.
- **Significance of Coastal Security in India**
  - **Securing Trade Routes and Port Infrastructure: 12 major ports, 200 minor ports.**
  - **Fisheries and Fishing Community:** India is the world's **2nd largest fish producing country**.
  - **Terrorist Threats: E.g., terrorist attacks of November 2008 in Mumbai.**

Challenges to Coastal Security Mechanism in India

- **Topography**: 7,516 km coastline with creeks/rivulets enables illegal migration and terrorism. E.g., Harami Nala in Gujarat.
- **Insufficient ICG Manpower:** Recruitment challenges and limited capabilities.
- **Poor Training:** Lack of trained personnel for coastal patrolling and combat.
- **Inadequate Infrastructure:** Lack of buildings, weapons, and vessels. CAG highlighted gaps post-2008 Mumbai attacks.
- **Systemic Flaws:** Jurisdictional confusion and poor coordination.
- **Fishing Vessel Monitoring:** Difficulty distinguishing 300,000+ boats. E.g., 1993 Mumbai attacks involved smuggled explosives via fishing boats.

Other Initiatives to Strengthen Coastal Security

- Upgrading Navy, Coast Guard, and Marine Police with ships, submarines, etc.
  - **E.g., Andaman and Nicobar Command** (unified force) and **INS Kadamba** under Project Seabird.
- **Coastal Surveillance Network, NC3I**, and **National Maritime Domain Awareness Project** provide integrated maritime domain awareness.
  - **E.g.,** NC3I links Navy and Coast Guard operational centers across coastlines.
- National Committee for Strengthening Maritime and Coastal Security, Joint Operations Centers, and Coastal Security Operations Centers enhance collaboration.
- **International Cooperation: SAGAR initiative** & Forums **like IONS** and **IORA**.

4.6. DRAFT DIGITAL PERSONAL DATA PROTECTION (DPDP) RULES 2025

Why in the News?

Ministry of Electronics and Information Technology (MeitY) released draft **Digital Personal Data Protection Rules, 2025** to facilitate implementation of **Digital Personal Data Protection Act, 2023 (DPDP Act).**

Brief Background of DPDP Act, 2023

- **Supreme Court's K S Puttaswamy judgment** (2017) recognized **right to privacy as a fundamental right under Article 21**.
- **In 2017, Justice B.N. Srikrishna Committee** examined data protection issues.
- MeitY released a **draft of the DPDP Bill 2022** which later became **the DPDP Act 2023.**

Benefits of Robust Data Management Policies/Act

- **Robust data management policies encourage digital economy**, innovation, and jobs etc.
- It enhances **informational privacy with regulations** and improves socio-economic indicators.

Key Tenets of DPDP Rules, 2025

Notice Requirement: Data Fiduciaries are mandated to provide clear and comprehensive notices to Data Principal

Intimation of Personal Data Breach: Data Fiduciaries must inform affected Data Principals and the Board of breach.

Erasure of Personal Data: Data Fiduciaries must erase personal data if the Data Principal does not approach them within the specified time period.

Cross border Data Transfer: Transfer of personal data outside India is subject to restrictions specified by the Central Government.

Digital Personal Data Protection Act, 2023

- **Primary objective of Act** is framework for **Protection and Processing of Personal Data.**
- It protects **digital personal data** (means personal data in digital form) by providing for:
  - The obligations of **Data Fiduciaries**; The rights and duties **of Data Principals** and **Consent manager i.e., Person** officially registered with Data Protection Board of India (DPBI).
  - **Financial penalties** for breach of rights, duties, and obligations.

Key Provisions of Digital Personal Data Protection Act, 2023

Provision	Details
Applicability	Applies to digital data processed in India or abroad for Indian goods/services. Exempts personal use or publicly available data.
Consent	Requires consent for lawful processing, with withdrawal rights. Exempts government benefits, emergencies. Parental consent for children/disabled
Data Protection Board of India (DPBI)	Monitors compliance, imposes penalties, handles breaches, and grievances. Appeals to Telecom Disputes Tribunal.
Rights and Duties of Data Principal	**Rights:** Access, correction, erasure, grievance redressal. **Duties:** No false complaints: penalties up to Rs 10,000.
Obligations of Data Fiduciaries	Ensure data accuracy, security, breach notifications, and data erasure post-purpose.
Significant Data Fiduciaries (SDF)	Notified based on data volume, sensitivity, and risks. Must appoint data protection officers, auditors, and conduct impact assessments.
Parental Consent	Verifiable consent for children's data; bans harmful processing/ads for under-18s.
Exemptions	Exempts security, research, start-ups, legal enforcement, and foreign contracts. Central Government can grant additional exemptions.

Issues of DPDP Act

- **Violate Fundamental Rights** and **Missing Rights.**
- **Cross-Border Data Transfer:** The Act allows unrestricted data transfer.
- **State Exemptions and Privacy Risks** and **Lack of Harm Regulation**.
- **Two-year term with reappointment** for Board members impact independence, increasing executive influence

Way Forward

- **Adopt Global Best Practices, Encourage Bilateral Agreements**
- **Regulatory Adaptability:** Continuously update frameworks and **Dedicated Task Force to** co-create adaptive regulatory measures and **Clear definition of** terms like sovereignty.

4.7. TELECOMMUNICATIONS RULES, 2024

Why in the News?

Union Government notified the **Telecommunications (Procedures and Safeguards for Lawful Interception of Messages) Rules, 2024 that allows interception in India.**

Key provisions of New Rules 2024

- **Legal Basis**: Notified under Section 56 of the **Telecommunications Act, 2023**. Supersedes **Rules 419 & 419A** of the Indian Telegraph Rules, 1951.
- **Authorised Agencies**: The **Central Government** may authorize agencies to **intercept messages** in case of a **public emergency** or **public safety concerns**, with approval from the **Competent Authority**.

Key Highlights: Telecommunications Rules, 2024 - Procedures and Safeguards for Lawful Interception of Messages

- **Authorization:** Only Joint Secretary or higher can order with confirmation within 7 days.
- **Safeguards & Review:** Interception allowed only if data is unobtainable otherwise; reviewed by Central (Chair: Cabinet Secretary; Members: Legal Affairs, Telecom Secretaries) or State (Chair: Chief Secretary; Members: Law, State Govt Secretaries) Committees within 7 days.
- **Validity Period:** Initial 60 days, maximum 180 days with renewal.
- **Data Destruction:** Records destroyed every 6 months.

Legality of interception in India

- **Telecommunication Act 2023:** It repealed Indian Telegraph Act 1885 and Indian Wireless Telegraph Act 1933.
- **Information Technology (IT) Act 2000:** It allows interception of **all electronic transmission.**
- **People's Union for Civil Liberties (PUCL) vs Union of India (1996) Case:** Supreme Court held that **phone tapping is an infringement on the right to freedom of speech**.

Concerns with Interception rules

- **Privacy Concerns**: As even **encrypting systems can be put under surveillance**.
- **Lack of clarity:** Lack of definition of public emergency.
- **Concentration of powers:** It gives **executive branch the power to both issue and review**.
- **Indefinite retention in some cases** and **Lack of protection for Telecom Service Providers.**
- **Lack of Accountability**.

Way Forward

- **Limit subjective interpretation** to ensure interception is **strictly for national security**.
- **Establish an independent oversight body.**
- **Protection to TSPs** and **Accountability through periodic audit.**

4.8. INTERPOL

Why in the News?

INTERPOL issued its first Silver Notice in a 52-country pilot, including India, and Ministry of Home Affairs also launched BHARATPOL portal to seamlessly connect with INTERPOL.

About Bharatpol

- **Portal:** It is an **online portal** developed by the Central Bureau of Investigation (CBI).
  - **Every agency and police force in India** will be able to **connect with INTERPOL**.
- **Five Key Modules:**
  - **Connect:** As an extension of INTERPOL's National Central Bureau (NCB-New Delhi).
  - **INTERPOL Notices:** Transmission of requests for INTERPOL notices.
  - **References:** INTERPOL references from 196 countries will make it much simpler.
  - **Broadcast:** Through this, **requests for assistance**.
  - **Resources:** Exchange and management of documents.
- **Significance of BHARATPOL:** Enhances efficiency and effectiveness, Real-time Interface, provides faster responses and INTERPOL Offers access to 19 types of databases access.

About INTERPOL

- **Genesis:** Established as **International Criminal Police Commission (ICPC)** in Vienna in **1923**.
  - It was **established as INTERPOL** after **adoption of its Constitution in 1956**.
- **Members: 196 countries** including **India** as one of the **founding members**.
- **Headquarters:** Lyon, France.
- **National Central Bureau (NCBs):** Established by member countries as a **point of access.**
  - **CBI is India's NCB** to the INTERPOL.
- **Governing Bodies:** The General Assembly and Executive Committee.
- **INTERPOL Membership Process:** Candidate country applies, Application reviewed by General Assembly, General Assembly votes, requires 2/3 votes (excluding abstentions) and Approved country becomes INTERPOL member.
- **Notices:** INTERPOL's **color coded notices** are **international requests for cooperation**.

Types of Notices

- **Red Notice**
  To seek the location and arrest of wanted persons
- **Blue Notice**
  To collect information about a person's identity, location or activities
- **Green Notice**
  To warn about a person's criminal activities.
- **Purple Notice**
  To seek information on criminal methods or modus operandi.
- **INTERPOL UN Security Council Special Notice**
  For entities targeted by UN Security Council Sanctions Committee.
- **Yellow Notice**
  To help locate missing persons, often minors.
- **Black Notice**
  To seek information on unidentified bodies.
- **Orange Notice**
  To warn of a serious and imminent threat to public safety
- **Silver Notice (pilot phase)**
  To identify and trace criminal assets.

Role of India in INTERPOL

- **CBI as NCB**: Acts as India's INTERPOL hub, linking Central and State/UT agencies via INTERPOL Liaison Officers (ILOs) and Unit Officers.
- **Global Operations Centre (GOC)**: Based in New Delhi, offers 24x7 global law enforcement support.
- **INTERPOL Young Leaders Programme 2023**: Hosted by India to train global police leaders, promoting international collaboration.

Need for International Police Cooperation

- **Transnational crimes**: Crimes like trafficking and cybercrime cross borders. **E.g.,** INTERPOL's Operation HAECHI targeted cyber-financial crimes.

- **Emerging threats**: Cybercrime and trafficking exploit global legal gaps. **E.g.,** Operation Serengeti (2024) arrested 1,000+ cybercriminals across 19 African countries.
- **Counter-terrorism**: Intelligence-sharing is crucial to disrupt terrorist networks.
- **Legal assistance**: Operation FLASH-WEKA united 54 countries against human trafficking.
- **Resource sharing**: Pooling resources enhances crime-fighting capabilities.

Obstacles in Cooperation

- **Legal disparities**: Differing laws and standards hinder investigations.
- **Cultural barriers**: Language, cultural differences, and corruption reduce trust.
- **Resource gaps**: Uneven tech capabilities limit information sharing.
- **Political issues**: Tensions and conflicting interests obstruct collaboration.

4.9. NATIONAL INVESTIGATION AGENCY (NIA)

Why in the News?

Supreme Court in **Ankush Vipan Kapoor vs. NIA** clarified that the NIA's powers are not limited to investigating only scheduled offences mentioned under NIA Act.

More on the news

- The ruling **upheld the Punjab & Haryana High Court's decision** to cancel bail in a heroin smuggling **case involving non-scheduled offences.**
- The case had connections to **drug trafficking, hawala channels, and terrorism funding.**

Supreme Court Ruling

- The Supreme Court supported **NIA's authority** to **investigate non-scheduled offences related to scheduled ones.**
- **Under Section 8 of the NIA Act**, NIA can investigate connected **non-scheduled offences and any other accused** linked to the scheduled offence, with central government approval.
- Investigations should be **conducted jointly where possible.**

Schedule of Offences Under the NIA Act

- **Key Laws:** Explosive Substances Act, 1908, Atomic Energy Act, 1962, Unlawful Activities (Prevention) Act, 1967, Anti-Hijacking Act, 2016
- **Aviation and Maritime Safety Laws:** Suppression of Unlawful Acts against Safety of Civil Aviation Act, 1982, Suppression of Unlawful Acts against Safety of Maritime Navigation and Fixed Platforms Act, 2002
- **Security and Terrorism Laws:** Weapons of Mass Destruction and their Delivery Systems Act, 2005, SAARC Convention (Suppression of Terrorism) Act, 1993
- **Indian Penal Code and Other Specific Sections:** Chapter VI of IPC, Sections 370 and 370A (related to trafficking), Sections 489-A to 489-E (currency-related offences), Section 25(1AA) of Arms Act, 1959, Section 66F of Information Technology Act, 2000

About National Investigation Agency (NIA)

- **Establishment**: Post-26/11 Mumbai attacks under the NIA Act, 2008.
- **Objective:** To investigate and prosecute offences that **threatens India's sovereignty, security, and integrity,** friendly relations with foreign States matters relating to international treaties etc
- **Headquarters:** New Delhi, with zonal offices in Guwahati and Jammu
- **Headed by:** A Director-General from the IPS.
- **Jurisdiction**: Nationwide and extends to Indian citizens abroad including,
  - the persons in the service of the Government
  - To persons on ships and aircrafts registered in India
  - To persons who commit a Scheduled Offence beyond India against the Indian citizen or affecting the interest of India.

- **Powers:**
  - Investigation upon central government directive.
  - Prosecution in designated NIA courts.
  - Coordination with the state police.
  - Extraterritorial operations under international agreements.
- **Conviction rate:** 95.23% in 147 cases out of 640 registered since inception.

Initiatives taken to enhance the capacity of NIA

- **National Terror Data Fusion and Analysis Centre**
- **NIA amendment act 2019**
- **Made Nodal agency at central level for** investigating Terror funding and fake Indian currency notes cases.
- MoU between **NIA and National forensic science** University for capacity building of officers.

4.10. UNITED NATIONS CONVENTION ON CYBERCRIME

Why in the News?

The UN General Assembly recently adopted the **United Nations Convention on Cybercrime,** marking the first **legally binding UN instrument** on this issue.

More on the News

- Adopted by consensus among **193 UN Member States**
- To be signed in Hanoi, Vietnam in 2025
- **United Nations Office on Drugs and Crime** (**UNODC**) serve as secretariat
- Enters into force after 40 states ratify
- **Key Focus**: Preventing, investigating, and prosecuting cybercrimes, including electronic evidence collection and sharing

Key Provisions of the Convention

- **International Cooperation & Data Sharing**: Mutual legal assistance, Extradition, 24/7 network for immediate assistance
- **Procedural Measures**: Guidelines for electronic data management
- **Protection Aspects**: Personal data compliance, Respect for human rights, Bilateral/multilateral data sharing agreements
- **Additional Provisions**: Extradition, Transfer of sentenced persons, Transfer of criminal proceedings, Joint investigations
- **UN Cybercrime Convention Requires State Parties to**
  - **Criminalize Offences**: Illegal system access, Child sexual abuse production/distribution, Cybercrime money laundering, Non-consensual content dissemination
  - **Take Measures for**: Establishing criminal records, protecting witnesses, Assisting and protecting victims
- **Purposes of the UN cybercrime convention**
  - Technical assistance and capacity building
  - To combat cybercrime
  - International cooperation

Why the Convention against Cybercrime matters?

- **Increased Connectivity and Vulnerability:** Over 67% of the world's population is online, increasing cybercrime risks, especially in Southeast Asia.
- **Around-the-Clock Cooperation:** Essential for handling electronic evidence across jurisdictions.
- **Transnational Nature of Cybercrime:** Requires a coordinated global response given the cross-border nature of cybercrimes.
- **Adapting to Technological Advancements:** Addressing the dual-use risks of new technologies like AI.
- **Protecting Children:** Equips governments with tools to combat online child exploitation.
- **Rehabilitation and Justice for Victims:** Acknowledges the need for justice and support for cybercrime victims.

4.11. SMUGGLING IN INDIA REPORT 2023-24

Why in the News?

Recently, Directorate of Revenue Intelligence (DRI) released **'Smuggling in India' report 2023-24.**

Key Highlights of the Report

- Provides insights into **smuggling trends, focusing on drugs, wildlife products, currencies**, indicating a rise in these activities.

Smuggling and Import Fraud in 2023-24

- **Rise in seizures of Narcotics and Psychotropic** substances by 8223 kg.
- Import fraud worth **of 6000 crore detected.**
- Gold smuggling operates through **hub and spoke model,** entry via land borders and air routes.

Directorate of Revenue Intelligence (DRI)

- An anti-smuggling enforcement agency under the **Central Board of Indirect Taxes & Customs (CBIC), Ministry of Finance.**
- Objective includes **detecting smuggling and combating related commercial frauds.**

Reasons behind increased cases of Smuggling in India

- **Geography and Borders**: Extensive coastline and porous borders facilitate smuggling.
- **Market Demand:** High demand for gold, especially from Gulf states that drives illegal trade.
- **Sophisticated Techniques:** Use of advanced concealment methods and technology like Darknet and cryptocurrencies.
- **Misuse of Legal Loopholes:** Exploitation of Free Trade Agreements by smugglers.
- **Transnational Networks:** Complex international smuggling networks makes it hard to detect.

Nexus of Smuggling and India's Security Risks

- **Narco-Terrorism:** Due to location between the **Death Crescent and Death Triangle** India is particularly vulnerable to narco-terrorism.
- **Financial Instability:** Smuggling foreign **currency weakens India's financial system whereas tax evasion distorts economic stability.**
- **Commercial Fraud:** Revenue losses from trade misrepresentations.
- **Wildlife and Environmental Crimes:** trade in endangered species threatens India's biodiversity.
- **Human Trafficking:** often overlaps with smuggling routes and networks.

Steps Taken to prevent smuggling and associated crimes

By India

- **Strengthening Enforcement:** Significant contraband seizures through **increased surveillance and intelligence**
- **Legal Empowerment: 2023 Wildlife Protection Act** amendment allows illegal wildlife product seizures, **Directorate general of Foreign trade (DGFT)** empowered to define trade procedures, **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985** restricts narcotics outside medical contexts
- **Technology and Collaboration:** Advanced data analytics for smuggling detection, Customs agreements with 65+ countries, Partnerships **with world Customs Organization (WCO) and Interpol**, Participation in global operations like **Operation SESHA**

Global Level

- **United Nations Office on Drugs and Crime (UNODC)** combats global drug production/trafficking
- UN Convention against Transnational Organized Crime
- **Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)** regulates wildlife trade to prevent species extinction

UN Commission on Narcotic Drugs (UNCND)

- **Recent Development**: India has been selected to chair the 68th Session of the UNCND for the first time.
- **About UNCND**
- **Origin**: Formed in 1946 by an ECOSOC resolution to oversee international drug control treaties.
- **Members**: Comprises 53-member states chosen by the Economic and Social Council (ECOSOC).
- **Functions**: Serves as the governing body for the United Nations Office on Drugs and Crime (UNODC).
- **Mandate:** Focuses on reviewing and analyzing the global drug situation, with emphasis on reducing both supply and demand.

4.12. NEWS IN SHORTS

4.12.1. United Nations Peacebuilding Commission

India has been re-elected to U.N. Peacebuilding Commission for 2025–2026.

About U.N. Peacebuilding Commission

- **Genesis**: Established in 2005 as an advisory body for peace efforts in conflict zones. ·
- **Composition:** 31 Member States elected from General Assembly, Security Council, and Economic and Social Council (ECOSOC), including top financial and troop contributors.
- **Mandate:** Coordinates resources and strategies for post-conflict peacebuilding and recovery.
- **India's Role:** One of the largest UN Peacekeeping personnel contributors, with over 6,000 currently deployed globally.

4.12.2. Kaveri Engine

The Kaveri engine, developed by the Gas Turbine Research Establishment under DRDO, has been approved for inflight testing.

About Kaveri Engine project

- **Initiation**: Started in the late 1980s to provide propulsion for the LCA Tejas, later adapted for UAV use.
- **Current Capability**: Delivers 49-51 kN of thrust, ideal for UAVs like the Ghatak stealth UCAV.
- **Significance**: Represents a key advancement in India's aerospace autonomy, particularly in aero-engine technology.

4.12.3. Search and Rescue Aid Tool (SARAT)

Indian National Centre for Ocean Information Services (INCOIS) develops an advanced version of SARAT.

- This upgrade aims to increase precision in aiding Indian **Search and Rescue (SAR) agencies**, such as the Indian Coast Guard, during maritime operations.

About SARAT

- **Origin:** Developed in 2016 under the 'Make in India' initiative to expedite sea rescue operations.
- **Features**: Includes a mobile application for public use to assist in locating distressed individuals or vessels.

About INCOIS

- **Genesis**: Formed in 1999 as an autonomous entity under the **Ministry of Earth Sciences.**
- **Mandate:** To deliver **ocean information and advisory services** effectively.
- **Activities:** Offers **continuous monitoring and alerts for coastal threats** like tsunamis and storm surges

4.12.4. Indian Cybercrime Coordination Centre

Recently, the **Union Finance Minister asked banks to complete Indian Cybercrime Coordination Centre (I4C) integration** to check financial frauds.

About Indian Cybercrime Coordination Centre

- **Ministry**: Ministry of Home Affairs
- **Objectives: Serve as a central hub** to combat cybercrime, Provide **early warnings and proactive measures**, **public awareness and** Support **capacity building for police etc**.

4.12.5. Pig-Butchering Scam

Union Ministry of Home Affairs in its **annual report of 2023-24** highlighted the new cyber fraud known as the **"pig butchering scam"** or **"investment scam".**

About Pig-Butchering scam

- It involves **large-scale money laundering** and **even cyber slavery**.
- It is a **type of confidence and investment fraud** in which the victim is gradually lured into making increasing **monetary contributions** before the scammer disappears with monies.

4.12.6. Naval Combatants – INS Surat, INS Nilgiri and INS Vaghsheer commissioned

This **first tri-commissioning** of indigenously developed destroyer, frigate and submarine marks a significant step towards realizing India's vision of becoming global leader in naval indigenisation.

About three frontline naval combatants

- **INS Surat: 4th and final ship** of the **P15B Guided Missile Destroyer Project**.
- **INS Vaghsheer: 6th and final** submarine of the **P75 Scorpene Project** built by **Mumbai-based Mazagon Dock Limited**.
  - It is an **indigenous Kalvari-class** based on **French Scorpene-class** design.

India's Naval Indigenization efforts

- **Policies: Indian Navy's Maritime Capability Perspective Plan (MCPP), Indian Naval Indigenisation Plan (INIP) 2015-2030**.
- **Navy's expansion of Make in India initiative** E.g. **INS Vikrant (aircraft carrier etc.**
- **R&D initiatives: Underwater Domain Awareness (Samudrayaan project) etc.**

4.12.7. Anti-Tank Guided Missile (ATGM)- Nag Mk 2

DRDO has announced that field evaluation trials of ATGM- Nag-Mk 2 were successfully conducted recently at Pokhran Field Range in Rajasthan.

About ATGM- Nag Mk 2

- Indigenously developed **third-generation** ATGM, uses **advanced fire-and-forget technology**.
- **Guidance:** Passive Homing through IIR Seeker 9**uses infrared to detect and track targets).**

4.12.8. Eurodrone

India has joined **Eurodrone programme** as an observer member.

- **Eurodrone** or **European Medium Altitude Long Endurance Remotely Piloted Aircraft System (MALE RPAS)** is a twin-turboprop MALE unmanned aerial vehicle (UAV).
- It can be used for long-endurance missions such as intelligence, surveillance, etc.

About Eurodrone programme

- **Members:** Four-nation initiative involving Germany, France, Italy, and Spain.
- **Led by** the Organisation for Joint Armament Cooperation (OCCAR).

4.12.9. SANJAY System

The Defense Minister recently launched **SANJAY**, an advanced **Battlefield Surveillance System (BSS)**, to enhance the Indian Army's surveillance and reconnaissance capabilities.

About SANJAY System

- **It is** jointly developed by the **Indian Army & Bharat Electronics Limited** (BEL), in line with the **'Aatmanirbhar Bharat'** initiative.
- It creates a **unified surveillance picture of the battlefield**.

4.12.10. Naval Anti-Ship Missile–Short Range (NASM-SR)

DRDO and Indian Navy successfully flight-tested the **first-of-its-kind Naval Anti-Ship missile (NASM-SR)** from Integrated Test Range (ITR), Chandipur.

Key Features of NASM-SR

- **Indigenous Imaging Infra-Red (IIR) Seeker:** It facilitates high-precision strikes.
- **Man-in-Loop Control**: Allows real-time targeting adjustments.
- **Propulsion System:** It uses a **solid propulsion system.**

Exercise	Description
Exercise Komodo	➤ An annual event held alternately in India and Japan. ➤ **Aim:** Enhance interoperability for joint urban warfare and counter-terrorism under UN mandate.
Exercise Komodo	➤ Multilateral **naval exercise Komodo** began in Bali, Indonesia. ➤ Focuses on maritime interoperability and regional security. ➤ **INS Shardul** and **P8I** aircraft will participate. ➤ Started in **2014,** it's **a non-combat exercise** by Indonesian Navy.
Exercise Komodo	➤ The 13th edition of joint **exercise 'Ekuverin' started in Maldives with the Indian Army and Maldives National Defence Force.** ➤ A **bilateral annual exercise** held alternately in India and Maldives. ➤ **Ekuverin** means '**Friends**' in Dhivehi. ➤ **Aim**: Enhance interoperability in counter-insurgency and disaster relief.
'Cyclone 2025'	➤ **Participants**: India & Egypt ➤ **Objective:** Boost defence cooperation and share desert warfare skills.
11th SAREX-24	➤ Indian coast Guard conducted **National Maritime Search and Rescue Exercises & Workshop at Kochi**
SLINEX	➤ Bilateral naval exercise between **Sri Lanka and India**
Desert Knight	➤ Trilateral air combat exercise for better interoperability among **India, France, and UAE**
Harimau Shakti 2024	➤ Annual Joint Military Exercise between **India and Malaysia. (2023: Umroi cantonment, Meghalaya)**
Agni Warrior	➤ 13th edition of Joint Military Exercise **between Indian Army and Singapore Armed Forces.**
CINBAX	➤ 1st edition of Joint Table Top Exercise **between Indian Army and Cambodian Army,** focusing on **counter-terrorism under UN Charter Chapter VII at Pune**
Surya Kiran	➤ It is an **annual Joint military exercise** between India and Nepal.
La Perouse	➤ It is **hosted by France** in **strategic straits of Malacca, Sunda, and Lombok**, between Indian Ocean and Pacific Ocean. ➤ **Participating countries:** Australia, Canada, USA, France, **India**, Indonesia, Malaysia, United Kingdom, Singapore.

4.13. TEST YOUR LEARNING

Prelims Questions

1. Which of the following are potential causes of regionalism in India?

1. Uneven regional development
2. Linguistic and cultural identity
3. Presence of Scheduled Tribes in mineral-rich areas
4. Strong representation of states in Parliament

Select the correct answer:

(a) 1 and 2 only

(b) 1, 2 and 3 only

(c) 2 and 4 only

(d) All of the above

2. Which of the following represent positive impacts of regionalism?

1. Preservation of cultural diversity
2. Strengthening federalism
3. Promoting "sons of the soil" policies
4. Decentralized grievance redressal

Select the correct answer:

(a) 1 and 2 only

(b) 1, 2 and 4 only

(c) 2 and 3 only

(d) All of the above

3. With reference to Algorithmic Radicalization, consider the following statements:

1. Algorithms promote user engagement by reinforcing confirmation bias.
2. They often operate as "black boxes" — with minimal transparency.
3. They can be regulated under the EU's Digital Services Act.
4. They are designed primarily for surveillance by governments.

Which of the statements are correct?

(a) 1, 2 and 3 only

(b) 1 and 4 only

(c) 2 and 4 only

(d) All of the above

4. "Ek Bharat, Shreshtha Bharat" is primarily aimed at:

(a) Promoting digital literacy in tribal regions

(b) Encouraging cooperative federalism in public finance

(c) Enhancing interstate cultural exchange and national integration

(d) Developing border-area infrastructure through the BRO

5. The term "filter bubble" is most accurately associated with:

(a) State-sponsored digital surveillance

(b) Groupthink in bureaucratic structures

(c) Algorithmic reinforcement of one-sided views

(d) Cybersecurity breaches in government databases

Mains Questions (2)

Q1. (150 words)

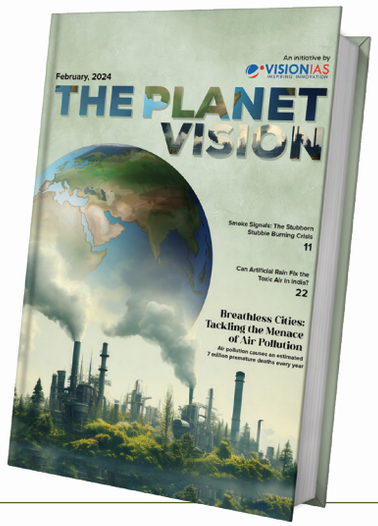
"While regionalism can be a force for democratization, unchecked it risks undermining national unity." Discuss.

Q2. (250 words)

"The threat of algorithmic radicalization has transformed digital spaces into ideological echo chambers." Examine the causes, impacts, and regulatory measures to address it.

VISIONIAS
INSPIRING INNOVATION

THE PLANET VISION



In a world facing unprecedented environmental challenges, staying informed and empowered is more crucial than ever. VisionIAS brings you **'The Planet Vision'**, a simplified, informative, and interactive magazine to delve into the complexities of the environment.

With the belief, that individual efforts and awareness are the key to a sustainable future, the magazine seeks to inspire and educate people to **develop a deeper understanding and appreciation for the environment, nature & planet.**

Objectives of 'The Planet Vision'

- **Sensitise the young generation:** Highlighting pressing environmental issues and their multifaceted impacts.
- **Inspire Action and Promote Sustainable Lifestyle:** Inspiring stories and case studies to motivate readers to make environmentally conscious choices.
- **Bridge Environmental Science and Public Understanding:** Presenting complex scientific concepts in a simple and interactive manner.
- **Showcase Solutions:** Spotlight innovative technologies, projects, and initiatives that offer solutions to environmental challenges.
- **Highlight Local Efforts:** Showcase local conservation efforts, community initiatives, and grassroots projects that make a positive impact on the environment.

Who is the magazine for?

The Magazine is designed for students, eco-conscious individuals, educators, environmentalists, and anyone who cares about the health of our planet.

Key elements of the 'The Planet Vision'

- **Cover Stories:** Thought-provoking articles about a critical ongoing environmental issue, along with the mitigation strategies adopted at the national and international levels.
- **Briefing and Developments:** Stay informed about the latest environmental news, trends, and solutions.
- **Protect and Preserve:** Inspirational stories of local conversation efforts.
- **Environment and You:** Illustrating ways to make environmentally conscious choices in everyday life.
- **Green Tech:** New and emerging technologies in the field of environment.
- **Interactive elements:**
  - **Snapshot:** Telling a story through capturing images.
  - **Quizzes and crosswords:** To test your understanding and knowledge as a reader.

"Look deep into nature, and then you will understand everything better."
-Albert Einstein

Scan the QR code, to download and read the Magazine:

ENVIRONMENT

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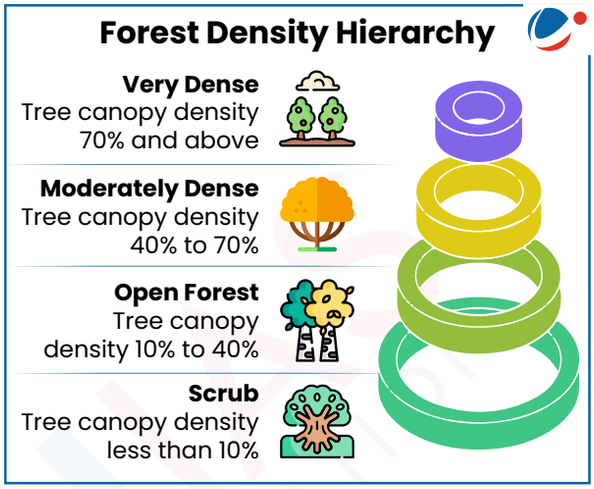
5.1. INDIA STATE OF FOREST REPORT (ISFR) 2023

Why in the News?

The **Ministry of Environment, Forests and Climate Change (MoEFCC)** recently released **the India State of Forest Report (ISFR) 2023.**



Overview

- Prepared by Forest Survey of India (FSI).
- Published every two years since 1987.

Assessment Method

- Used satellite data.
- National Forest Inventory data.
- Field verification.
- Covered 751 districts (up from 636 in previous report).

Key Definitions Used in ISFR 2023

- **Tree Cover:** Comprises all tree patches outside the forest area, less than one hectare in extent.
- **Forest Cover:** Lands over one hectare with a tree canopy density of at least 10%.
- **Forest Area:** Known as **Recorded Forest Area (RFA),** it includes lands notified as forest under **government acts** or records. It includes
  - **Forest Area**: Legal status of land according to government records.
  - **Forest Cover**: Indicates the actual presence of trees on any land.

Other Key findings

- **Carbon Stock:** Increased by 81.5 million tonnes compared to the previous assessment.
- **Top Bamboo Resources states**: Madhya Pradesh, Arunachal Pradesh and Maharashtra.
- **Top 3 States/UTs for Mangrove Cover:** West Bengal, Gujarat and Andaman & Nicobar Islands.
- **Top 3 States for Agroforestry:** Maharashtra, Karnataka and Odisha.
- **Forest Fire:** Forest Fire has decreased during 2021-22 season.
- **Tiger Reserves with highest Forest Fires:** Nagarjunsagar Srisailam Tiger Reserve (Andhra Pradesh), Indravati Tiger Reserve (Chhattisgarh) and Valmiki Tiger Reserve (Bihar).

Key Findings of the ISFR 2023

Change in Forest and Green Cover in India (2021-23)
- **Net forest cover:** 156.41 sq.km
- **Total Green cover:** 1445.18 sq.km
- **Outside RFAs:** 149.13 sq.km

Outside RFAs<Net Forest cover<Total green Cover

Change in Forest density
- **Very dense forest**: 2431.50 sq.km (increase)
- **Moderately Dense Forest**: 12343.95 sq.km (decrease)
- **Open forest**: 1189.27 sq.km (decrease)

Regional Trends

Forest Cover and Mangrove Loss by Region
- **Western Ghats forest cover:** 58.22 sq.km
- **Northeast forest cover:** 327.30 sq.km
- **Mangroves:** 7.43 sq.km

Largest increase in forest and tree cover
- **Chattisgarh:** 683.62 sq.km
- **UP:** 559.19 sq.km
- **Odisha:** 558.57 sq.km
- **Rajasthan:** 397.48 sq.km

Rajasthan<Odisha<UP<Chhattisgarh

States' performance

Top forest and Tree cover states
- **MP:** 85724 sq.km
- **Arunachal:** 67083 sq.km
- **Maharashtra:** 65383 sq.km

Maharashtra<Arunachal<MP

Largest decrease in forest and tree cover
- **MP:** 612.41 sq.km
- **Karnataka:** 459.36 sq.km
- **Ladakh:** 159.26 sq.km
- **Nagaland:** 125.22 sq.km

Nagaland<Ladakh<Karnataka<MP

5.2. SACRED GROVES

Why in the news?

SC pronounced direction on an application for **identification of sacred groves like Orans** by Rajasthan Government following the **T.N. Godavarman judgment (1996).**

About Sacred Groves

- **Definition:** Patches of forests with religious and spiritual significance to the indigenous communities.
- **Scale:** Estimated 100,000 to 150,000 sacred groves in India (IUCN).
- **Notable Feature:** Living Root Bridges (Jingkieng Jri) of Meghalaya on UNESCO's tentative World Heritage list.

Key Directives/Suggestions of the Supreme Court

- **Legal protection via** Wildlife Protection Act, 1972.
- **Draft comprehensive policy for** sacred grove governance.
- **Nationwide survey** to identify sacred groves.
- **Policies for community rights and conservation** with active participation under the FRA Act 2006.
- **Promote Piplantari model (Rajasthan) of** sustainable practices.

Why Sacred Groves need protection?

- **Integral to traditions,** host community events like Sabarimala in Kerala.
- **Refuge for endemic species like Meghalaya's 50 rare and** endangered species confined to sacred groves.
- **Prevents erosion in highland regions** like highland groves in Western Ghats.
- **Source of resources and** medicinal plants.
- **Critical for local economies.**

Threats and challenges

- Disappearance of traditional beliefs.
- Development activities.
- Overgrazing causing soil degradation.
- Invasive species: Exotic plants threatening native biodiversity, Eg. Eupatorium odoratum, Lantana camara and Prosopis juliflora.

5.3. ANNUAL GROUND WATER QUALITY REPORT 2024

Why in the news?

Ministry of Jal Shakti released the Annual Ground Water Quality Report for 2024, conducted by the **Central Ground Water Board (CGWB).**

Key Bodies in India's Groundwater Management

- **Central Ground Water Board (CGWB): Multi-disciplinary scientific organization** under Ministry of Jal Shakti.
  - Explores and monitors ground water.
  - Functions as **Central Ground Water Authority (CGWA).**
  - **HQ: Bhujal Bhawan, Faridabad, Haryana.**
- **Central Water Commission (CWC):** Key technical body for **water resource management.**
  - **Coordinates with state governments** for: Flood control, Irrigation, Navigation, Drinking water, Hydropower projects.
- **Central Pollution Control Board (CPCB): Implements Water (Prevention and Control of Pollution) Act,** 1974.
  - **Advises Central Government on:** Prevention of pollution, Control of pollution, Water quality improvement, Air quality improvement.

Key Findings on Groundwater Quality in India	
Category	**Findings**
Groundwater Usage	India is the **largest** groundwater user globally, with the **largest irrigated area**. 87% used for **agriculture**, 11% for **domestic use**.
Recharge Trends	Annual **recharge increased by 15 BCM**, while **extraction decreased by 3 BCM** since 2017.
Groundwater Extraction Categories	**Safe (<70%)**: Andhra Pradesh, Assam, Bihar, Maharashtra **Semi-Critical (70-90%)**: Tamil Nadu, Uttar Pradesh, Puducherry, Chandigarh **Critical (90-100%)**: None **Over-Exploited (>100%)**: Punjab, Rajasthan, Dadra & Nagar Haveli, Daman & Diu, Haryana, Delhi
Chemical Composition	**Main component:** Calcium-Bicarbonate type water **High chloride:** Rajasthan, Gujarat (natural formations) **Over-extraction:** Increases salinity due to concentration effects
Agricultural Suitability	**81% of samples** safe for irrigation **North-East India:** 100% excellent for irrigation **Concerns in some areas:** High Sodium Absorption Rate (SAR) and Residual Sodium Carbonate (RSC) levels
Regional Variations	**Clean water:** Arunachal Pradesh, Mizoram, Meghalaya, Jammu & Kashmir (**100% meeting standards**) **Problematic areas:** Rajasthan, Haryana, Andhra Pradesh **Salinization Trend:** Barmer & Jodhpur (Rajasthan)
Seasonal Trends	Monsoon recharge **improves water quality**, reducing Electrical Conductivity (EC) and fluoride levels.

Major Groundwater Contaminants in India

- **Nitrate, NO, (40% exceed limit):** Rajasthan, Tamil Nadu, Maharashtra are affected States. Cause: Excessive fertilizer use.
- **Fluoride, F:** Rajasthan, Haryana, Karnataka, Andhra Pradesh, Telangana are affected States.
- **Arsenic, As:** West Bengal Bihar Uttar Pradesh Assam Punjab are affected States.
- **Uranium, U:** Rajasthan (42%) Punjab (30%) are affected States. Cause: Groundwater overexploitations.
- **Salinity, EC, High EC levels:** Rajasthan Delhi Gujarat Haryana Punjab Telangana Andhra Pradesh Karnataka are affected States.

Key Factors behind Groundwater Pollution

- **Industrial waste discharge** containing heavy metals and chemicals.
- **Agricultural practices with excessive** fertilizers causing nitrate contamination.
- Urbanization leading to sewage leaks and landfill runoff pollution.
- **Climate change altering** rainfall patterns and hindering aquifer replenishment.
- **Fragmented institutional management** and outdated laws like the 1882 Indian Easement Act.

Steps Taken for Groundwater Management

- **Atal Bhujal Yojana (ATAL JAL):** Focuses on community participation.
- **Jal Shakti Abhiyan**: It expanded as "**Catch the Rain**" in 2021, covering all districts nationwide.
- **Mission Amrit Sarovar (2022)**: To create or rejuvenate 75 Amrit Sarovars in every district.
- **"Bhu-Neer" Portal**: Provides detailed information on the legal framework for groundwater extraction.
- **National Aquifer Mapping & Management Programme (NAQUIM):** CGWB maps major aquifers, creates sustainable use plans.

- **Heliborne Geophysical Surveys**: CGWB conducts high-resolution surveys in stressed areas.
- **Master Plan for Artificial Recharge**: For rainwater harvesting and recharge structures.
- **Model Bill for Groundwater Regulation**: Issued for states/UTs to regulate groundwater.
- **State Programs for Watershed Development:** Many states implement watershed programs that incorporate groundwater conservation, including through MGNREGA.

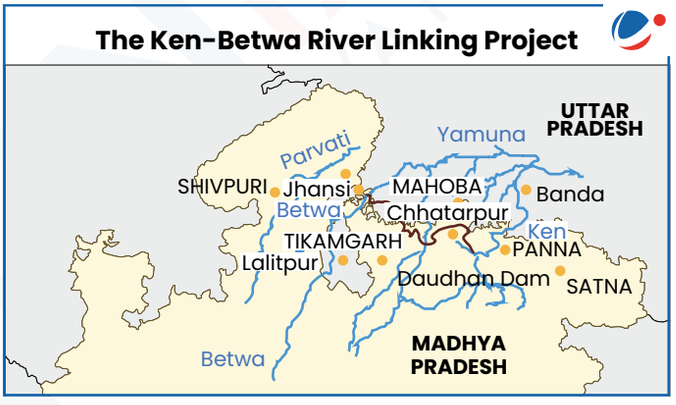
Way Forward

- **Institutional Reforms**: Create **National Water Commission (NWC) by merging** CWC & CGWB for integrated water management. **(Mihir Shah Committee).**
- **Legal Reforms**: Separate groundwater rights from land ownership.
- **Sustainable Practices**: Water-efficient agriculture, rainwater harvesting, artificial recharge, blue-green infrastructure.
- **Community Empowerment**: Support programs like Mission Kakatiya for conservation and irrigation management.

5.4. RIVER LINKING PROJECT

Why in the News?

Prime Minister laid the foundation stone of the **Ken- Betwa River Linking National Project.**



About Ken-Betwa Link Project

- **Overview:** Part of India's National River Linking Project, aiming to transfer surplus water from the Ken to the Betwa basin by 2030.
- **Location:** Covers Madhya Pradesh and Uttar Pradesh, targeting the drought-prone Bundelkhand region.

Key Components

- **Phase I:** Includes **Daudhan Dam in Panna Tiger Reserve** (77 m high) for irrigation and power generation and a **221 km Ken-Betwa Link Canal to transfer water**.
- **Phase II:** Involves Lower Orr Dam, Bina Complex, and Kotha Barrage to address water scarcity in Betwa basin.

National River Linking Project (NRLP)

- **Background:** Idea conceived by **Sir Arthur Cotton in 1850s** which was **then revived in 1972 by K.L. Rao,** then India's minister of power and irrigation.
- In 1982 **National Water Development Agency (NWDA)** was set up to study the feasibility of the river linking.
- **Objectives**: Aims to irrigate 30 million hectares, **generate 20,000-25,000 MW of power** to mitigate water-related issues.
- **Components**: Includes Himalayan River Development, Peninsular River Development, and Intra-State river links.

Significance of Ken- Betwa River Linking Project

- **Economic Growth:** Promoting agro-industries and tourism.
- **Flood and Drought Management:** Balancing the water distribution.
- **Renewable Energy:** To generate 103MW hydropower and 27MW solar power.
- **Drinking Water Supply:** Provide water for 62 lakh people.
- **Agriculture:** irrigate 10.62 lakh hectares in Bundelkhand.

Other Proposed Links

- **Himalayan**: Kosi-Mechi, Gandak-Ganga, Ghagra-Yamuna, Sarda-Yamuna
- **Peninsular:** Mahanadi-Godavari, Godavari-Krishna, Krishna-Pennar, Damanganga-Pinjal

Challenges of River Linking Projects

- **Environmental Impact:** Significant habitat disruption, deforestation, potential climate changes and rainfall deficit due to water transfers

- **Economic Concerns:** High implementation cost and maintenance expenses.
- **Social Implications:** Displacement, complex rehabilitation, and livelihood disruptions.
- **Technical Challenges:** Uncertain water availability and quality, sustainability concerns.

5.5. 150 YEARS OF INDIA METEOROLOGICAL DEPARTMENT (IMD)

Why in the news?

Prime Minister launched **Mission Mausam marking 150 years of IMD.**

About the Mission Mausam

- **Ministry:** Ministry of Earth Sciences (MoES)
- **Aim:** Making India "Weather-ready and Climate-smart" to mitigate climate change impacts.
- **Implementation:** Phase-I (2024-26), Phase-II (2026-31); by IMD, Indian Institute of Tropical Meteorology, and National Centre for Medium-Range Weather Forecasting.
- **Beneficiaries:** Public and sectors like agriculture, disaster management, defense, aviation, water resources.
  - Can improve forecast accuracy by 5-10%

History and Background of Meteorology in India

- **IMD Genesis**: **1875**, initially headquartered in **Calcutta**
- **Evolution post-1947**: Under **MoES;** first in India with message switching computer
- India was first developing country **with geostationary satellite (INSAT)**
- Provides cyclone warning services to **13 North Indian Ocean countries and SAARC nations**

Major achievements of the IMD

- **Weather Observations: Advanced from manual to Automatic Weather** Stations (AWS increased from 675 to 1,208).
- **Numerical Weather Prediction**: Provides forecasts up to 7 days with 15-day outlook.
- **Monsoon Predictions**: Perfected seasonal rainfall forecasting since 1886.
- **Disaster Preparedness**: Reduced cyclone deaths from 10,000 in 1999 to near zero in 2020-2024.
- **Telecommunications:** Established directorate in 1970; Delhi became Regional Hub.
- **Specialized Services**: For aviation, agriculture, energy, water resources.
- **Flood Meteorological Offices**: Provide river sub-basin Quantitative Precipitation Forecasts.

Challenges in front of IMD

- **Climate change**: Need improved systems for **unpredictable weather events.**
- **Grid resolution:** 12km×12km grid **hampers localized predictions.**
- **Early warning**: Accuracy for heavy **rainfall under 80%.**
- **Limited data networks**: Only 56 RS/RW stations compared to **China's 120.**
- **Monsoon unpredictability:** Tropical systems more **chaotic than mid-latitude weather.**
- **Instrument quality: No WMO-certified** Indian radiosondes.
- **Data gaps:** Limited glaciological studies despite **9,575 Himalayan glaciers.**

Way Forward

- **Better understanding** of physical processes for accurate predictions.
- **Three-dimensional Earth system observations** especially for monsoon.
- **Strengthening early warning systems** with hyper-local forecasts.
- **Improving last mile connection** between forecasters and users.
- **Leveraging AI and ML** for more precise weather predictions.

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5.6. INDIGENOUS HYDROGEN TRAIN ENGINE

Why in the News?

Indian Railway Minister announced development of world's most powerful **hydrogen fuel-run train engine with 1,200 horsepower.**

More about the news

- Only four countries (**Germany, France, Sweden, China**) have hydrogen trains (500-600 horsepower).
- **'Hydrail'** categorizes all hydrogen-powered rail vehicles.
- **Advantage over electric trains:** No need for expensive infrastructure like overhead cables and substations.

About India's Indigenous Hydrogen Train

- **Designed by**: Research, Design, and Standard Organization (RDSO), Lucknow
- **Manufactured by**: Integral Coach Factory, Chennai
- **Background:** "**Hydrogen for Heritage**" project announced in 2023
- **Budget 2023-24:** Allocated funds **for 35 hydrogen fuel cell trains**
- **Trial Route:** Jind-Sonipat, Haryana

About Hydrogen and its ecosystem

- Simplest, **most abundant element**; one proton and one electron.
- **Diatomic** molecular structure.
- Highly reactive, **forms hydrides with most elements.**
- **Can undergo oxidation/reduction**, forms acids with non-metals.
- Isotopes: **Protium, Deuterium, Tritium.**

Type of Hydrogen	Production Method	Energy Source	Greenhouse Gas Footprint
Green Hydrogen	Electrolysis	Renewable energy	**Minimal**
Pink Hydrogen	Electrolysis	Nuclear energy	**Minimal**
Yellow Hydrogen	Electrolysis	Mixed grid energy	**Medium**
Blue Hydrogen	Reforming/gasification + CCS	Natural gas or coal	**Low**
Turquoise Hydrogen	Pyrolysis	Natural gas	**Minimal to Low (solid carbon byproduct)**
Grey Hydrogen	Reforming	Natural gas	**Medium**
Brown Hydrogen	Coal gasification	Brown coal (lignite)	**High**
Black Hydrogen	Coal gasification	Black coal	**High**
Unassigned Hydrogen	Biomass gasification + CCS	Biomass	**Potentially Negative**

Global initiatives for Hydrogen production

- **World Bank's 10 GW** Clean Hydrogen Initiative
- **Clean Energy Ministerial (CEM):** International collaboration platform
- **CEM Hydrogen Initiative (CEM H2I):** Coordinated by IEA
- **Global Programme for Hydrogen in Industry (GPHI):** Launched by United Nations Industrial Development Organization (UNIDO) in 2021

India's initiatives for Hydrogen production

- **National Green Hydrogen Mission: Targets** 5 million metric tonnes production by 2030

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- **Green Hydrogen standard**: Notified August 2023
- **Guidelines for Pilot Projects** in Shipping and Steel Sector

Challenges in adoption of hydrogen as fuel

- **Cost**: Precious metals required as catalysts.
- **Extraction** requires significant energy.
- **Infrastructure** and technology requirements.
- **Safety concerns:** Highly flammable.
- **Storage complications:** Requires energy-intensive processes.

Way forward

- Continue government **support and incentives.**
- **Generate demand for production** and consumption through schemes like PM E-DRIVE Scheme.
- **Scale up** renewable energy capacity (125 GW target).
- **Pursue global collaborations** (e.g., MoU with Saudi Arabia).

5.7. SOLAR ENERGY IN INDIA

Why in the News?

India has achieved a historic milestone **by surpassing 100 GW of installed solar power capacity, with 100.33 GW installed as of January 2025,** and an additional 84.10 GW under implementation.

More on the news

- India has also witnessed growth in **hybrid and round-the-clock (RTC) renewable energy projects**, with 64.67 GW under implementation and tendered, bringing the total of 296.59GW.
- The National Institute of Solar Energy estimates **India's solar potential at 748 GW.**

Growth of India's solar sector

- **Capacity Increase:** 3450% from 2.82GW (2014) to 100 GW (2025)
- **Solar:** 47% of total RE capacity
- **Solar Installations in 2024**
  - **Utility scale**: 18.5 GW (approx. 2.8x increase from 2023)
  - **Rooftop Installation**: 4.59 GW (53% increase from 2023)
- **Solar module production capacity**: from 2GW (2014) to 60 GW (2024) (Target: 100 GW by 2030)
- **Top Performing States**: Rajasthan, Gujrat, Tamil Nadu, Maharashtra, Madhya Pradesh

Types of Solar Photovoltaic System

- **Grid-tied (on-grid system)**: Connected to the utility grid, Enables feeding Excess, power back into the grid thus eliminate the need for energy storage.
- **Grid-tied with battery backup**: It integrates solar panels, **a grid connection, and a battery storage unit, it can provide battery backup during abnormal grid conditions** and improve power quality.
- **Off-grid system: These systems use solar panels to convert sunlight into Direct Current,** which is stored in batteries, used in areas that lack access to a consistent **energy supply from the power grid.**

Significance of Solar energy in India

- **Supports India's climate targets under the Paris Agreement:** cutting emissions intensity by 45% and achieving 50% non-fossil fuel capacity by 2030.
- **Helps fulfill future energy needs:** India's energy use is 3 times the global average.
- **Enables rural electrification:** Solar energy can support off-grid power generation.

Factors behind growth of Solar Energy in India

- **Geographical advantage with abundant solar radiation:** ~300 sunny days per year and an average of 4-7 kWh/m²/day.

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- **Government schemes**: Like PM-KUSUM and PM Surya Ghar.
- **Financial support:** 100% foreign direct investment allowed, **Interstate transmission system (ISTS) fees are waived for solar and wind energy sales.**
- **Initiatives for indigenous manufacturing:** Eg. Production Linked Incentive (PLI) Scheme.
- **Consumer awareness**: Bureau of Energy Efficiency (BEE) launched **Standards and Labeling (S&L) programs**.
- **Boost RE consumption:** Renewable Purchase Obligation (RPO).
- **Building infrastructure: Eg. Green Energy Corridor Scheme.**
- **International cooperation through Solar Alliance.**

Issues constricting in further advancement of solar energy in India

- **Land acquisition challenges**: often conflicting with **food security and environmental interests.**
- **Infrastructure and grid integration constraints:** pose challenges to scalability.
- **Environmental concerns in mineral extraction:** leave **large scars in the landscape.**
- **Domestic manufacturing limitations:** Lack of R&D, modern development facilities etc.
- **Policy and regulatory hurdles: Delays in approvals** and land clearances.
- **Other issues:** High initial Investment; waste problem as solar panels etc.

Way forward

- **Modernize grid infrastructure:** smart grid technology investment.
- **Increase land-use efficiency: promote agrivoltaics** and **development of floating solar panels.**
- **Simplify policies: Harmonizing** state and central policies.
- **Promote technological innovations:** Advancements **in solar panel efficiency, energy storage etc.**
- **Develop a circular economy approach for solar technologies:** Establish a robust recycling ecosystem.
- **Boost domestic manufacturing**: Eg. "Make in India" can help boost the solar production further.

5.8. THERMAL POWER PLANTS AND SULPHUR DIOXIDE

Why in the News?

The Union Ministry of Environment, Forest and Climate Change (MoEF&CC) has issued **fourth extension for thermal power plants (TPP) to comply with Sulphur dioxide (SO2) emission norms.**

More about the News

- **Extension from 2022 notification:** Ministry extended deadlines for **installing Flue Gas Desulphurization FGD systems.**
- **2022 deadlines:** Category A by Dec 31, **2024;** Category B by Dec 31, **2025;** Category C by Dec 31, **2026.**
- **New compliance deadline**: Category A by Dec 31, **2027;** Category B by Dec 31, **2028;** Category C by Dec 31, **2029.**
- **Category definitions:**
  - A: Plants within **10km of NCR or cities with 1M+ population**
  - B: Plants within 10km of **critically polluted/non-attainment cities**
  - C: All **remaining plants**
- **Genesis:** First emission norms implemented in 2015.
- **2017:** Ministry of Power requested 7-year extension; **Supreme Court granted for 5 years.**

Health and Environmental Impacts of Sulphur Dioxide

- Respiratory issues, Cardiovascular impacts, Acid Rain, Material Damage, Visibility compromised due to haze.

Sources of the Sulphur dioxide

- **Natural:** Volcanoes (67%)
- **Anthropogenic:** Fossil fuel combustion, paper industry, metal smelting, petroleum refining, vehicle emissions

Government regulations to control Sulphur dioxide

- **Air Act, 1981**: Empowers CPCB and SPCBs to monitor/regulate emissions
- **Environment Protection Act, 1986**: Sets specific SO2 emission limits
- **National Ambient Air Quality Standards (NAAQS):** Controls pollutant concentrations
- **BS-VI Fuel Standards:** Regulates sulfur content in fuels
- **National Clean Air Programme (NCAP), 2019**: Controls pollution
- **SAMEER App and social media:** For monitoring implementation agencies

Way forward

- **Strict implementation:** No further deadline extensions.
- **Fuel Cleaning:** Coal beneficiation to remove sulfur before combustion.
- **Shift to clean energy:** Renewable sources and hydrogen through National Green Hydrogen Mission.

5.9. SOIL HEALTH CARD SCHEME

Why in the News?

The Soil Health Card Scheme (SHSC), **launched in 2015, completed 10 years of implementation.**

More on the News

- The scheme was introduced to assist state governments in **issuing soil health cards**, which has been integrated with **PM-Rashtriya Krishi Vikas Yojana (RKVY) Cafeteria scheme Since 2022-23.**
  - Launched in 2007-08, it is a **flagship scheme of the Department of Agriculture & Farmers' Welfare** to incentivize comprehensive agriculture development plans for more inclusive and integrated development of agriculture.

About the SHCS

- **Ministry:** Union Ministry of Agriculture and Farmers Welfare
- **Objectives:**
  - Issue **soil health cards** every three years.
  - Develop **soil test-based nutrient management.**
  - **Identify soil types** and improvement methods.
- **Features of Scheme:**
  - Soil Health Cards provide **information on nutrient status**
  - Village-level **Soil Testing Labs established.**
  - Soil Health Card Portal **created in multiple languages.**
  - **Implementation done by** Department of Agriculture of respective State /UTs.
  - **Technological advancements** including GIS integration and mobile app.

Enhancing Agriculture Through RKVY Cafeteria Scheme Initiatives

RKVY Cafeteria Scheme

Crop Diversification	Soil Health Management	Rainfed Area Development	Agro Forestry	Agricultural Mechanization
Encourages growing a variety of crops to enhance resilience	Focuses on maintaining and Improving soil fertility and health	Aims to enhance productivity in areas dependent on rainfall.	Integrates agriculture and forestry for sustainable land use	Promotes the use of machinery to improve farming efficiency

Parameters of SHC

- **Macro-nutrients:** Nitrogen, Phosphorous, Potassium, Sulphur.
- **Micro-nutrients:** Zinc, Iron, Copper, Manganese, Boron.
- **Others:** pH, Electrical conductivity, Organic carbon.

Benefits of SHCS

- **Free affordable soil testing:** Cost Effective Access, Wide availability.
- **Timely and accurate results:** Quick results, Precise analysis.
- **Optimized Fertilizer Use:** Cost Reduction, Prevents Over/Under Application.
- **Customized Nutrient Recommendations:** Personalized Plans, Data driven decision.

Key Achievements of the Scheme

- **24.74 crore Soil Health Cards** generated (as of February 2025).
- Increased coverage from **16 lakh to 53 lakh cards(2021-2025).**
- **Soil and Land Use Survey of India generated 1,987** village-level soil fertility maps for 21 States
- **8,272 Soil Testing Labs** set up.
- **₹1,706.18 crore** released to States/UTs.

Constraints with the Scheme

- **Quality and accuracy issues** in sample collection.
- Farmers' **difficulty in understanding recommendations.**
- **Lack of** physical and micro-biological indicators.
- **Inadequate testing infrastructure.**
- **Others:** Inadequate testing Infrastructure, lack of availability of recommended fertilisers and bio-fertilisers etc.

Way Forward

- **Improve sample collection** and testing practices.
- Provide **specialized training.**
- **Modernize** soil testing labs.
- **Create specialized bodies** for soil management.
- **Enhance coordination between agricultural officers and farmers,** development of Soil Health Index; reduction in subsidy for NPK to rationalize fertilizer usage, etc.

5.10. STUBBLE BURNING

Why in the news?

A parliamentary standing committee recommended **introducing a minimum support price (MSP) for paddy residue.**

More on the news

- The recommendations were made by the **Committee on Subordinate Legislation** which examined the **Commission for Air Quality Management (CAQM) in National Capital Region and Adjoining Areas** (Imposition, Collection and Utilization of Environmental Compensation for Stubble Burning) Rules, 2023.
- The rules were notified under the **CAQM Act, 2021**

About Stubble Burning

- Stubble burning is the practice of **setting fire to crop residues after harvesting, primarily in Punjab, Haryana, and Uttar Pradesh**.
- Farmers do this as it is **cheaper and helps with weed and pest management.**

Effects of Stubble Burning

- **Environmental Degradation:** Releases harmful pollutants like carbon dioxide, **methane, carbon monoxide, Nitrogen Oxide, Particulate matter.**
- **Reduces Soil Fertility:** Heat from burning residues **elevates soil temperature up to 42°C.**

- Harms microorganisms
- Leads to loss of essential nutrients

- **Human health:** May lead to **lung diseases** such as asthma, **COPD, bronchitis, and lung cancer.**

Challenges in controlling stubble burning

- **Technical and infrastructure Issues**: Inadequate harvesting technology, limited storage infrastructure, short window etc.
- **Regulatory Challenges**: Ambiguous definitions, unclear procedures etc.
- **Financial Barriers**: Insufficient subsidies and utilization frameworks etc.
- **Socioeconomic Concerns**: Lack of awareness and alternative farming practices etc.

Steps taken by government to reduce stubble burning

- **CAQM Framework**: In-situ and Ex-situ Crop Residue Management, Prohibition of stubble residue burning
- **Financial Support**: Assistance through Sub-Mission on Agriculture Mechanization
- **Promotion of Alternatives**: Bio Enzyme-PUSA, Happy Seeder machine etc.
- **State-level Initiatives: Eg**. Uttar Pradesh: "Parali Ke Badle Govansh Khaad, **Punjab:** Mobile apps like **i-Khet (for facilitating farmers to have access to the agriculture machinery**

Way Forward: Recommendations made by Parliamentary standing committee

- Establish a price system **similar to MSP for stubble.**
- Develop **technical and infrastructure support.**
- Improve **regulatory mechanisms.**
- **Incentivize** alternative agricultural practices.
- Create a **unified national policy** for bioenergy generation.

5.11. DRAFT SOLID WASTE MANAGEMENT RULES, 2024

Why in the News?

The Ministry of Environment, Forest and Climate Change (MoEFCC) has released the **Draft Solid Waste Management (SWM) Rules, 2024** for wider public consultations.

More on the News

- **Statutory Provisions:** These rules amend the SWM Rules of 2016, under the Environment Protection Act, 1986, with enforcement by **The Central Pollution Control Board (CPCB)** and **State Pollution Control Boards (SPCBs).**
- **Implementation Date:** Effective from October 1, 2025.

Key Features of Draft Solid Waste Management Rules, 2024

- **Monitoring and compliance:** central online registration by CPCB.
- **Circular Economy Focus: MoHUA** is an apex coordinating body.
- **Waste Segregation into biodegradable and non-biodegradable:** Safai karamcharis authorized to fine violators.
- **Extended Producer Responsibility (EPR):** Compensation based on "Polluter Pays" principle.
- **Agriculture Waste Management:** Local bodies, mandated to prevent burning of agriculture waste.
- **Processing Requirement:** Encourages on-site waste processing.

About SWM in India

- **Definition:** Includes garbage, trash, and refuse.
- **Categorization:** Waste types include Municipal, Hazardous, Electronic, Biomedical, Plastic, and Construction waste.
- **Current Status:** Generates over 62 million tons annually, with only 43 million tons collected and 12 million treated.

Solid Waste Management Challenges in India

- **Basic Service Issues:** Poor collection, limited waste separation, lack of trained workers, low public awareness, and insufficient disposal land.

- **Financial Constraints:** Budgetary issues at the local level lead to outdated practices.
- **Overlapping Jurisdiction:** Coordination issues between multiple agencies.
- **Technology Gap:** High cost and low awareness of the modern solutions (like blockchain and AI).

Consequences of Improper Waste Management Practices

- **Water Pollution:** Contaminates water sources
- **Air Pollution:** Releases harmful substances that contribute to the climate change
- **Soil Pollution:** Hazardous Waste in landfills can contaminate soil.
- **Ecosystem Disruption:** Toxins disrupt natural habitats.
- **Economic Consequences:** Increased cost of waste management due to the contamination

Key Initiatives for Promoting Effective SWM

- **India:** Smart Cities Mission, Swachh Bharat Mission (Grameen & Urban)
- **Global:** UNEP International Environmental Technology Centre (IETC) in Japan

5.12. URBAN AIR POLLUTION

Why in the News?

As per **World Cities Report 2024: Cities and Climate Action of UN-Habitat**, urban air pollution caused 6.7 million premature deaths in 2019, making it the top environmental risk factor for disease and death.

More on the News

- **6th Annual World Air Quality Report by IQAir:** New Delhi is the world's most polluted capital, with 9 out of 10 of the most polluted cities in India.

Reasons for urban air pollution in India

- **Meteorological Factors:** Low rainfall, stagnant winds, dust storms, temperature inversion
- **Agricultural Practices:** Stubble burning in Punjab and Haryana
- **Urban/Industrial Sources:** Construction dust, vehicle emissions, waste disposal
- **Additional Sources:** Biomass burning, firecracker use

Concerns and Issues arising because of air pollution

- **Health Impacts:** Respiratory and cardiovascular diseases
- **Economic Losses:** $36.8 billion annually (1.36% of GDP in 2019)
- **Environmental Damage:** Urban heat island effect, ecosystem degradation
- **Structural Impact:** Damage to landmarks like Taj Mahal

Steps Taken by the Government of India to Curb Air Pollution

- **Policy Frameworks:** National Clean Air Programme (NCAP), Graded Response Action Plan (GRAP), 2019, Commission for Air Quality Management (CAQM), 2021, Central Pollution Control Board (CPCB)
- **National Air Quality Index**
  - **Monitored pollutants**: PM10, PM2.5, NO2, SO2, CO, O3, NH3, Pb
  - Good (0-50), Satisfactory (51-100), Moderately Polluted (101-200), Poor (201-300), Very poor (301-400), Severe (401-500)
- **Transport Initiatives:** National Electric Mobility Mission Plan
- **Clean Energy Goals:** 50% non-fossil fuel electricity by 2030

Ways to curb urban air pollution in India

- **Urban Planning and Green Initiatives:** Green spaces and clean air zones.
- **Sustainable Transportation:** Enhancing public and non-motorized transport options.
- **Technological and Scientific Solutions:** Adoption of cleaner technologies, artificial rain via cloud seeding.
- **Waste Management**: Bioremediation and biomining to handle landfill waste.
- **Integrated Policy Approaches:** Airshed management, international cooperation to address pollution issues.

5.13. NATIONAL TURMERIC BOARD

Why in the news?

Recently, **Union Minister of Commerce and Industry** inaugurated the **National Turmeric Board (NTB)**.

- **Aim:** Provide leadership on turmeric matters, coordinate with **Spices Board and other agencies**
- **Headquarters: Nizamabad, Telangana**
- **Ministry:** Ministry of Commerce & Industry.
- **Composition**
  - **Chairperson** appointed by Central Government.
  - Members from the **Ministry of AYUSH, Departments of Pharmaceuticals, Agriculture & Farmers Welfare, Commerce & Industry of the Union Government.**
  - **Senior State Government** representatives from three states (rotation).
  - **Representatives from research institutions**, farmers, and exporters.
  - Secretary appointed by **Department of Commerce.**

Significance of the Board

- **Promote R & D** of new products.
- **Value addition for Turmeric related Products** for marketing abroad.
- **Creating awareness** about properties of turmeric.
- **Increase yield and boost logistics** and supply chain to foster trade into newer markets.
- **Ensure quality and safety standards** of turmeric production and exports

About Turmeric

- A rhizome known as the **"Golden Spice"**
- **Climatic Condition:** Grows in **tropical conditions (20-35°C, rainfall 1500+ mm)**
- **Soil:** Well-drained sandy or clay loam
- **Properties:**
  - **Contains curcumin with antioxidant** and anti-inflammatory properties
  - **Used for skin, respiratory, joint**, and digestive disorders
  - Natural **pH indicator**

Turmeric production in India

- **Area:** 3.05 lakh hectare with 30 varieties (2023-24)
- **Production: 70% of global output**
  - Telangana, Maharashtra, Tamil Nadu, Andhra Pradesh contribute 63.4%
- **Export**: **>62% share** of world trade
- **Leading markets:** Bangladesh, UAE, USA, Malaysia
- **GI Tagged Turmeric:**
  - **Maharashtra:** Sangli Turmeric, Waigaon Turmeric
  - **Tamil Nadu:** Erode Manjal
  - **Meghalaya:** Lakadong Turmeric

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5.14. NEWS IN SHORTS

5.14.1. India Submits Its Fourth Biennial Update Report (BUR-4) to UNFCCC

BUR-4 Updates the **Third National Communication (TNC)** and contains the **National Greenhouse Gas (GHG) inventory for 2020,** which is maintained by **Ministry of Environment, Forest and Climate Change**.

Key Highlights of report

- **GHG emissions:** Decreased by **7.93% in 2020 compared to 2019**
  - **Sector-wise Emissions:** Energy (75.66%) > Agriculture (13.72%) > Industrial Process and Product Use (8.06%) > Waste (2.56%)
- **Emission Intensity of GDP:** Reduced by 36% (Between 2005 to 2020)
- **Share of non-fossil sources:** Constitutes **46.52% of installed electricity generation capacity (October 2024)**
- **Generation of Carbon Sinks:** Additional carbon sink **of 2.29 billion tonnes of CO2** created through forest and tree cover (2005 to 2021).
- **Forest and tree cover**: Currently at **25.17% of country's total geographical area** and has consistently increase
- **India's Initiatives:** International Solar Alliance, Global Biofuel Alliance, Coalition for Disaster Resilient Infrastructure, Lifestyle for Environment (LiFe) Movement, PM-Surya Ghar, National Bio-Energy Programme, National E-Bus Programme.

5.14.2. MoEF&CC Notified Environment Relief Fund (Amendment) Scheme, 2024

Environment Relief Fund (ERF) Scheme Amendment amends the ERF Scheme 2008, Issued under Section 7A of Public Liability Insurance Act (PLIA), 1991.

- ERF provides immediate relief to victims of hazardous substance accidents.

Key Amendments

- **Administration:** Vests ERF in the **Central Government**
- **Fund Manager**: **Central Pollution Control Board (CPCB)** replaces **United India Insurance Company** Limited for five years (effective January 1, 2025)
- **Disbursement**: Fund Manager to develop online portal and disburse **funds per District Collector or Central Government orders.**
- **Investment:** ERF amount to be invested in public financial institutions and saving accounts.
- **Restoration of Environmental Damage:** Funds earmarked for damage restoration related to hazardous substances.
- **Fund accounts to be audited by independent auditor** appointed by Central Government from Comptroller and Auditor-General approved panel.

Key Amendments

- **Persons with direct and substantial connection** and interest in affected public property can also claim for restoration of property.
- It provides for **utilization of ERF towards** environmental damage restoration.
- **Increases insurance policy** coverage limit to ₹250 crore for single accident and ₹500 crore for multiple accidents.

5.14.3. Chhattisgarh First State to Adopt Green GDP

Chhattisgarh has linked forest ecosystem services with Green GDP

- This **connects environmental forest contributions** (clean air, water conservation, biodiversity) to economic progress.
- Forests cover 44% of Chhattisgarh's land, **helping mitigate climate change.**
- Forest products (tendu leaves, lac, honey, medicinal plants) **significantly support rural economy.**

About Green GDP

- **Genesis:** Coined in late 1980s to **better reflect environmental impacts in GDP**
- **Definition:** Environmentally adjusted **gross domestic product**
- **Calculation:** Green GDP = Net Domestic Product - (Cost of Natural Resource Depletion + Cost of Ecosystem Degradation)
- **Need:** Standard GDP overlooks environmental degradation, **often counting harmful activities (like deforestation) as economic gains.**

Green GDP Accounting Initiatives

- **SEEA (1993):** UN framework for standardizing environmental-economic statistics.
- **WAVES:** World Bank initiative integrating natural capital into economic statistics.

5.14.4. International Year of Glaciers' Preservation

Recently, **UN has declared 2025 as the International Year of Glaciers'** Preservation **whereas March 21 of each year will be celebrated as World Day for Glaciers**.

About International Year of Glaciers' Preservation

- **Co-facilitated by:** UNESCO and the **World Meteorological Organization (WMO).**
- **Objective:** To raise global awareness about glaciers' critical role in the climate system and hydrological cycle, and the impacts in Earth's cryosphere.
- **Significance of Glaciers:** More than **275,000 glaciers worldwide** cover approximately **700,000 sq. kms, accounting for ~70% of global freshwater.**

5.14.5. Yala Glacier in Himalayas Projected to Vanish by 2040s

Yala Glacier retreated by 680m with 36% area **reduction between 1974-2021.**

- Only Himalayan glacier in the **Global Glacier Casualty List (GGCL)**
- **Cryosphere:** frozen part of Earth including snow, ice, and frozen ground
- **GGCL Project** was launched in 2024 by Rice University, University of Iceland, Iceland Glaciological Society, World Glacier Monitoring Service, & UNESCO.

About Glacier Retreat

- Process of glaciers **shrinking in size & mass**
- Glaciers already lost: **Pico Humboldt Glacier**, Venezuela (2024), **Sarenne Glacier**, France (2023).
- **Dagu glacier (China)** expected to disappear by 2030

Initiatives to Protect Cryosphere

Global

- **UN Initiatives: 2025 and March 21 is designated** as International Year of Glaciers' Preservation and World Day for Glaciers respectively.
- **Other Initiatives:** Himalayan Adaptation Network by **IUCN & Living Himalayas Initiative by WWF.**

India

- **Provisions for multiproduct food irradiation units** under the India's **Pradhan Mantri Kisan SAMPADA Yojana (PMKSY).**
- **Indian National Centre for Ocean Information Services (INCOIS):** Monitors glacier- related events and issues **GLOF alerts.**
- **Missions to Arctic & Antarctic e.g. IndARC (2014).**

5.14.6. IPBES Releases Transformative Change Report

The Report is also known as **Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity**.

About Transformative Change

- **Definition**: Transformative Change involves **fundamental shifts in thinking, organizing,** and behaving.
- **Four Principles**: Equity and justice; pluralism and inclusion; respectful human-nature relationships; adaptive learning and action.

Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)

- **Genesis:** 2012.
- **Aim:** To strengthen the science-policy **interface for biodiversity and ecosystem services.**
- **Membership:** 147-member states. India is a **founding member.**
- **Secretariat**: It is not a UN body but UN Environment Programme provides **secretariat services to IPBES (Bonn, Germany).**

Five Strategies for Transformative Change for Global Sustainability

- **Conserve, restore, regenerate:** E.g., Community Forestry in Nepal and India.
- **Drive systematic change:** Target sectors like agriculture, fisheries, forestry, and urban development.
- **Transform economic systems:** Biodiversity needs $900 billion yearly, yet only $135 billion is invested; over 50% of global GDP ($58 trillion) relies on nature.
- **Transform governance**: E.g., Galapagos Marine Reserve shows ecosystem-based governance.
- **Shift views:** Promote human-nature interconnectedness via experiences, policy, and Indigenous knowledge.

Global Challenges in Transformative Change

- **Technology Access**: Barriers to clean technology and knowledge sharing.
- **Unsustainable Practices:** Harmful consumption and production methods.
- **Policy Inadequacies**: Insufficient policies and institutions to address current needs.
- **Economic Inequalities**: Disparities in wealth and resources globally.
- **Colonial Relation**: Historical power dynamics affecting modern interactions.

5.14.7. Global Status of Salt-Affected Soils report by FAO

FAO's first major assessment of soil 'Global Status of Salt-Affected Soils', report released

- **Salt-affected soils**: Defined by high levels of soluble salts or sodium ions, reducing soil fertility and plant growth.

Factors increasing salinization and sodification

- **Anthropogenic factors:** Inefficient agricultural practices, deforestation, over-pumping of water, and mining activities.
- **Natural factors:** Increased aridity due to climate change, permafrost thawing.

Key findings of the report

Global:

- **Coverage:** About 10% (1.4 billion hectares) of land is affected, potentially increasing to 24-32%.
- **Most affected countries:** Australia by area, Oman by percentage.

India specific

- **Coverage:** 2.1% (6.72 million hectares) of India's land is affected.
- **Most affected states:** Gujarat, U.P., Maharashtra, West Bengal, Rajasthan.
- 17% of irrigated land affected due **to brackish groundwater use.**
- Sustainable management practices include **mulching, breeding salt-tolerant plants, and bioremediation.**

5.14.8. Programme of Action for Landlocked Developing Countries for Decade 2024-2034

UN General Assembly adopted Programme of Action for Landlocked Developing Countries for Decade 2024-2034

Foundation and Priorities

- Built on **Vienna programme of action (2014-2024)** and **Almaty programme of action (2003)**
- **5 priorities:** Economic growth, regional trade integration, transport connectivity, climate resilience, implementation strategies

Key Targets

- 50% increase in labor productivity by 2034
- Develop economic zones and industrial parks
- Double global exports, reduce trade barriers
- Implement WTO Trade Facilitation Agreement
- Apply Sendai Framework for disaster risk reduction

About LLDCs

- 32 landlocked countries with 570 million people
- Two doubly landlocked: Liechtenstein and Uzbekistan

Challenges faced by LLDCs

- **Trade:** Higher costs and reduced competitiveness
- **Economy:** Limited trade and FDI (1.1% global exports in 2022).

5.14.9. Business4Land Initiative

The Business 4 Land Forum at COP16 of UNCCD highlights the private sector's key role in promoting sustainable land use.

- **UNCCD (United Nations Convention to Combat Desertification), 1994: The only legally binding international agreement** connecting environment, development, and sustainable land management.

About Business 4 Land Forum (2024)

- **Engagement:** UNCCD's primary platform for involving the private sector in sustainable land and water management.
- **Goals:** Restore 1.5 billion hectares of land by 2030, support Land Degradation Neutrality (LDN), and enhance drought resilience.

5.14.10. Plastic Pollution Treaty Negotiations Adjourn in Busan, South Korea

Countries **negotiating a legally binding instrument on plastic pollution** concluded their fifth session **without finalization of a treaty**.

- **The Treaty:** Mandated by a 2022 UN Environment Assembly resolution, aims to manage the full lifecycle of plastic.

Factors leading to non-finalization of treaty

- **Production Capping**: Opposition from countries like India and China to EU, Latin American, and African countries' demand for production caps.
- **Unclear Definition:** Ambiguities in defining microplastics, nanoplastics, primary plastic polymers, and recycling terms.

India's stance

- **Impact on Development**: India opposes measures on primary plastic polymer production due to development concerns.
- **Defining Scope:** Advocates for limiting the treaty to plastic pollution, avoiding overlap with other environmental agreements.
- **Phase Out Period:** Against setting phase-out dates at this stage.
- **Assistance:** Calls for considerations of national capabilities and support through financial, technical aid, and technology transfer to developing countries.

5.14.11. Champions of Earth Award, 2024

UNEP has announced Champions of Earth Award, 2024.

- Lifetime Achievement award was given to Madhav Gadgil for protecting **people and planet through research and community engagement** in Western Ghat.

About Champions of Earth Award

- **History:** Established in **2005,** it's the **United Nation's highest environmental award.**
- **2024 Focus**: Honors innovative solutions for **land and drought issues.**
- **Categories**: Policy leadership, Inspiration and action, Entrepreneurial vision, Science and innovation.

5.14.12. India Launched the World's First Green Steel Taxonomy

Taxonomy (or classification) was launched by the Union Ministry of Steel.

Key features of Green Steel Taxonomy

- **Definition of Green Steel:** Steel with CO2 emissions below 2.2 tonnes CO2e per tonne of finished steel.
- **Star Rating System:** Based on emission intensity, with thresholds reviewed every three years.
  - Five-star: < 1.6 tonnes CO2e,Four-star: 1.6 - 2.0 tonnes CO2e, Three-star: 2.0 - 2.2 tonnes CO2e.
- **Nodal Agency: National Institute of Secondary Steel Technology (NISST)** handles measurement, reporting, verification, and issues annual greenness certificates and star ratings.

Importance of Green Steel Taxonomy

- Supports ₹15,000 crore **Green Steel Policy**
- Enhances **global competitiveness**
- Promotes **low-carbon steel innovation**

Key Initiatives to decarbonize steel sector in India

- National Mission for Enhanced Energy Efficiency
- Perform Achieve and Trade scheme
- Green Hydrogen Energy Mission, National Solar Mission, etc.

5.14.13. Ratapani Wildlife Sanctuary Declared As 8th Tiger Reserve of Madhya Pradesh

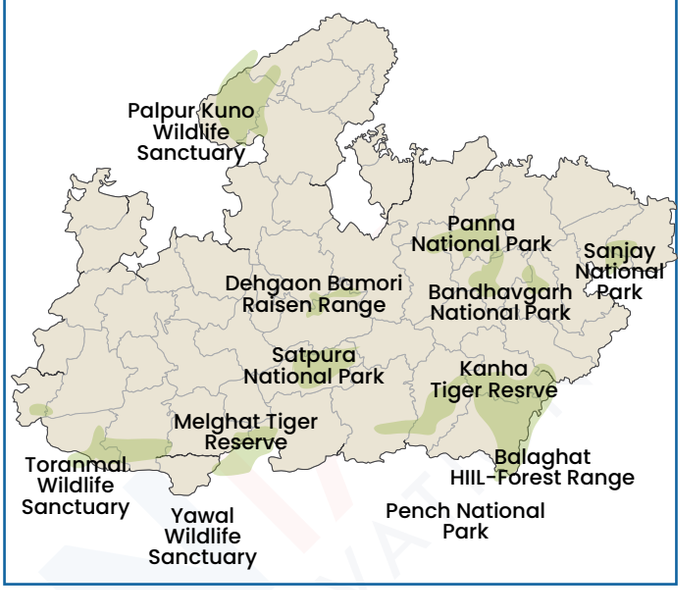
- **Existing Reserves of MP:** Includes Kanha, Satpura, Bandhavgarh, Pench, Sanjay Dubri, Panna, and Veerangana Durgavati.

About Ratapani Wildlife Sanctury

- **Location:** Raisen and Sehore districts, Madhya Pradesh.
- **Major Sites:** Bhimbetka Rock Shelters, Ginnourgarh Fort, POW camp, Keri Mahadeo, Jholiyapur dam.
- **Flora and Fauna**: Dry and moist deciduous forests, 55% teak; includes tigers, leopards, sloth bears, hyenas, spotted and sambar deer.

Indian Government efforts to protect Tigers: Project Tiger, Conservation Assured Tiger Standards (CA|TS), International Big Cat Alliance

Madhya Pradesh National Parks and Sanctuaries Map



Process of declaring Tiger Reserves in India

- **Legal Framework:** Notified by State Governments under Section 38V of the Wildlife (Protection) Act, 1972, advised by the National Tiger Conservation Authority (NTCA)
  - Proposal obtained from state
  - In-principle approval by NTCA.
  - Recommendation by NTCA after due diligence.
  - Then, the state government notifies the area as a Tiger Reserve

5.14.14. Translocation of Tigers

Madhya Pradesh to translocate 15 Tigers **to Rajasthan, Odisha and Chhattisgarh**

- Tigers from **Bandhavgarh, Panna, Kanha, and Pench** reserves will be moved under an **animal exchange programme.**
- This is the largest **big cat relocation from any state, driven by Madhya Pradesh's** highest tiger population (785).

About Inter-state Tiger Translocation Projects

- **Aims**: Reintroduce tigers to historical ranges where they've vanished or **boost existing populations for long-term survival.**
- **The first project in 2018** relocated two tigers **from Kanha and Bandhavgarh to Satkosia (Odisha)**, guided by the **National Tiger Conservation Authority (NTCA).**
- **Benefits of Translocation:** Ecological Balance, Human-animal Conflict Mitigation, Rewilding Landscapes
- **Concerns associated with Translocation:** Protests from local communities, Territorial disputes with existing Tigers, Poor Forest management such as prey augmentation, etc.

5.14.15. Hollongapar Gibbon Wildlife Sanctuary

Recently, the standing committee of **National Board for Wildlife** approved a proposal to carry out oil and gas exploration in the eco-sensitive zone of the **Hollongapar Gibbon Wildlife Sanctuary.**

Hollongapar Gibbon Wildlife Sanctuary

- **Location:** Jorhat district, Assam; **includes Dissoi Valley, Dissoi, and Tiru Hill Reserve Forests.**
- **Establishment:** 1997.
- **Significance:** Home to India's **only gibbons, the hoolock gibbons, and the Bengal slow loris, Northeastern India's only nocturnal primate, plus other primates** like Capped Langur and Rhesus Macaque.

5.14.16 Shikari Devi Wildlife Sanctuary

Government of India has designated areas around Shikari Devi Wildlife Sanctuary as **Eco-Sensitive Zones (ESZs).**

About Shikari Devi Wildlife Sanctuary

- **Location**: Middle Himalayas, **Mandi District, Himachal Pradesh.**
- **Named**: After goddess Shikari Devi, with a dedicated temple.
- **Features:** Includes Juni Khud stream, **recognised as an Important Bird Area, with alpine pastures and temperate deciduous forest; home to Asiatic Black Bear, Leopard, and Giant Flying Squirrel.**

5.14.17 Wetland Accredited Cities

Indore and Udaipur have become the first two Indian cities to be **recognized on the global list of wetland cities under the Ramsar Convention.**

- **Indore:** Sirpur Lake recognized for water bird congregation and being developed as a bird sanctuary.
- **Udaipur:** Surrounded by **five major wetlands: Pichola, Fateh Sagar, Rang Sagar, Swaroop Sagar, and Doodh Talai.**

About Wetland City Accreditation (WCA)

- **Voluntary accreditation system for** cities with significant natural or human-made wetlands
- Approved in **Uruguay during COP12 of Ramsar Convention (2015)**
- **Accreditation is valid for 6 years and** requires renewal based on six specific criteria

Significance of WCA

- **Promotes conservation and sustainable use** of urban and peri-urban wetlands
- Supports **socio-economic benefits for local populations**
- Helps implement the **Amrit Dharohar initiative of MoEF&CC**

6 Criteria for WCA Enlistment

- **Criterion 1**: Contains Ramsar Sites providing ecosystem services within city jurisdiction
- **Criterion 2:** Adopts measures for wetland conservation and ecosystem services protection
- **Criterion 3:** Implemented wetland restoration and/or management measures
- **Criterion 4:** Integrates wetland planning into urban land-use decisions
- **Criterion 5:** Promotes public awareness and local participation in wetland decisions
- **Criterion 6:** Establishes local committee for wetland management and Ramsar accreditation

5.14.18 Four More Wetlands Included Under the Ramsar Convention

Increased wetlands tally from 85 to 89, **making India highest in Asia and third globally, New wetlands added from Tamil Nadu, Sikkim, and Jharkhand.**

- **Tamil Nadu leads with 20 Ramsar sites, Sikkim and Jharkhand added their first Ramsar sites**

Ramsar Convention on Wetlands

- Intergovernmental treaty adopted in **Ramsar, Iran in 1971 (effective from 1975).**
- **Objective:** Provide framework for national and international wetland conservation.
- World Wetlands Day **celebrated on 2nd February.**

New Ramsar Sites

Sakkarakottai Bird Sanctuary (Tamil Nadu)

- **Location:** Near Gulf of Mannar, on the Central Asian Flyway.
- **Historical Significance**: Sakkarakottai Tank was dug in 1321 A.D. through Kudimaramattu (community participation).
- Hosts species like **Painted Stork, Black-headed Ibis, etc.**

Therthangal Bird Sanctuary (T.N.)

- **Location:** Near Gulf of Mannar, on the Central Asian Flyway.
- Home to species like **Painted Stork, Black-headed Ibis, Spot-billed Pelican etc.**
- Notable for the **Babul (Acacia nilotica) trees**.

Khecheopalri Wetland (Sikkim)

- Also Known as Wishing Lake, believed to fulfill wishes; **locally called Sho Dzo Sho ("Oh Lady, Sit Here").**
- Originally Kha-Chot-Palri, meaning "Heaven of Padmasambhava".
- Cirque-type wetland, **considered sacred by both Buddhists and Hindus.**

Udhwa Lake (Jharkhand)

- Named **after Saint Uddhava from Mahabharata, a friend of Lord Krishna.**

- Declared as Wildlife Sanctuary and **Important Bird Area (IBA).**
- Sanctuary has two water bodies i.e. **Patauran and Berhale.**
- Home to bird species like **House Swifts, Fishing Eagles, and Brahminy Kite.**

5.14.19 Inland Mangrove of Guneri

Gujarat has notified **"Inland Mangrove of Guneri" as its first Biodiversity Heritage Site, notified in accordance with the Biodiversity Act, 2002.**

About Inland Mangrove of Guneri

- Located 45km from **Arabian Sea and 4km from Kori Creek.**
- **Represents a rare inland ecosystem** unlike conventional mangrove sites.
- **One of only eight** such ecosystems worldwide.
- Hosts around **20 migratory and 25 resident avifaunal species.**

5.14.20 Sponge City

The emerging concept and construction **of "sponge cities"** is an effective approach to solving urban floods.

About Sponge city

- **Concept:** Sustainable urban development with features like flood control, water conservation, improved water quality, and ecosystem protection.
  - **Examples:** Green roofs, constructed wetlands, and increased tree cover.
- **Benefits:** Enhances air humidity, regulates microclimates, and lowers public health risks.
- **Global Examples:** Tirana's ring forest for air purification; Berlin's green roofs and vertical gardens

5.14.21 First-Ever Global Freshwater Fauna Assessment by IUCN

It is the first-ever **multi-taxon global freshwater fauna assessment.**

Key-findings

- **24%** of global freshwater **species face extinction risk.**
- Major hotspots include **Lake Victoria (Kenya, Tanzania, Uganda), Lake Titicaca (Bolivia, Peru), Sri Lanka's Wet Zone, and the Western Ghats (India).**
- **Crabs, crayfishes, and shrimps** are most at risk, followed by freshwater fishes; **4,294 of 23,496 species are highly threatened.**
- Areas with high water stress or **eutrophication don't necessarily have more threatened species than less affected areas.**

About International Union for Conservation of Nature (IUCN)

- **Genesis:** 1948
- **Secretariat:** Gland, Switzerland
- **Objective:** Provides the knowledge and tools that enable human progress, economic development and nature conservation to take place together.
- **Membership**: 1400+ (membership union that brings government and civil society organizations together with a global network of experts).

About Freshwater Landscapes

- **Status**: Home to 10% of all known species on Earth.
- **Significance**: Provides safe drinking water, livelihoods, flood control and climate change mitigation.
- **Threat Faced**: Pollution, Degradation, Overfishing and the introduction of invasive alien species.

5.14.22 Sustainable Nitrogen Management

The Food and Agriculture Organization (FAO) released a report on **sustainable nitrogen management** in agrifood systems, detailing nitrogen use, **its challenges, and recommendations for sustainability.**

Key Highlights of Report

- **Alteration in Nitrogen Cycle**: Humans add about **150 teragrams (Tg) of reactive nitrogen yearly to land via agriculture and industry**, increasing **environmental nitrogen loss.**
- **Nitrogen Loss**: This happens **through ammonia (NH3) and nitrogen oxide (NOx) emissions causing air pollution**.
- **Role of Agrifood Systems**: The livestock sector accounts for **one-third of human-related nitrogen emissions.**
- **Dual Impact of Nitrogen Usage**: Balanced use boosts **crop yields and prevents soil** degradation, **but overuse worsens global warming, air and water quality, and ozone depletion**.

Sustainable Nitrogen Management (SNM)

- It seeks to **minimize external nitrogen inputs and losses** and **increase recycling of nitrogen.**
- **Recommendations for SNM: Increasing Nitrogen Use Efficiency (NUE), Encourage Biological Nitrogen fixation, set national commitments** to reduce nitrogen pollution.

5.14.23 Kampala Declaration

The AU Summit adopted the 10-year Malabo Comprehensive **Africa Agriculture Development Programme (CAADP) Strategy and Action Plan**, along with the **Kampala CAADP Declaration, focusing on building resilient** and **sustainable agrifood systems in Africa.**

About Kampala Declaration

- The Kampala Declaration succeeds the 2014 **Malabo Declaration on agricultural growth and prosperity.**
- It will be implemented from **2026 to 2035.**
- It **outlines six commitments** to transform and strengthen Africa's agri-food system.

5.14.24 Global Water Monitor 2024 Report

Global Water Monitor Consortium released 'Global Water Monitor 2024 Summary Report' it outlines the **global water cycle's status, key trends, and major hydrological events.**

Water Cycle

- The water cycle involves water moving through solid, liquid, and **gas phases within Earth and its atmosphere.**
- Liquid water **evaporates, forms clouds, and returns as rain or snow.**

Key Findings (State of Water Cycle)

- In 2024, water-related disasters led to over **8,700 deaths, displaced 40 million people, and caused US$550 billion in damages**.
- Soil water varied regionally, with **dryness in South America and Southern Africa,** and wet conditions in West Africa.
- Global lake and reservoir storage **dropped for the fifth consecutive year**.

Impact of climate change on water cycle

- Climate change intensified the **water cycle by up to 7.4%.**
- Severe storms **increased due to warmer air holding 7%** more moisture per 1°C rise, boosting **precipitation intensity.**
- Droughts worsened as rising **temperatures increased evaporation, drying soils**.
- Sea-level rise from **thermal expansion and melting ice is acidifying oceans and impacting marine life.**

5.14.25 WEF Global Plastic Action Partnership (GPAP)

New members including **Angola, Bangladesh, Gabon, Guatemala, Kenya, Senegal & Tanzania joined GPAP.**

About Global Plastic Action Partnership

- **Launched**: In 2018 at the **World Economic Forum's Sustainable Development Impact Summit,** it supports the Platform for Accelerating the **Circular Economy and Friends of Ocean Action.**
- **Present members**: 25, including **Maharashtra State, India, with new members like Angola, Bangladesh, Gabon, Guatemala, Kenya, Senegal, and Tanzania**.
- **Objectives**: Aims to tackle plastic pollution by **uniting governments, businesses, and civil society to promote a circular plastics economy, reducing emissions and protecting ecosystems**.
- **Key activities**: Assists countries in **creating National Action Roadmaps and mobilizing**
- **investment for waste management.**
- **Impact of Plastic Waste:** Plastic waste significantly impacts the **environment, health, and economy.**

India's Initiatives for Plastic Waste Management

- **Plastic Waste Management Rules, 2016**: Talks about Extended Producer Responsibility
- **National Circular Economy Roadmap for reduction of Plastic in India**: launched in collaboration with Australia.

5.14.26 Global Energy Alliance for People and Planet (GEAPP)

The GEAPP and the International Solar Alliance (ISA) agreed to create **a $100 million fund for impactful solar energy projects.**

- **Additional Initiatives Announced**: Digitalization of Utilities for Energy Transition **(DUET)**, Energy Transitions Innovation Challenge **(ENTICE 2.0).**

About Global Energy Alliance for People and Planet (GEAPP)

- **GEAPP is a global initiative** to speed up **clean energy adoption** in developing nations.
- **Goals**: 1 billion people with energy access, **150 million green jobs, 4 billion tons of emissions avoided.**
- **Focus Areas:** Renewable energy solutions, reducing energy poverty, sustainable development.

5.14.27 Compressed Air Energy Storage (CAES) System

Recently, the **world's largest CAES facility commenced full operation in China.**

Compressed Air Energy Storage

- It uses sealed sites, like underground **mines or salt caverns, to hold compressed air.**
- Saves **electrical energy as potential energy.**
- Stores energy **off-peak, releases it during high demand.**

5.14.28 End-of-Life Vehicles Rules, 2025

Ministry of Environment, Forest & Climate Change (MoEFCC) **introduced Environment Protection (End-of-Life Vehicles) Rules, 2025.**

- Notified under **Environmental Protection Act, 1986, effective from April 1, 2025.**
- **End-of-Life Vehicles (EoLV):** Vehicles no longer registered, deemed unfit, or cancelled.

Key Highlights

- **Applicability**: Covers producers, owners, scrapping facilities, and **testing stations handling EoLV.**
- **Exception:** Excludes waste batteries, plastic packaging, tyres, used oil, and **e-waste under existing rules.**
- **Responsibilities of Producer:** Meet **Extended Producer Responsibility (EPR) via EPR certificates from RVSF.**
- **EPR certificate**: Issued by **Central Pollution Control Board via online portal** to RVSF.
- **Responsibilities of registered owner and bulk consumer:** Deposit **EoLV at designated points within 180 days.**
- **Implementation Committee**: Formed by Central Government, **led by CPCB Chairman, for rule enforcement.**

5.14.29 World's First Cryo-Born Baby Corals

World's **First Cryo-Born Baby** Corals Successfully Settled on the **Great Barrier Reef led by the Australian researchers**.

About Cryo-born coral

- Cryo-born corals are produced using **cryopreservation, freezing coral cells and tissues at low temperatures.**
- **Cryopreservation Process**: Cryoprotectants remove water from cells to prevent ice crystal **damage during freezing and support cell structures when thawed.**

Significance of the Breakthrough

- **Climate Change Resilience:** Aims to deploy heat-tolerant corals annually to **counter climate change effects.**
- **Selective Breeding:** Enables year-round breeding and repeated use of colonies, **overcoming the once-a-year natural spawning limit.**

About Coral Reefs

- **Corals, from the class Anthozoa** (phylum Cnidaria), are invertebrates forming reefs **via polyp colonies that secrete limestone skeletons**, relying on symbiotic algae (zooxanthellae).
- **Distribution:** Found in shallow, sunlit waters (16-32°C) between **30°N and 30°S latitude, typically at depths less than 50 meters.**
- **Threats to Coral Reefs:** Climate warming, coral mining, Aquarium trade, Destructive fishing practices, Overfishing, Ocean Acidification, Pollution.

Other Conservation Measures

India:

- **National Committee on Wetlands, Mangroves, and Coral Reefs (1986):** Advises on conservation.
- **Environment (Protection) Act, 1986:** Prohibits coral and **sand use for construction.**
- **The Zoological Survey of India (ZSI):** Used **Biorock or mineral accretion** technology to restore coral reefs.

Global:

- **CITES lists coral species in** Appendix II to regulate trade.
- **World Heritage Convention** designates coral reef sites for protection.
- **World's Largest Frozen Coral Repository:** The **Taronga Cryo Diversity** Bank holds trillions of sperm from 32 coral species, collected annually since 2011.

5.14.30 KaWaCHaM

Kerala has launched the **Kerala Warnings, Crisis, and Hazard Management System (KaWaCHaM)** for real-time disaster alerts.

About KaWaCHaM

- **Developed by**: **Kerala State Disaster Management Authority (KSDMA)** with **National Disaster Management Authority and World Bank** support under the **National Cyclone Risk Mitigation Project (NCRMP).**
- **Functions**: Offers hazard **assessment, alerts, and threat-based action** planning **for extreme weather like heavy rain.**

5.14.31 Calamity of Severe Nature

The Inter-Ministerial Central Team (IMCT) has declared **Wayanad landslides** as a **'calamity of severe nature'.**

Calamity of Severe Nature

- **Legal provision:** No specific criterion exists in the **SDRF or NDRF guidelines for declaring a natural calamity as severe.** The Central government decides based on the intensity, magnitude of losses, and IMCT recommendations•
- **Funding Support:** Additional funding from the NDRF is provided for a **"calamity of severe nature" beyond the state's SDRF balance.**

5.14.32 Garudakshi

Karnataka launched the '**Garudakshi**' online FIR system to **curb wildlife crimes.**

About Garudakshi

- **It is software** for an online FIR system, akin to the Police Department's, to report forest offences via mobile or email.
- **Developed** with the Wildlife Trust of India.

5.14.33 India's Coastline Recalculated

India's coastline has increased from **7,516 km in 1970 to 11,098 km in 2023-24, a 48% rise over 53 years.**

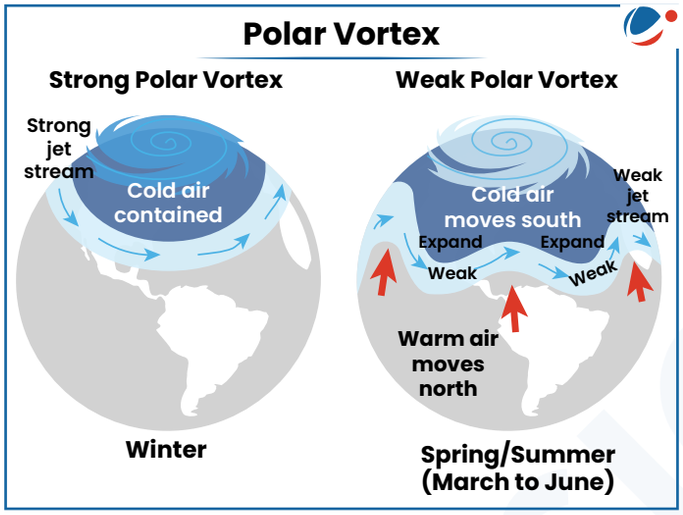
- Upward revision stems from a new methodology by the **National Maritime Security Coordinator, measuring complex coastal features like bays and estuaries, unlike older straight-line methods.**

Key Findings

- **West Bengal** saw the largest increase (357%), **Kerala the smallest (5%), while Puducherry's coastline shrank by 4.9 km.**
- Gujarat remains the state with the **longest coastline, followed by Tamil Nadu, now ahead of Andhra Pradesh (3rd).**

5.14.34 Polar Vortex

The extreme cold spell in the USA and Canada is linked to an arctic blast from the southward expansion of the polar vortex.



What is Polar Vortex?

- **Definition:** A large low-pressure, cold air mass swirling counterclockwise around Earth's poles.

Types

- **Tropospheric Polar Vortex:** Forms in the lower atmosphere (10-15 km).
- **Stratospheric Polar Vortex:** Forms higher (15-50 km), strongest in autumn, absent in summer.

Impacts of Polar Vortex

- **Arctic Blast:** Sudden cold air surge in the US when the vortex disrupts, spilling Arctic air southward.
- **Extreme Weather Events:** A weakened vortex shifts the jet stream, causing cold snaps and extreme weather in lower latitudes.
- **Ozone Depletion:** Cold air trapped in the vortex speeds up ozone loss, notably over Antarctica.
- **Impact on India:** A weakened vortex increases western disturbances, leading to heavy snow in the western Himalayas and colder northern India.

5.14.35 United Nations Human Settlements Programme (UN-Habitat)

C40 Cities & UN-Habitat have announced an **Urban Planning Accelerator** to **cut city emissions by 25% by 2050**

About UN Habitat

- Established in **1978**
- **Mission**: Promote socially and environmentally sustainable urban development.
- Focuses on ensuring **adequate shelter and sustainable city planning.**

About C40

- Global network of nearly **100 mayors addressing climate crisis**
- **Six Indian cities are members**: Bengaluru, Chennai, Delhi NCT, Jaipur, Kolkata, and Mumbai

5.14.36 Agri-NBSAPs

UN Biodiversity Conference (CBD COP 16.2) in Rome builds on COP16 momentum in Colombia where FAO launched Agri-NBSAPs with **Colombian government and Convention on Biological Diversity (CBD).**

About Agri-NBSAPs

- Assists governments in integrating **agrifood systems into National Biodiversity Strategies and Action Plans**
- Covers **all stages of food production** from farm to fork
- Provides framework under **Kunming-Montreal Global Biodiversity Framework to halt biodiversity loss by 2030**
- Provides a collective mechanism to **help governments build capacity, identify and implement strategic levers.**

Why should AFS be Integrated into NBSAPs?

- **Meeting KM-GBF Goals**: Over half of KM-GBF **targets related to agriculture.**
- **Cutting Emissions**: Agri-food systems produce **nearly 1/3 of global greenhouse gases.**
- **Protecting Food Security**: Biodiversity crucial for **food security, supporting pollination** and soil fertility.
  - Biodiversity decline threatens **3 billion lives and 75% of food crops dependent on pollinators**

Key Reforms Needed in Agrifood Systems to Protect Biodiversity

- **Shift to Plant-Based Diets**: Reduce animal agriculture's outsized impact.
- **Protect More Natural Land**: Preserve and restore whole ecosystems.
- **Adopt Nature-Friendly Farming:** Replace monocultures with polycultures.

5.14.37 F11 Bacteria

A study discovered F11 bacteria (Labrys portucalensis), Capable of degrading at least 3 types of **per- and polyfluoroalkyl substances (PFAS)**

About F11 Bacteria

- Aerobic bacteria from **Xanthobacteraceae family**
- Potential for **bioaugmentation in wastewater treatment**
  - Bioaugmentation involves **adding microorganisms to biodegrade pollutant molecules.**

About PFAS

- Toxic chemicals **resistant to grease, oil, water, and heat**
- Known as **'forever chemicals'** due to their nearly indestructible nature
- Used in **nonstick cookware, food packaging, waterproof and firefighting clothing**

5.14.38 Shift in Earth's Magnetic North

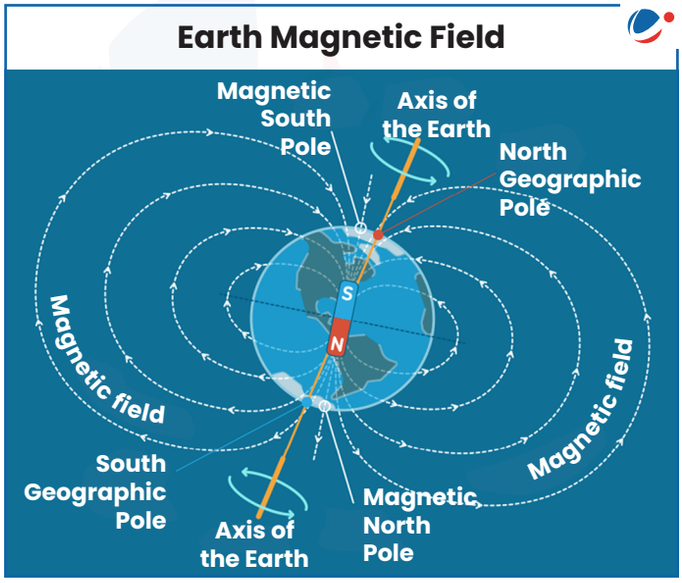
Earth's Magnetic North Pole is shifting toward Siberia, according to updated **World Magnetic Model (WMM).**

About WMM

- **Standard model** of Earth's core and crustal magnetic field
- Updated **every five years**
- Produced by **US National Geospatial-Intelligence Agency and UK Defence Geographic Centre**

Shift in Earth's Magnetic North Pole

- Magnetic North differs from **Geographic North**
- **First discovered in 1831** by James Clark Ross
  - Movement from Canada to Siberia has **accelerated, then slowed in recent years.**
- **Magnetic declination** – the angle between magnetic North and Geographic North – at a given location also changes over time.
- **Positions** of Magnetic **North and South Poles change gradually.**
- **Paleomagnetic records:** Earth's magnetic poles have reversed 183 times in the last 83 million years.



- **Potential Implications:** Errors in navigation systems, impact on migratory species

5.14.39 Draft Rules For 'One Nation, One Time'

The Department of Consumer Affairs has notified the **Draft Legal Metrology (Indian Standard Time) Rules, 2025, to standardize and mandate Indian Standard Time (IST)** across all sectors in India.

About Draft Legal Metrology (Indian Standard Time) Rules, 2025

- **IST becomes the mandatory time reference.**
- No entity can use time **other than IST for official/ commercial purposes, unless permitted by law.**
- **Government offices must adopt** time synchronization protocols like.
- Cybersecurity measures and alternative **references are prescribed for resilience.**
- **Authorized deviations (e.g., GMT) are allowed** for astronomy, navigation etc.

Longitude and Time

- **Longitude of a place** is its angular distance east or west of Prime Meridian which passes through Greenwich, England.
- **Earth completes one full rotation (360°) on its axis in 24 hours**, which means it rotates 15° per hour or 1° in 4 minutes.
- **Standard Meridian**: Countries use a longitude divisible by 7° 30′ for their time zone to align time differences with GMT in whole or half-hour multiples.

Significance of New Draft Rules

- Enhances national security.
- Ensures reliable services.
- Promotes accurate financial transactions.

About IST

- IST is based on the **82°30'E meridian at Mirzapur, maintained by CSIR-NPL.**
- It is **5 hours 30 minutes ahead of GMT (now UTC).**
- Assam's tea gardens use an informal **'Chaibagan' time, one hour ahead of IST, introduced by British tea companies for productivity.**

5.14.40 Mount Dukono

Recently, a **volcano erupted at Mount Dukono in Indonesia.**

About Mount Dukono

- It is one of Indonesia's 127 active volcanoes, standing at 1,087 metres above sea level, **located on Halmahera Island**

Other major volcanoes erupted recently in Indonesia

- **Mount Merapi:** Near Yogyakarta.
- **Mount Ruang:** A stratovolcano in the Sulawesi Islands.
- **Mount Lewotobi Laki-Laki:** On Flores Island.

5.14.41 Denali Fault

New research shows that three sites **spread along Denali Fault** were once a smaller united geologic feature.

- **Location:** In Alaska, USA, part of the Pacific Ring of Fire.

Fault and its Types

- **Definition**: A fault is a sharp break in Earth's crust.

Types

- **Normal fault**: Plates slide past each other vertically.
- **Reverse faults:** One plate slide under another, causing vertical offset.
- **Strike-slip faults:** Plates move horizontally past each other.
- **Oblique slip fault:** Combines vertical and horizontal movements.

5.14.42 Kilauea Volcano

Recently, **Kilauea volcano** erupted **on Hawaii's Big Island**.

- **Gas Emissions:** 99% are H2O, CO2, and SO2; 1% includes hydrogen sulfide, carbon monoxide, hydrogen chloride, and hydrogen fluoride.

About Kilauea volcano

- **Activity**: One of the world's most active volcanoes.
- **Location**: Southeastern Hawaii Island, U.S.
- **Features:** Summit has a collapsed caldera.
  - Slopes merge with Mauna Loa in Hawaii's Volcanoes National Park.

5.14.43 Caspian Sea

Environmental activists have highlighted the **Caspian Sea's rapidly declining water levels, with a loss of nearly 31,000 square km since 2005**.

About Caspian Sea

- It is the **world's largest enclosed water body**, bordered by **Kazakhstan, Azerbaijan, Russia, Turkmenistan, and Iran**, with Kazakhstan having the **longest coastline.**
- Its oil reserves are **estimated at 48 billion barrels.**

Reasons for declining water level: The decline is attributed to the climate crisis, excessive agricultural water use, and pollution from nuclear waste, industry, and poor urban planning.

5.14.44 Musi River

Musi River historic buildings have been kept on **World Monuments Watch 2025**

- **World Monuments Watch** is a biennial program to raise awareness and support **preservation of global cultural heritage.**

About Musi River

- **Origin: Ananthagiri hills, Rangareddy district** (Telangana), a key tributary of the Krishna River, feeding Osmansagar and Himayatsagar reservoirs.
- It consists of **two rivulets, Esi (8 km) and Musa (13 km), merging into the Musi River**, a vital water source for Hyderabad.

5.14.45 Mount Ibu

Indonesia's Mount Ibu, on the remote island of Halmahera, **erupted 1,000 times this month.**

About Mount Ibu

- **As an active volcano, Mount Ibu** lies in the Pacific Ring of Fire, a zone of frequent volcanic and **seismic activity along the Pacific Ocean.**
- Indonesia's numerous volcanoes result from converging **tectonic plates, including the Pacific, Eurasian, and Australian plates.**
- **Other Recent Eruptions in Indonesia:** Mount Sinabung and Mount Merapi.

5.15. TEST YOUR LEARNING

1. According to India State of Forest Report (ISFR) 2023, which of the following statements is correct?

(a) Forest Area and Forest Cover are synonymous.

(b) Tree cover includes patches larger than one hectareonly.

(c) Forest Cover refers to actual tree cover regardless of legal status.

(d) The report is published every five years by CPCB.

2. Arrange the following states in descending order of mangrove cover as per ISFR 2023:

1. Andaman & Nicobar Islands
2. Gujarat
3. West Bengal

Choose the correct option:

(a) 1 > 3 > 2

(b) 3 > 2 > 1

(c) 2 > 1 > 3

(d) 3 > 1 > 2

3. Sacred Groves, as per Supreme Court and IUCN data:

1. Are legally protected under the Forest Conservation Act.
2. May host endemic biodiversity like Living Root Bridges.
3. Are eligible for protection of community rights under FRA Act, 2006.
4. Are typically found only in North-Eastern India.

Select the correct answer:

(a) 2 and 3 only

(b) 1 and 4 only

(c) 2, 3 and 4 only

(d) All of the above

4. The Piplantri Model, often cited by the Supreme Court, is primarily associated with:

(a) Bamboo resource mapping.

(b) Community-led environment protection tied to **sustainable practices.**

(c) Sacred grove commercial tourism.

(d) Shifting cultivation awareness.

5. Which of the following invasive alien species pose a threat to sacred groves and native biodiversity in India?

1. Lantana camara
2. Eupatorium odoratum
3. Prosopis juliflora
4. Delonix regia

Select the correct answer:

(a) 1 and 2 only

(b) 1, 2 and 3 only

(c) 2 and 4 only

(d) All of the above

Mains Questions (2)

Q1. (150 words)

"Sacred groves are living archives of India's cultural and ecological heritage. Yet, they remain outside the formal conservation discourse." Discuss.

Q2. (250 words)

"Forest assessments like the ISFR reflect India's environmental progress, but must evolve to include quality, not just quantity, of green cover." Examine.

SOCIAL ISSUES

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6.1. MIDDLE-INCOME CLASS

Why in the News?

The new income tax structure raises the tax-free income limit to **₹12 lakh**, offering relief to India's middle-income class.

More on the News

- The **nil tax slabs rises from ₹7 lakh to ₹12 lakh**, along with a **₹75,000 standard deduction**.
- This relief aims to **boost disposable income, encourage spending, and fuel economic growth**.

About Middle Income Class (MIC)

- **Definition**
  - **No fixed definition** but is identified by groups like the **OECD** (earnings of $10-$100/day) and **People Research on India's Consumer Economy (PRICE),** household income of ₹5-30 lakh annually at 2020-21 prices.
  - They are **economically stable socio-cultural groups** with **low risk of poverty**.
- **Variations within MIC**
  - **Lower Middle Class**: Spends on **healthcare, education, and basic assets** like vehicles.
  - **Upper Middle Class**: Also invests in **luxury items** like computers and air conditioners.

Growth of Indian Middle-Income Class

- **Pre-Independence**: A small, educated, upper-caste elite **shaped by colonial policies.**
- **Post-Liberalization**: **1990s LPG reforms spurred MIC growth** through jobs in IT and services, especially in cities.
- **Future Outlook**: PRICE predicts the **MIC will rise from 31% in 2021 to 38% by 2031** and 60% by 2047.

Impact of the Changing Middle Class

- **Economy**
  - **Consumption Growth**: Rising MIC incomes will drive **$2.7 trillion in spending by 2030-31 (PRICE)**, focusing on apparel, personal care, etc.
  - **New Markets**: The urban MIC **attracts local and global firms**, fostering startups and services.
  - **Inclusive Growth**: A thriving MIC supports education, health, and anti-corruption efforts.
- **City Infrastructure**
  - **Tier II Cities**: Growing MIC wealth **boosts demand** in smaller cities.
  - **Growth Centres**: **Aspirational spending** spurs entertainment hubs like malls and cafes.
  - **Housing**: **Gated communities**, once elite, now spread to Tier II cities.
- **Social**
  - **Socio-Economic Gains**: A larger MIC improves institutions and outcomes.
  - **Values**: Wealth fosters democratic ideals, free speech, and environmental concern.

Challenges for the Middle-Income Class

- **Inflation**: Costly privatized healthcare and education strain budgets.
- **Unemployment**: Job instability threatens financial security.
- **Wage Stagnation**: Salaries lag behind economic growth.
- **Automation**: Tech displaces MIC jobs in IT, banking, and manufacturing.
- **Taxation**: High taxes and low benefits burden the MIC.
- **Debt**: Loans and credit card use rise, with **household debt at 38% of GDP in FY23**.
- **Social Barriers**: Patriarchy hinders women's career progress.

Reasons for Neglect

- **Self-Sufficiency Myth**: The MIC is seen as independent despite pressures.
- **Diversity**: Varied groups (**e.g., gig workers, public employees**) complicate targeted policies.
- **Low Political Voice**: Weak organization and voting reduce influence.
- **Policy Gaps**: Rural and business interests overshadow MIC needs.

AHMEDABAD | BENGALURU | BHOPAL | CHANDIGARH | DELHI | GUWAHATI | HYDERABAD | JAIPUR | JODHPUR | LUCKNOW | PRAYAGRAJ | PUNE | RANCHI

Conclusion

Empowering the MIC demands **tax relief, housing solutions, and robust job policies**. A **stakeholder-driven plan** is key to addressing vulnerabilities, ensuring financial stability, and sustaining their economic and social contributions.

6.2. FEMALE LABOR FORCE PARTICIPATION IN INDIA

Why in the News?

The Economic Advisory Council to the Prime Minister (EAC-PM) has released a working paper highlighting a **dramatic increase** in female Labor Force Participation Rate (LFPR).

Key Findings

- **Rural LFPR**: Increased from **24.6% (2017-18)** to **47.6% (2023-24)** (**~69% growth**).
- **Urban LFPR**: Rose from **20.4% to 25.4%** (**~25% growth**).

$$\text{LFPR} = \frac{\text{number of employed persons + number of unemployed persons}}{\text{total population}} \times 100$$

- **Regional Variations**: Lower LFPR in **Bihar, Punjab, Haryana**; higher in **northeastern and southern states**.

Factors Influencing Female LFPR

- **Age**: Rises between ages 20-30, peaking during 30-40 years, and declining sharply thereafter (Bell shape curve)
- **Marriage**: Reduces female LFPR, especially in urban areas, due to **household responsibilities**.
- **Parenthood**: Presence of children under 14 reduces LFPR, particularly for women aged **20-35** in urban areas.

Reasons for Low Participation of Women in the Workforce

- **Safety Concerns**: Workplace sexual harassment cases rose from 402 (2018) to 422 (2022) (NCRB).
- **Double Burden**: Women's unpaid care work contributes 3.1% to GDP, compared to men's 0.4% (Economic Survey 2024).
- **Education**: 37.94% of women stay out of the workforce to pursue education (PLFS).
- **Digital Divide**: Only 33% of women in India use the internet (NFHS-5).
- **Social Protection**: Women comprise 52.7% of 287 million registered unorganized workers (eShram database, 2022).
- **Increased Household Income**: Rising income leads to women prioritizing domestic non-market work over market work (International Labor Organisation).

Government Steps to Enhance Female Labor Force Participation

- **Survival and Education of Females: Beti Bachao Beti Padhao Scheme** and **National Education Policy (NEP) 2020**
- **Safe and Convenient Accommodation**: E.g., Working Women Hostel
- **Support for Women Affected by Violence**: **One Stop Centre (OSC)** and **Women Helpline**
- **Equal Opportunity and Promoting Work Environment**: Includes maternity leave (26 weeks), crèche facilities, and **Sexual Harassment of Women at Workplace Act, 2013.**
- **Economic Empowerment**:
  - **Mahila Shakti Kendra (MSK)** empowers rural women via community participation.
  - **NAMO Drone Didi**, distributed drones to 15,000 women SHGs for agricultural rentals.
- **Other: Codification of Labor Laws** (Wages, Industrial Relations, Social Security, Occupational Safety, Health and Working Conditions), etc.

Way Ahead for Women's Workforce Participation

- **Social Norms & Education**: Promote girls' education, especially in STEM.
- **Safety & Infrastructure**: Ensure safe streets, transport, and childcare. E.g. Mobile crèches in Burkina Faso
- **Bridging the Digital Divide**: Enhance digital literacy and internet access. E.g. Google's Internet Saathi
- **Wage Gap**: Implement equal pay and flexible work policies.
- **Formalizing the Informal Sector**: Integrate women into the formal economy.

6.3. DIGITAL CONTENT CREATORS (DCC)

Why in the News?

UNESCO's "Behind the Screens" survey highlights the growing influence of **Digital Content Creators (DCCs)** but questions their credibility.

About Digital Content Creators (DCCs)

- **Definition:** Individuals creating and sharing digital content across platforms like YouTube, Instagram, and TikTok.
- DCCs play a crucial role in the broader **Creator Economy (or Orange Economy)**, includes cultural and creative industries producing goods, services, and content rooted in cultural or artistic origins.
  - Globally, the creative economy generates **over $2 trillion annually (Creative Economy Outlook 2024)**
    - In India, it is valued at **$30 billion.**

Risks & Implications

- **Social & Ethical Risks:**
  - **Misinformation:** 62% DCCs lack systematic fact-checking.
  - **Privacy Violations:** E.g., Cambridge Analytica scandal.
  - **Algorithmic Amplification:** Focus on popularity promotes sensationalism.
  - **Training Gaps:** Limited knowledge of rights, laws, and ethics.
- **Regulatory Challenges:**
  - No unified framework: multiple agencies like MeitY and TRAI involved.
  - Jurisdictional conflicts and overlaps.
- **Economic Risks:** Financial losses for traditional media due to unequal bargaining power.

Ways to Mitigate Risks Posed by DCC

Promote Media Literacy	Implement Data Protection	Implement Data Protection	Promoting Transparency in Advertising	Encourage ethical Content Creation
E.g. Google News Initiative provides training and tools for journalists and content creators to verify information.	**E.g.** General Data Protection Regulation (GDPR) (EU) and India's **Digital Personal Data Protection Act, 2023**.	**E.g.** General Data Protection Regulation (GDPR) (EU) and India's **Digital Personal Data Protection Act, 2023**.	**E.g.** Advertising Standards Council of India's (ASCI) guidelines for influencers.	**E.g.** IT Rules 2021 promoting trust and accountability and **UNESCO's** Media and Information Literacy (MIL) Program

The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021

- **Purpose:** To govern digital intermediaries, social media platforms, online gaming intermediaries, and digital media publishers.
- **Key Provisions:**
  - **Social Media Platforms:**
    - Prohibit unlawful content (defamatory, obscene, and harmful)
    - Grievance Officer to resolve complaints in **15 days** (urgent cases: **72 hours**)
  - **News Publishers:**
    - Follow **Journalistic Conduct Norms** and **Programme Code** under the **Cable Television Networks Regulation Act, 1995.**
    - Prohibit publishing content banned by law.

6.4. SOCIAL MEDIA ADDICTION IN CHILDREN

Why in the News?

Australia passed the **Online Safety Amendment (social media Minimum Age) Bill 2024,** banning social media for children under 16.

Key Provisions

- **Minimum Age Requirement:** Platforms must prevent users under 16 from creating accounts.
- **Provider Responsibility:** Companies are accountable for enforcing age restrictions.

Reasons for Child addiction to social media

- **Peer Influence:** Validation through likes and comments.
- **Instant Gratification:** Dopamine release fosters addictive behavior.
- **Parental Gaps:** Busy parents inadvertently create "iPad kids."
- **Escapism:** Social media is a distraction from real-world issues.
- **Algorithms:** Personalized content keeps children engaged longer.

Arguments in favour of Ban	Arguments against ban
Cyberbullying: Leads to anxiety and depression **Health Issues:** Excessive screen time disrupts sleep and physical activity **Academic Impact:** Reduces focus and learning **Social Skills:** Impairs real-world interactions **Risky Trends:** Viral challenges causing harm **(e.g., "Blackout Challenge", "Devious Lick"** (stealing)**).**	**Socialization:** Helps in learning and collaboration. **Enforcement Issues:** Age bans can push children to unsafe spaces. **Impracticality:** Maturity varies; age limits don't guarantee readiness. **Platform Improvement:** Safer designs are better than bans. **Resilience Building:** Exposure helps children navigate risks.

Government Initiatives to Protect Children Online

- **IT Act, 2000 (Section 67B):** Strict action against child sexual abuse content.
- **Digital Personal Data Protection Act, 2023:** Requires parental consent for children under 18.
- **The National Commission of Protection of Child Rights (NCPCR):** Online complaint system for child protection.

Country	Policy/Regulation	Details
United States	Children's Online Privacy Protection Act (COPPA) (1998) & Children's Internet Protection Act (CIPA) (2000)	Parental consent for data collection; restricts content in schools/libraries.
European Union	General Data Protection Regulation (GDPR)	Parental consent required for processing personal data under 16.
UK	Online Safety Act (2023)	Enforces age restrictions on platforms like Facebook, YouTube, and TikTok.

Way Ahead

- **Safety-by-Design:** Privacy by Default **(e.g., UK's Age-Appropriate Design Code)** and **AI Content Moderation** (detect and remove harmful content automatically)
- **Regulations:** Hold companies accountable for safer platforms **(e.g., Meta's 13+ age limits)**.
- **Education & Skills:** Promote digital literacy for children and parents **(e.g., Kerala's Digital De-Addiction Centers)**
- **Parental Involvement:**
  - Set up accounts together with privacy controls.
  - Limit screen time and review activity reports.
  - Teach children to protect personal information and block harmful interactions.

6.5. INDIA'S DIGITAL HEALTH

Why in the News?

World Economic Forum's (WEF) **'India Can Be a Global Pathfinder in Digital Health'** highlighted India's role in shaping a resilient global digital health ecosystem.

More on the News

- India is bridging **urban-rural healthcare gaps** with **telemedicine, electronic health records (EHRs), and AI diagnostics.**
- **Robust DPI and private innovation** position India as a leader in adaptable healthcare solutions.

What is Digital Health?

- **Definition**: WHO describes digital health as **using digital tech to improve health knowledge and practices.**
- **Components**:
  - **Applications**: E.g., EHRs, telemedicine, wearables, and health data systems.
  - **Technologies**: E.g., AI/Big Data for patterns, Internet of Medical Things, and Augmented Reality for procedures.

Prominent Features of India's Digital Healthcare Highlighted by WEF

- **Interoperability and Standardization**: **E.g., Ayushman Bharat Digital Mission** (ABDM) links providers and patients with Unique Health IDs. **Other examples**: CoWIN, U-Win, Aarogya Setu, e-Hospital, etc.
- **Public-Private Collaboration**: **E.g., National Digital Health Mission's** (NDHM) **Health Facility Register** (HFR) standardizes data across facilities.
- **Affordability and Accessibility**: **E.g., e-Sanjeevani** aids remote areas with telemedicine.
- **Global Influence**: **E.g., India's digital health infrastructure** is ideal testing ground for global health solutions.

Concerns Associated with Digital Healthcare

- **Lack of Standardization**: Digital cards **(e.g., ESIC, PM-JAY)** lack uniformity, complicating data migration.
- **Equity and Access**: **E.g., National Health Authority** (NHA) reports 30% of healthcare institutions lack connectivity, impacting care.
- **Privacy and Security**: **E.g., AIIMS 2022 cyber-attack** affected 4 crore patients' records.
- **Algorithmic Bias**: **E.g.,** AI in US favored white patients over Black due to cost-based bias.

Conclusion

India's digital healthcare has **potential to boost accessibility and efficiency**. Enhanced policies (e.g., cybersecurity), infrastructure (e.g., BharatNet, Blockchain), public-private partnerships, and tech progress could make it a global digital health model for others to follow.

6.6. MANUAL SCAVENGING

Why in the News?

The Supreme Court sought an action report on its directions in the **Dr. Balram Singh v. Union of India & Ors (2023) case** to **eradicate manual scavenging.**

Directions in the Dr Balram Singh V. Union of India & Ors case

- **Rehabilitation of Sewage Workers:** Provide Employment, education, and skill training for next of kin.
- **Enhance Compensation:** Sewer deaths compensation shall be raised to ₹30 lakh and in disability cases to ₹20 lakh.
- **Conduct Comprehensive National Survey:** To identify manual scavengers within one year.
- **Training and Education Modules:** NCSK, NCSC, NCST, and Union government to coordinate for modules under the **Prohibition of Employment as Manual Scavengers and their Rehabilitation (PEMSR) Act, 2013**

About Manual Scavenging

- **Definition (PEMSR Act, 2013):** The practice of manually cleaning, carrying, or handling human excreta from insanitary latrines, open drains, or pits.

- **Ban:** Officially banned since 1993 under the **Employment of Manual Scavengers and its Prohibition Act, 1993.**
- **Progress:** As of July 31, 2024, 732 out of 766 districts reported as manual scavenging-free.

Factors Sustaining Manual Scavenging

- **Underreported Data:** Social stigma leads to underreporting as workers hide their identity during official manual scavenging surveys.
- **Cultural Resistance:** Caste prejudices support manual scavenging
- **Lack of Enforcement:** Weak implementation of laws allows violations
- **Poor Sewer Design:** Sewer designs prevent mechanized cleaning
- **Lack of Regulation:** Absence of safety measures and equipment

Government Steps to End Manual Scavenging

- **Legislative Measures:**
  - **Every offence** under **PEMSR Act, 2013** is a cognizable and non-bailable offence.
  - **Other:** Protection of Civil Rights Act, 1955; SC/ST (Prevention of Atrocities) Act, 1989, etc.
- **Schemes:**
  - **NAMASTE Scheme (2023):** Ensures safety, dignity, and rehabilitation for hazardous sanitation workers.
  - **Swachh Bharat Mission (Urban 2.0):** Promotes sanitation through mechanization.
- **Dedicated Institutions:**
  - **National Commission for Safai Karamcharis (NCSK):** Established to address the issues of safai karamcharis.
  - **National Safai Karamchari Financial Development Corporation (1997):** Supports safai karamcharis through loans and rehabilitation.

Way Forward

- **Implementing suggestion of National Human Rights Commission**
  - Clarify the difference between sanitation workers and manual scavengers under **2013 Act.**
  - **Empanelment & Regulation** of de-sledging market operations.
  - Provide safety equipment and conduct workshops for workers.
- **Promoting Technological Intervention: E.g., Kerala's Bandicoot robot)**
- **Other:** Upgrading Infrastructure, conduct Periodic surveys to identify manual scavengers, etc.

6.7. SWACHH BHARAT MISSION-GRAMEEN (SBM-G)

Why in the News?

The **Standing Committee on Water Resources** released a report evaluating the Swachh Bharat Mission-Grameen's implementation.

About Swachh Bharat Mission-Grameen

- A **centrally sponsored scheme** launched in 2014 to ensure full sanitation coverage in rural areas.
- **Objectives**:
  - **Phase-I (2014-2019):** Achieve **Open Defecation Free (ODF)** status by October 2, 2019, Mahatma Gandhi's 150th birth anniversary, by providing toilets to all rural households.
  - **Phase-II (2019-2025):** Started in 2020 to ensure **Sampoorn Swachhata**, focusing on universal access to **household toilets and effective waste management**, aiming for **ODF Plus Model villages**.
    - **ODF Plus Model covers:** ODF Sustainability, Solid Waste Management, Liquid Waste Management, Visual Cleanliness
- **Key features:**
  - **Funding**: 60:40 Centre-State ratio; 90:10 for North Eastern States, Himachal Pradesh, Uttarakhand, and Jammu & Kashmir UT; 100% Centre-funded for other UTs.
  - **₹12,000 incentive**: For building individual household latrines (IHHL) for BPL and specific APL households (SC/ST, disabled, landless laborers, small/marginal farmers, women-headed households).

- **Jan Aandolan model**: World's largest mass movement for behavioral change.
- **Swachh Survekshan Grammen (SSG):** Annual third-party survey.
- **Swachhata Hi Seva (SHS) 2024:** Campaign to boost collective cleanliness efforts.

Types of ODF Plus Villages		
Aspiring ODF Plus Village	**Rising ODF Plus Village**	**Model ODF Plus Village**
➤ Maintains ODF status ➤ Features either Solid Waste Management or Liquid Waste Management	➤ Maintains ODF status ➤ Includes both Solid Waste Management and Liquid Waste Management	➤ Maintains ODF status ➤ Includes both Solid and Liquid Waste Management ➤ Shows visual cleanliness (little litter, minimal stagnant wastewater, no public plastic waste dumps) ➤ Exhibits ODF Plus info and educational messages

Components of SBM (Grameen)-II		
Construction of Infrastructure	**Solid and Liquid Waste Management (SLWM)**	**Information, Education and Communication (IEC) and Capacity Building**
➤ Individual household latrines (IHHLs) ➤ Community Sanitary Complexes (CSCs)	➤ Biodegradable Waste Management (BWM) ➤ GOBARdhan initiative ➤ Plastic Waste Management (PWM) ➤ Greywater Management (GWM) ➤ Faecal Sludge Management (FSM)	➤ Menstrual Hygiene Management (MHM) ➤ 'Swachhata Samachar' monthly newsletter ➤ 'Swachhagrahis' trained in Community Approaches to Sanitation (CAS) ➤ Swachhata Hi Seva (SHS) campaign ➤ Swachhata Pakhwada

Progress and Achievements

- **Phase-I Impact**:
  - By October 2019, all villages in 36 States/UTs declared ODF.
  - Rural sanitation rose from 39% (2014) to 100% (2019).
  - **Health**: Avoided 3 lakh diarrheal deaths in 2019 vs. 2014 (WHO).
  - **Nutrition/Productivity**: 58% higher child wasting in non-ODF areas (Bill & Melinda Gates Foundation).
  - **Women's safety**: 93% feel safer with home toilets (UNICEF).
  - **Savings**: ODF village families saved ₹50,000 yearly on health costs (UNICEF).
- **Phase-II Achievements**:
  - 95% of villages (5,57,468/5,87,529) declared ODF Plus.
  - **SBM-G Dashboard (March 2025):**
    - **ODF-Plus Model States/UTs**: Sikkim, Lakshadweep.
    - **ODF-Plus States/UTs:** Ladakh.
    - Over 5 lakh villages have solid and liquid waste management systems.

Challenges in Implementation (Standing Committee)

- **Slow progress**: Only 35% SWM, 57% LWM, 56% ODF Plus, 31% IHHL, and 8% CSC targets met in 5 years.
- **Fund underutilization**: Just 19.61% of FY 2024-25 budget used.
- **Extra Budgetary Resources (EBR):** 9-17% of funds spent on interest, reducing availability.
- **Low incentive**: ₹12,000 for IHHL (based on 2014 rates) deemed insufficient.
- **SSG-2023 issues**: Small sample size, questionable credibility, and methodology flaws.
- **Regional gaps**: States like Manipur, Meghalaya, Jharkhand, Punjab, and Nagaland lag in SWM.
- **Other issues**: Limited sanitation vehicles, low PWMU coverage, no new baseline survey.

Recommendations (Standing Committee)

- Speed up implementation with State/UT coordination to resolve issues.
- Ensure timely, full budget use and plan fund allocation wisely, avoiding EBR reliance.
- Revise IHHL incentive based on current inflation.
- Create a robust monitoring system for ODF Plus functionality.
- Enhance waste management by increasing sanitation vehicles, plastic waste linkages, and functional PWMUs.

AHMEDABAD | BENGALURU | BHOPAL | CHANDIGARH | DELHI | GUWAHATI | HYDERABAD | JAIPUR | JODHPUR | LUCKNOW | PRAYAGRAJ | PUNE | RANCHI

6.8. JAL JEEVAN MISSION

Why in the News?

The Jal Jeevan Mission (JJM) has been extended to 2028 with increased funding as announced in the Union Budget 2025.

About Jal Jeevan Mission (JJM)

- Launched in 2019 by restructuring the **National Rural Drinking Water Programme (NRDWP),** targeting tap water for ~16 crore rural households by 2024.
- **Goal**: **'Har Ghar Jal'** – providing **every rural household with Functional Household Tap Connections (FHTC)** delivering 55 litres per capita per day (lpcd) of BIS-standard water regularly at affordable rates.
- **Nodal Ministry**: Department of Drinking Water and Sanitation, **Ministry of Jal Shakti.**
- **Funding**: Centrally Sponsored Scheme – 90:10 for Himalayan/NE States, 100% for UTs, 50:50 for others.
- **Priority Areas: Rural households** (drought-prone, poor quality, etc.) and **Public Institutions** (Gram Panchayats, schools, etc.)
- **Key Features**:
  - Focus shifted from **habitations to households**.
  - **Decentralized, community-managed, demand-driven** program with **Gram Panchayats as public utilities**.
  - At least 5 villagers (preferably women) trained to test water quality using **Field Test Kits.**
  - **Jal Jeevan Survekshan (2022)** assesses performance of districts and States/UTs.
  - **Women and weaker sections** lead **Village Water & Sanitation Committees** (min. 50% women).
  - **Technology** like JJM-IMIS, IoT solutions, and geo-tagging used.
  - Promotes **awareness and stakeholder contributions** (cash, kind, or labor).

Potential Impact of JJM

Women empowerment	Health and quality of life	Employment
Reduce daily time spent fetching water by over 5.5 crore hours, mainly benefiting women. (WHO)	Providing safe drinking water to all Indian households could avert ~400,000 diarrheal disease deaths. (WHO)	Create 59.9 lakh person-years of direct and 2.2 crore person-years of indirect jobs during capital spending phase.

Progress and Achievements

- 11 States/UTs achieved 100% rural tap water coverage (e.g., Mizoram, Goa, Gujarat, Punjab).
- Tap water connections rose from 3.23 crore (17%) in 2019 to 15.44 crore (79.74%) by February 2025, a 75.89% increase.
- 9,32,440 schools and 9,69,585 Anganwadi centres now have tap water.

Challenges in Implementation (Standing Committee Report 2024-25)

- Only 30.72% of FY 2024-25 funds utilized.
- **Slow progress** in HGJ status (only 11 States/UTs) due to:
  - Delays in Multi Village Schemes.
  - Scarce groundwater in drought/desert areas, contamination, and hilly/forested terrain issues.
  - Limited financial/technical capacity and delays in clearances.
- **No comprehensive O&M policy**; only 12 States/UTs have one, facing capacity and coordination issues.
- Just 2160 Water Quality Testing Labs for ~5.86 lakh villages, many lacking NABL accreditation.
- **Over-reliance on groundwater** (52%) vs. surface water (48%), neglecting sustainability.

Recommendations (Standing Committee Report 2024-25)

- Speed up fund utilization with better Centre-State coordination.
- Support underperforming States proactively.
- Include local representatives in State Water and Sanitation Mission committees.
- Assist States/UTs in framing O&M policies.
- Expand WQTLs, aim for NABL accreditation, and mandate 2% fund allocation for water quality monitoring.
- Promote water conservation through traditional water body revival, rainwater harvesting, and public education.

6.9. OXFAM REPORT ON WIDENING GLOBAL ECONOMIC INEQUALITIES

Why in the news?

Recently Oxfam released report titled **'Takers Not Makers: The Unjust Poverty and Unearned Wealth of Colonial Inheritance'.**

Key Findings of Report

- **Deeply Unequal World:** 44% live below $6.85 (PPP), while 1% hold 45% of wealth.
  - **Billionaire colonialism**: In 2024, their wealth grew thrice faster than 2023.
  - **Wealth taken, not earned**: 60% from inheritance, cronyism, or monopolies.
- **Colonial Inheritance**: Ultra-rich wealth reflects historical and modern colonialism.
  - **Historical**: Rich nations' occupation till WWII.
  - **Modern (Neo-colonialism):** Global North dominates South.
    - **Digital colonialism**: Big Tech controls digital life.
    - **Corporate exploitation**: MNCs extracted resources worth $242T (1995–2015).
    - **Unequal power**: G7 has 41% of IMF votes with less than10% population.
- **Impact of Historical Colonialism**:
  - **Inequality**: Tax losses ($47bn) due to global tax abuse hit 49% of their health budgets; and 48% of total budget spent on debt.
  - **Border conflict**: Due to arbitrary partitions.
  - **Social Divisions**: Racism, land issues, poor health persists.
  - **Gender Inequality**: Colonialism sidelined women's economic roles **(e.g. introduction of crash crops).**

Economic Inequality in India

- **Wealth Inequality**: India's richest 1% hold over 40% of wealth, bottom 50% own 3% (Oxfam).
- **Income Inequality:**
  - **Rural-Urban Divide**: Average Monthly Per Capita Expenditure **(MPCE) is ₹ 4,122 (Rural) vs. ₹ 6,996 (Urban)** (**Household Consumption Expenditure Survey 2023-24**).
  - **Gender Pay Gap**: Men earn 82%, women 18% of total labour income (**World Inequality Report 2022**).
- **Colonial Drain**: UK took $64.82 trillion from India (1765–1900), $33.8 trillion to top 10%.

Drain of Wealth from India During Colonial Period

- **Dadabhai Naoroji**:
  - Argued that **Britain drained over one-fourth of India's revenue** in his 3 Papers
    - **England's Debt to India** (1867)
    - **Poverty of India** (1873)
    - **Poverty and Un-British Rule in India** (1901)
  - **His "Drain of Wealth" theory** included **excessive land revenue, trade exploitation** leading to India's global output dropping from 25% (1750) to 2% (1900).
    - **Other Factors**: Home Charges, profits to Britain, currency manipulation, etc.
- **R.C. Dutt** estimated the drain at **£20 million yearly by 1900.**

Way Forward (Recommendations of the Report)

- **National Targets**:
  - Set **Inequality Reduction Plans** with timelines.
  - **Reform colonial institutions** (perpetuating inequality).
- **Global Governance**: Increase **Global South voting power** in World Bank/IMF.
- **UN Reform**: Abolish Security Council Veto, permanent seats to Global South nations, etc.
- **Tax ultra-wealthy** and **end tax havens**.

- **Break Monopolies**: Regulate corporations for living wages, climate/gender justice, reform patents to share knowledge, etc.
- **South-South Cooperation**: Share tech/resources in Global South.
- **Paying of reparations by** ex-colonial powers**, cancelling unsustainable debt,** etc.

6.10. THREE-LANGUAGE FORMULA

Why in the News?

Opposition to the National Education Policy (NEP) 2020's three-language formula has emerged in some states.

About NEP and Three Language Formula

- **NEP 2020**: Mandates three languages (**at least two being Indian**), offering flexibility **unlike the 1968 policy's** Hindi, English, and regional language requirement.
- **Regional Flexibility**: Allows states and students to select languages, fostering multilingualism and respecting diversity.

Evolution of Three Language Formula Policy

- **Article 351:** Obliges the Union to promote Hindi.
- **Kothari Commission (1964-66):** Introduced the three-language formula, adopted in the 1968 NEP.
- **NEP 1968:** Promoted regional languages at all educational levels.
- **1992 Programme of Action**: Advocated mother tongue at pre-school.
- **Right to Education Act, 2009**: Prioritized mother tongue as the medium of instruction.
- **NEP 2020**: Recommends mother tongue or local language as the medium until at least Grade 5, ideally Grade 8.

- **Advantages of Three Language Formula** (As per UNESCO's **'Languages Matter: Global Guidance on Multilingual Education'** Report):
- **Access and Inclusion**: for diverse learners, boosts parental involvement, and includes marginalized groups.
- **Learning Outcomes**: Supports socio-emotional growth and academic success through enhanced cognition.
- **Sustainable Development**: Preserves cultures, boosts economies (**e.g., 10% of Switzerland's GDP**), promotes harmony, and protects environmental knowledge.
- **National Integration**: Enables cross-regional communication and strengthens unity in diversity.

Arguments Against Three-Language Formula

- **Politicisation**: Language sensitivity could fuel **regionalism**, threatening national unity via the 'sons of the soil' sentiment.
- **Language Choice**: Adults learn languages as needed, making mandatory policies redundant.
- **Primary Education Struggles**: Adding a third language may **burden students and systems**, especially monolingual children.

Steps Taken to Promote Multilingualism In Indian Education System	
ASMITA (Augmenting Study Materials in Indian Languages through Translation and Academic Writing) Initiative	To produce 22,000 books in 22 scheduled languages over five years.
Bahubhasha Shabdkosh	To create a multilingual dictionary repository.
Real-time Translation Architecture	By National Education Technology Forum (NEFT) and Bharatiya Bhasha Samiti to develop technology for real-time translation in Indian languages.
Bharatiya Bhasha Pustak Scheme	Digital textbooks and study materials in multiple Indian languages
Bhashini	An AI-led language translation system enabling people to speak in their own language while communicating with speakers of other Indian languages.

Challenges for implementation

- **Teacher Shortage**: Lack of qualified teachers diverts resources from critical needs.
- **Diverse States' Challenges**: States like Nagaland face implementation hurdles.
- **Execution Issues**: E.g., Haryana struggled with Tamil.
- **Technology**: AI tools like Google Gemini reduce the need for multilingual skills.

Way Forward for Effective Implementation

- **Prioritize Quality**: Focus on teaching and outcomes over language addition.
- **Cooperative Federalism**: Promote Centre-State collaboration for smooth NEP 2020 rollout.
- **Align with UNESCO Guidance**: Use data-driven policies, develop materials, train teachers, and engage communities.

6.11. QUALITY HIGHER EDUCATION IN INDIA

Why in the News?

NITI Aayog released a policy report named **'Expanding Quality Higher Education through States and State Public Universities'.**

- **State Public Universities (SPUs)** are established by Provincial or State Acts and funded by State Governments.

Scenario of Higher Education in India AISHE Report 2021-2022 Highlights

- **Access & Enrolment**
  - **Institutions**: 1,168 universities, 45,473 colleges, and 12,002 stand-alone institutions exist nationwide.
  - **Student Enrolment**: Over 4 crore students enrolled, ranking India second globally after China.
  - **Gross Enrolment Ratio (GER):** Rose from 0.4 (1950-51) to 28.4 (2021-22), with NEP 2020 targeting 50% by 2035.
  - **Gender Parity Index (GPI):** Improved from 0.87 (2011-12) to 1.01 (2021-22), up by 16%.
- **Quality & Research**
  - **Pupil-Teacher Ratio (PTR):** Stable at 23:1 over the past five years.
  - **Research**: India's global research share increased from 3.5% (2017) to 5.2% (2024), though higher education accounts for only 10% of total research.
- **Funding**: Centre and State expenditure (as % of GDP)-
  - **University & Higher Education:** 0.62%; **Technical Education**: 0.95%; **Tertiary Education:** 1.57%

Role of SPUs in Quality Higher Education

- 81% of total student enrolment in 495 SPUs and their over 46,000 affiliated institutions.
- NEP 2020 aims to double enrolment in HEIs from 4.33 crores to 9 crores.
- >7 crore of the 9 crore students will study in SPUs.
- 76.3% increase in enrolment of Scheduled Caste students from 2011 to 2022.
- Gender parity in SPU enrolment: 51.79% male, 48.21% female nationally.
- 38 SPUs appeared in the top 100 institutions (university category).
- 106.8% increase in enrolment of Scheduled Tribes students.

Key Challenges to Quality Higher Education in India

- **Inefficient Accreditation System**: Less than 39% of universities are accredited despite 35 years of NAAC, due to high costs.
- **Financing Gap**: Per capita government spending on tertiary education is US$30, far below Brazil (2.6x higher) and the USA (35x higher).
- **Suboptimal Research**
  - **Low R&D spending** (0.7% of GDP) by government and HEIs hampers innovation.
  - **Researchers lack incentives** (funding, recognition, commercialization), leading to fewer quality PhDs and faculty shortages.
- **Policy & Governance Issues**
  - **Multidisciplinary Education Gaps**: Weak framework for MERUs and policies on tech, AI, and data privacy.
  - **University Tax Burden**: Taxes on revenue and commercial utility rates strain finances.
  - **Limited Autonomy**: Restrictions on fee and curriculum decisions stifle innovation.

- **Regional Disparities (AISHE 2021-2022):**
  - **University Density**: High in Sikkim (10.3), low in Bihar (0.2).
  - **GER (Gross Enrolment Ratio)**: High in Tamil Nadu (47), low in Bihar.
  - **GPI (Gender Parity Index)**: Kerala leads (1.44), Odisha lags (0.88).
  - **PTR (pupil Teacher Ratio)**: Tamil Nadu excels (14), Bihar struggles (64).

Key Initiatives for Quality Higher Education

- **Budget 2025-26**: 10,000 PMRF scholars selected; 6,500 new IIT seats; Bharatiya Bhasha textbook scheme.
- **Assessment and Ranking**:
  - **National Assessment and Accreditation Council (NAAC)**: Assesses HEIs since 1994 using seven criteria.
  - **National Institutional Ranking Framework (NIRF)**: Ranks HEIs since 2015.
- **Infrastructure Development**:
  - **Higher Education Financing Agency (HEFA)**: Funds capital assets in top institutions.
  - **National Digital Education Architecture (NDEAR)**: Digital infrastructure launched in 2021.
  - **Pradhan Mantri Uchchatar Shiksha Abhiyan (PM-USHA)**: Supports state universities and colleges.
- **R&D:**
  - **Anusandhan National Research Foundation (ANRF)**: Boosts research nationwide.
  - **Scheme for Promotion of Academic and Research Collaboration (SPARC)**: Promotes global research partnerships.
  - **One Nation One Subscription (ONOS) Scheme**: Enhances access to scholarly research.
  - **Partnerships for Accelerated Innovation and Research (PAIR) Programme**: Links top institutions with emerging ones.
- **Employability Facilitation**:
  - **National Credit Framework (NCrF)**: Integrates academic and vocational learning.
  - **PM Internship Scheme**: Targets 1 crore internships in five years.

Way Forward for Quality Higher Education

- **Funding and Financing**: Meet NEP budget goals, leverage PPPs (e.g., Telangana's TASK).
- **Improving Governance**: Shift to a facilitator model, grant autonomy in curriculum and hiring.
- **Improving Infrastructure**: Expand projects like Odisha's OHEPEE (850 colleges).
- **Improving Pedagogy**: Evaluate teaching and review curricula regularly.
- **Digitalization**: Create digital learning hubs (e.g., Kerala's 'Let's Go Digital').
- **Improving Research Quality**:
  - **Policy Framework**: Align with ANRF.
  - **Capacity Building**: Train faculty (e.g., Maharashtra's Faculty Development Academy).
  - **Internationalization**: Attract foreign universities (e.g., GIFT City).
  - **Industry Collaboration**: Set up IRCs and incubation centers using industry platforms.

6.12. NEWS IN SHORTS

6.12.1. ASER 2024 Released by NGO Pratham Foundation

The Annual Status of Education Report (ASER) is a nationwide rural household survey assessing children's schooling and learning.

- It evaluates **schooling status for ages 3-16** and **reading/math skills for ages 5-16**.
- **Conducted yearly** from 2005-2014, then biennially.

Key Findings

- **Learning Gap Recovery**: Post-pandemic improvements in reading and arithmetic for grades 3 and 5, with all elementary grades (I-VIII) showing gains since 2022, arithmetic at a decade-high.
- **Digital Literacy (2024, ages 14-16):** Nearly 90% of teens have smartphone access at home.
  - **Ownership**: 36.2% boys vs. 26.9% girls; **Usage**: 57% for education, 76% for social media.
- **School Infrastructure**: **Slight improvements** in Right to Education indicators **like girls' toilets and drinking water.**

6.12.2. No Detention Policy

Ministry of Education: Scrapped the **no-detention policy** for **Classes 5 and 8** under the **Right of Children to Free and Compulsory Education (RTE) (Amendment) Rules, 2024**, allowing schools to fail students who do not pass year-end exams.

- The no-detention policy was **part of the RTE Act, 2009** aiming to reduce dropout rates.

Key Provisions of New Policy

- **Re-examination**: Failing students get extra instruction and a chance for re-examination within two months.
- **Expulsion**: No child can be expelled until completing elementary education.

Arguments in Favour of Detention	Arguments against Detention
Learning Outcomes: Over 65 lakh students failed in Classes 10 and 12 (2023).	**Stigmatization**: Fear of failure and repeating classes increases dropout rates.
Motivation: Automatic promotion reduces students' motivation and teachers' accountability.	**Holistic Development**: Supports a system that values overall child growth, not just academic success.

6.12.3. UDISE+ 2023-24 Report on School Education

Ministry of Education releases **Unified District Information System for Education Plus (UDISE+) 2023-24 Report** on School Education.

- It collected **nationwide student-specific data since 2022-23.**
- Follows **NEP 2020 guidelines**.

About UDISE+ (Started in 2018-19)

- By Department of School Education & Literacy **to replace manual data with online collection.**
- Covers schools, teachers, enrolments, etc., via online forms.

Key Findings

- **Enrolments**: Fell from 25.18 crore (2022-23) to 24.8 crore (2023-24).
- **Dropouts**: Zero at Foundational level; maximum at Secondary level.
  - Bihar, UP, Maharashtra saw highest drop.
- **Retention**: Better at elementary level.
- **Gross Enrollment Ration (GER)**: Minor dip, except at secondary level.
- **Infrastructure**: Underutilized in Assam, Odisha, Karnataka.

6.12.4. Global One-Stop Centres (OSC)

Government has approved 9 global OSCs for Indian women in distress by Ministry of External Affairs.

About Global OSCs

- **Aim**: Provide comprehensive **assistance** to women in **vulnerable situations**.
- **Indian Community Welfare Fund (ICWF)** will play a vital role in extending welfare measures to distressed Indian nationals, particularly women.

6.12.5. Bal Vivah Mukt Bharat Campaign Launched

Ministry of Women and Child Development launched the campaign to oppose child marriage.

About the Campaign

- **Focus Areas**: Targeting **7 states** and **300 districts** with high child marriage prevalence.
- **Objective**: Reduce child marriage rates below **5%** by **2029** in collaboration with **States** and **Union Territories**.

- Under it, **Child Marriage Free Bharat Portal** has been launched; it enables reporting incidents and accessing **Child Marriage Prohibition Officers (CMPOs)**.

Status of Child Marriage in India

- **NFHS-5**: Child marriage decreased from **47.4%** (2005-06) to **23.3%** (2019-21).
- **Wealth Variation**: **40%** of females in the lowest wealth quintile married before 18.
- **High Prevalence States**: West Bengal, Bihar, Tripura, Jharkhand, Assam, AP, Rajasthan, and Telangana

Consequences

Child marriages lead to **forced sexual activity, domestic violence, low education, health risks** from early pregnancies, and violate **human rights**.

Government Measures

- **Prohibition of Child Marriage Act, 2006 (PCMA)**, prohibits child marriage for females under **18** and males under **21**.
- Signatory to **the UN Convention on Rights of the Child**
- Campaign by the **National Commission for Protection of Child Rights (NCPCR)**
- **Working on SDG 5** (includes elimination of child marriage by **2030**)
- Ratified **Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)**

6.12.6. Domestic Migration Report

Report '400 Million Dreams' released by Economic Advisory Council to the Prime Minister (EAC-PM)

Key Findindgs

- **Status of Domestic Migrant Numbers:** 12% drop from 45.57 crore (2011) to 40.20 crore (2023); migration rate fell from ~38% to ~29%.
- **Migration Dynamics:**
  - Short-distance migration dominates; long distances hinder labor mobility.
  - Migration originates primarily from areas around major urban centers like Delhi, Mumbai, Chennai, Bangalore, and Kolkata
- **Major Routes:** UP-Delhi, Gujarat-Maharashtra, Telangana-AP, and Bihar-Delhi.
- **Migrant Share Changes:**
  - **Increase:** West Bengal, Rajasthan and Karnataka.
  - **Decrease:** Maharashtra and Andhra Pradesh.

Reasons for Decline

- **Improved local infrastructure** (roads, schools, healthcare, transport).
- Localized economic growth generating rural jobs.

Steps taken for welfare of Domestic Migrants in India

- **Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979** prevent human rights violations.
- **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PMJAY)** offers Rs.5 lakh health coverage for secondary and tertiary health benefits to migrant workers.
- **One Nation One Ration Card Scheme** enables ration card portability nationwide for migrants and their families.

6.12.7. Right to Disconnect in India

The death of a young female employee due to work stress has sparked calls for a **'Right to Disconnect' law in India.**

What is Right to Disconnect?

- **Definition:** Employees are not obligated to respond to work-related calls/messages after work hours without facing disciplinary action.
- **Need:**
  - **Psycho-Social Impact:** Weakens social bonds, increases mental health issues, and cardiovascular risks.
  - **Impact on Women:** Professional women in India work over 55 hours/week, leading to stress.
  - **Other Effects:** Reduced productivity, insomnia, and sleep disruptions due to prolonged screen time.
- Currently, India **lacks specific laws** recognizing right to disconnect from work.

Global Position on 'Right to Disconnect'

- **France**: Employees are not obligated to work from home or handle tasks outside work hours.
- **Spain**: Public workers and employees can switch off devices outside working hours.
- **Australia**: Parliament grants employees the right to disconnect from work beyond official hours.

6.12.8. Global Report on Trafficking in Persons 2024

Released by: United Nations Office on Drugs and Crime (UNODC)

Key Findings

- **Victims:** 2022 saw a 25% rise in known victims compared to 2019.
- **Demographics:** Women and girls comprised 61% of victims in 2022.

About UNODC

- **Established:** 1997
- **Focus:** Combating illicit drugs, organized crime, and terrorism.
- **HQ:** Vienna, Austria

6.12.9. WFP Global Outlook for 2025

World Food Programme (WFP) released 'Global Outlook for 2025' Report.

Key Highlights

- **Global Hunger Crisis: 343 million** people across **74 countries** are acutely food insecure, with **1.9 million** on the brink of hunger.
- **India Specific Issues:**
  - India hosts a **quarter** of the world's undernourished population.
  - **21.25%** of people live on less than **US$1.90/day**.
  - **38%** of children (6-59 months) suffer from chronic malnutrition.

WFP's Approach to Combating Hunger

- **Local Food Solutions:** Investment in nutritious food, fortification, and social protection systems.
- **Empowering Communities:** Improving livelihoods and climate protection to reduce future needs.
- **Other:** Strengthening local institutions and addressing gender inequalities, etc.

About World Food Programme

- **Genesis:** Established in 1961 by UN General Assembly (UNGA) & Food and Agriculture Organization (FAO).
- **About: Largest humanitarian agency** saving lives in emergencies & using assistance to help communities become self- sufficient and resilient to shocks.
- **Reach:** Presence over 120 countries.
- **Recognition:** WFP is awarded Nobel Peace Prize in 2020.
- **HQ:** Rome, Italy

6.12.10. Anna Chakra Tool

Union Minister of **Consumer Affairs, Food and Public Distribution** launched the **'Anna Chakra' PDS Supply Chain optimization tool** and **SCAN Portal** to **modernize the PDS system.**

Anna Chakra Tool

- **Purpose**: Optimizes the **Public Distribution System (PDS)** supply chain using advanced algorithms to find optimal routes for seamless food grain movement.
  - **It is integrated** with **PM Gati Shakti** and **FOIS** (Freight Operations Information System) through **ULIP**(Unified Logistics Interface Platform).
- **Developed By**: Department of Food & Public Distribution, in collaboration with **WFP** and **IIT-Delhi**.

SCAN Portal (Subsidy Claim Application for NFSA)

- **Purpose**: Facilitates a single-window submission, scrutiny, and approval of subsidy claims by states, streamlining the settlement process via end-to-end workflow automation.

6.12.11. Role of Digital Public Infrastructure (DPI) for Children Explored by UNICEF Report

UNICEF's 'Global Outlook 2025' highlights DPI's role in delivering digital services for children.

What is DPI?

- DPI delivers **equitable access to services** via **shared digital systems**.
- Includes **tech, markets, and governance**.

Role of DPI in Children's Well-Being

- **Access**: Digital IDs link to essential services. **E.g., DIKSHA** bridges gaps.
- Enhances **financial literacy and inclusion**.
- Improves **social protection** with targeted benefits.

Challenges

- **Digital Inequality**: **E.g.,** only 43.6% of Indian rural youth can send email.
- **Weak Civil Registration and Vital Statistics (CRVS) -ID Link**: Limits coverage.
- **Other**: Interoperability, security, privacy risks.

Recommendations

- **Digitize CRVS** for digital IDs.
- Enable **safe data sharing** across services.
- Promote **youth digital financial literacy**.
- **Include children** in infrastructure design.

6.12.12. "Imagine A World With More Women In Science" Campaign

UNESCO launched **"Imagine A World With More Women In Science"** campaign.

- The campaign marks the **10th anniversary of International Day of Women and Girls in Science** (**11th February**).

Gender Gap in Science

- **Global**:
  - **Low Representation**: Women make up only one-third of the global scientific community
  - **Leadership Gap**: Just 1 in 10 STEM leadership roles are held by women.
- **India**:
  - Women constitute **43% enrolment in STEMM** (Science, Technology, Engineering, Mathematics & Medicine)
  - The number of **women scientists is 18.6%,** R&D projects run by Women are ~25%.
- **Challenges**: Social & Cultural Norms; Lack of role models, etc.

Steps to be Taken	
Parameters	**Recommended Actions**
Break Down Gender Stereotypes and Prejudices in Science	➤ Featuring more findings and narratives from women scientists, with pictures in educational texts ➤ Guarantee fair representation of women on pertinent boards, committees and panels
Paving Educational Routes for Girls in Science	➤ Eliminate gender prejudice and stereotypes from educational content ➤ Urge companies to launch corporate social responsibility projects backing women and girls in science
Fostering Workplace Settings that Draw in, Keep and Elevate Women Scientists	➤ Address gender-based violence, including sexism and sexual harassment ➤ Advance women into leadership roles

6.12.13. Swavalambini

The Ministry of Skill Development and Entrepreneurship (MSDE), in collaboration with NITI Aayog, launched Swavalambini.

About Swavalambini

- A **Women Entrepreneurship Programme**, initially introduced across Higher Education Institutions (HEIs) in Eastern regions, now expanded nationwide.
- **Implementation**: By **National Institute for Entrepreneurship and Small Business Development (NIESBUD)** in joint partnership with NITI Aayog.
- **Aim**: To guide young women through a structured entrepreneurial journey with stages including awareness-building, skill development, etc.
- It also **offers six months of mentorship and handholding support** to assist participants in transforming their ideas into sustainable ventures.

6.12.14. WHO Framework Convention on Tobacco Control (WHO FCTC)

WHO celebrated 20 years of its inaugural global treaty, the WHO FCTC.

About WHO FCTC

- **Genesis**: Adopted in 2003, enforced in 2005.
- **Purpose**: Legal framework for tobacco control, including pictorial warnings, smoke-free laws, and higher taxes.
- **India's Role**: Ratified in 2004, served as South-East Asia's regional coordinator.
- **Impact**: Covers 5.6 billion people with at least one policy, reducing global smoking rates.

6.13. TEST YOUR LEARNING

1. Which of the following best describes the criteria used by OECD to define Middle Income Class?

(a) Annual income between ₹2–6 lakh per household

(b) Individuals earning between $10 and $100 per day

(c) Monthly income greater than ₹1.5 lakh

(d) Access to subsidized public services like health and education

2. Which of the following are economic characteristics of India's rising middle-income class?

1. High reliance on gig economy employment
2. Significant consumption in housing and electronics
3. Major driver of India's future domestic demand
4. Complete insulation from poverty risks

Select the correct answer:

(a) 1, 2 and 3 only

(b) 2 and 3 only

(c) 1, 3 and 4 only

(d) All of the above

3. Consider the following problems faced by India's middle class:

1. Wage stagnation
2. Rising household debt
3. High tax burden with limited benefits
4. Preferential government subsidies

Which of the above are genuine concerns?

(a) 1, 2 and 3 only

(b) 2 and 4 only

(c) 1 and 3 only

(d) All of the above

4. The rise of Tier II cities as economic hubs is closely linked to which of the following?

(a) Central government's backward region development funds

(b) Return migration from metros post-COVID

(c) Aspirational spending and lifestyle changes of urban middle class

(d) Mandated corporate social responsibility spending in small towns

5. As per UNESCO's "Behind the Screens" survey, which of the following concerns have been raised about Digital Content Creators (DCCs)?

1. Their lack of formal regulation
2. Influence on public opinion without accountability
3. Low income despite high visibility
4. Complete independence from algorithms

Choose the correct answer:

(a) 1 and 2 only

(b) 1, 2 and 3 only

(c) 2 and 4 only

(d) All of the above

Mains Questions (2)

Q1. (150 words)

"The Indian middle-income class is expanding, but so are its vulnerabilities." Discuss with examples.

Q2. (250 words)

"India's digital content creators are reshaping public discourse and culture, but lack structural support and regulation." Examine.

SCIENCE & TECHNOLOGY

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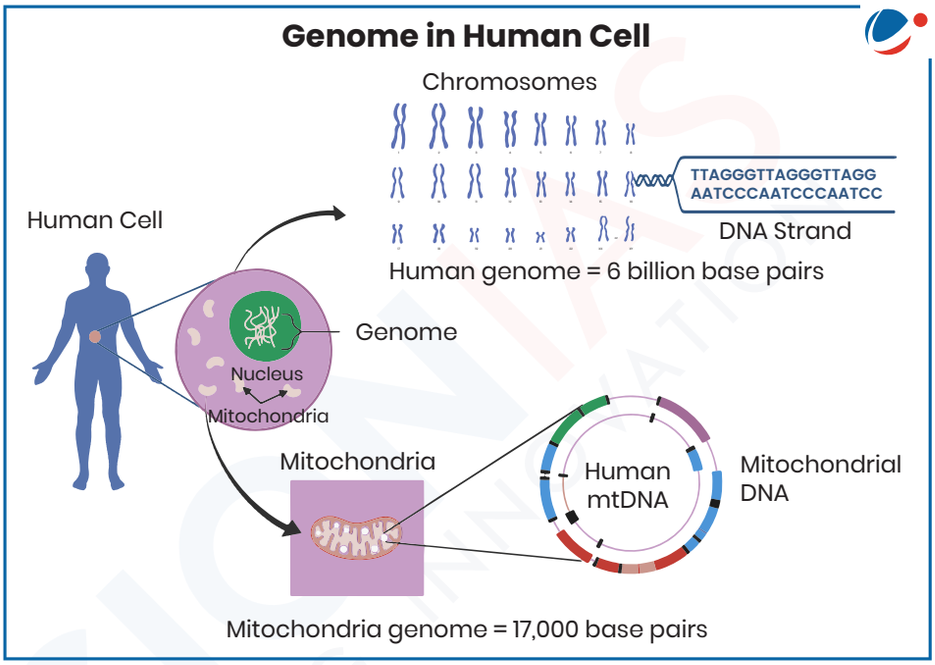
7.1. GENOME INDIA PROJECT

Why in News?

Genome India Project (GIP) has made genomic data of **10,000 individuals** publicly accessible.

More on the News

- **Whole genome sequencing** data archived at **Indian Biological Data Centre (IBDC), Faridabad**, India's first national life science data repository under **Department of Biotechnology (DBT)**.
- Framework for **Exchange of Data Protocols (FeED) Protocols** launched under **Biotech-PRIDE Guidelines** for secure, nation-specific data sharing.



About Genome India Project (GIP)

- **Launched**: 2020 by **DBT** with 20 collaborating institutions.
- **Objective**: Map **India's genetic diversity** by creating a genetic variations catalogue.
- **Key Achievements**
  - **20,000 samples** collected from **83 populations**; bio-bank established.
  - **10,000 genomes** sequenced, creating **India's reference genome**.

What is Genome Sequencing?

- **Genome Sequencing** is a process of determining the **exact nucleotide sequence** in DNA/RNA.
- **Key Applications**
  - **Healthcare & Medicine**: Identifies genetic disorders, aids disease research, etc.
  - **Public Health**: Tracks pathogens, assists in **vaccine development**.
  - **Agriculture**: Improves crop and livestock genetics.

Challenges related to Genome Sequencing

- **Data Accuracy**: Errors persist, especially in long-read sequencing.
- **Data Protection Issues**: Indian genomic data is often sent abroad, raising security concerns.
- **Other**: High Costs, Inequity (Limited access for the poor), Ethical Concerns (informed consent issues), etc.

Conclusion

Genome Sequencing can be utilised in more efficient way by expanding Next-Generation Sequencing (NGS), implementing clear ethical guidelines, etc.

Other Key Projects on Genome Sequencing

- **IndiGen Program (by CSIR)**: Sequencing genomes of Indians from diverse ethnic groups.
- **'One Day One Genome' (by DBT)**: Highlights unique bacterial species in India
- **Human Genome Project (HGP)**: International effort (1990-2003) to map the entire human genome

7.2. GENETICALLY MODIFIED (GM) CROPS

Why in the News?

Ministry of Environment, Forest and Climate Change (MoEF&CC) issued **Draft Manufacture, Use, Import, Export, and Storage of Hazardous Micro-Organisms/Genetically Engineered Organisms or Cells (Amendment) Rules, 2024**.

More on the News

- Rules will amend the **Manufacture, Use, Import, Export, and Storage of Hazardous Micro Organisms/Genetically Engineered Organisms (GMO) or Cells Rules, 1989**, under the **Environment (Protection) Act, 1986**.
- Amendments will enhances **transparency & accountability** in GMO decision-making, as per **Supreme Court directions (Gene Campaign & Anr. Vs. Union of India & Ors.).**

Key Highlights of New Rules

- **Conflict Disclosure:** GEAC experts must declare conflicting interests.
- **Recusal from Meetings:** Experts with conflicts must step aside unless requested.
- **Affiliation Disclosure:** Members must disclose past decade's affiliations before joining Committee.

What are GM Crops?

- Plants, bacteria, fungi and animals whose **genes have been altered by manipulation** are called GMO.
- **Methods involved in developing GM Crops**
  - **Gene Gun Approach**: DNA-coated metal particles are bombarded into plant cells.
  - **Agrobacterium Approach**: Agrobacterium tumefaciens transfers the desired gene into plant cells.
  - **Electroporation**: Electric pulses create tiny pores in plant cells (without cell walls) for DNA entry.

Benefits of Genetically Modified (GM) Crops

- **Agricultural Productivity:** Higher Yields, Drought & Salinity Resistance etc.
- **Pest & Disease Resistance:** Reduced Pesticide Use (e.g. Bt cotton)
- **Nutritional Enhancement:** Bio-fortification (e.g. Golden Rice) and Better Oil & Protein Content (e.g. GM soybeans)
- **Environmental Benefits:** Lower Carbon Footprint, Adaptability to Climate Change and Soil Conservation
- **Other Benefits:** Food Security, Reduction in Post-Harvest Losses etc.

GM Crops in India

- **Bt Cotton** (Only GM crop approved for commercial cultivation approved in 2002)
- **Bt Brinjal** (GEAC approved in 2009, later moratorium):
- **GM Mustard (DMH-11)**: Developed by Centre for Genetic Manipulation of Crop Plants (Delhi University)

Regulation of GMOs in India

- **Regulatory & Approval Bodies**
  - **Genetic Engineering Appraisal Committee (GEAC)**
  - **Review Committee on Genetic Manipulation (RCGM) (under DBT)** – Monitors research safety, import/export, etc.
  - **Institutional Biosafety Committee (IBSC)** – Ensures biosafety at the institutional level.
- **Advisory Body:** Recombinant DNA Advisory Committee (RDAC)
- **Monitoring Bodies: State Biotechnology Coordination Committee (SBCC)** and **District Level Committee (DLC)**

Concerns of GM Crops

- **Ecological Risks**: Genetic contamination, herbicide resistance (e.g., glyphosate), etc.
- **Pest Resistance**: Increased pesticide dependence due to resistant pests (e.g., pink bollworm, whitefly in India).
- **Biodiversity Loss**: GM protein leakage disrupts soil microbes and beneficial organisms.
- **Other**: Ethical Issues (Unpredictable ecological effects), potential allergic reactions, etc.

Genetic Engineering Appraisal Committee (GEAC)

- **About**: Statutory committee under Rules, 1989 for GMO regulation.
- **Ministry**: MoEF&CC
- **Functions:** Appraises large-scale use of hazardous microorganisms and recombinants, etc.

Conclusion

Challenges related with the GM Crops can be overcome by strengthening GEAC oversight, conducting scientific evaluations of GM crops' impacts, etc.

7.3. QUANTUM CHIP

Why in the News?

Google unveiled **Willow**, its latest quantum chip, marking a milestone in quantum computing.

More on the News

- **Performance**: Willow excels in the **random circuit sampling (RCS)** benchmark, achieving:
  - **Error reduction** as systems scale with more qubits.
  - Completing a benchmark task in **five minutes**, this would take today's fastest supercomputers 10 septillion (that is, 1025) years.
- **Improved Coherence**: Willow shows enhanced **coherence time**, allowing qubits to maintain their state longer.

About Quantum Chips

- **Qubits vs. Bits**: Quantum chips use **qubits** instead of classical **bits**.
  - While a bit can only be in a state of 0 or **1**, qubits can exist in **superposition**, representing 0, **1**, and all positions in-between simultaneously.
  - Qubits can be also **entangled**, meaning the state of one qubit directly affects the state of another.
- **Working**: Quantum chips use **quantum gates** to manipulate qubits, just as classical computers use **gate operations** to manage bits.
  - Quantum gates enable qubits to perform complex calculations beyond the capabilities of traditional computing.

Quantum Computing's Impact on Emerging Technologies

- **Quantum AI**: Quantum computing can accelerate AI training by processing large data sets faster.
- **Encryption**: Quantum computers could break encryption methods like **RSA (Rivest, Shamir, Adleman algorithm)**, which secure digital communications.
- **Cryptocurrency**: Quantum computing may threaten the security of cryptocurrencies like **Bitcoin** by breaking their cryptographic algorithms.

Key Challenges

- **Fragile Quantum States**: Qubits are sensitive and collapse easily.
- **Noise in Qubits**: Interference causes qubits to lose information.
- **Temperature Control**: Qubits require near absolute zero temperatures to avoid disturbances that affect accuracy.

Conclusion

Advancing quantum computing requires research on efficient qubits, global collaboration through initiatives like the **Quad Critical and Emerging Technology Working Group, QUIN, and the Quantum Center of Excellence**, etc.

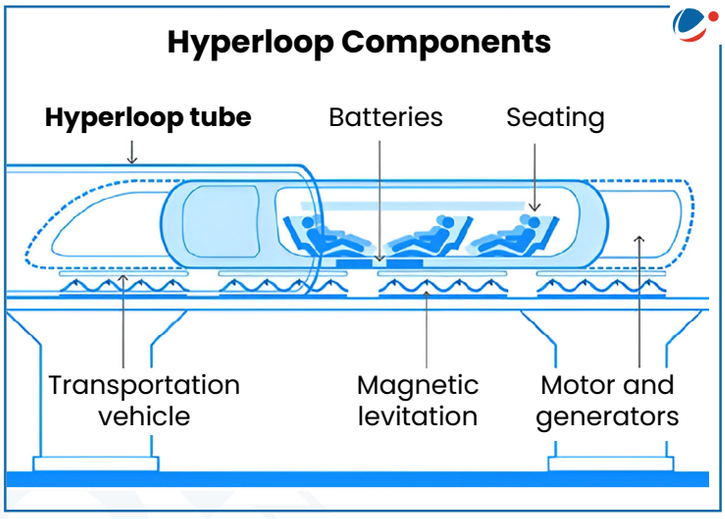
7.4. HYPERLOOP

Why in the News?

IIT Madras' Avishkar Hyperloop team, in collaboration with TuTr, has completed a 410-meter Hyperloop test track—the first experiment of its kind in India.

What is Hyperloop Technology?

- **Definition:** A **high-speed transport system** where pressurized pods travel through low-pressure tubes.
  - **Proposed by Elon Musk in 2013** as an open-source ultra-high-speed rail (UHSR).
- **Historical Roots:** Inspired by the 1865 concept of "gravity vacuum transit."
- **Functioning**
  - **Magnetic Levitation (Maglev):** Magnets lift pods above the track and propel them forward.
  - **Low-Pressure Tube:** Vacuums remove air resistance, enabling speeds up to 1,200 km/h.
  - **Goal:** Reduce travel time significantly to enhance city accessibility over long distances.



Advantages of Hyperloop Technology

- **Reshapes Shipping and Logistics** (Can Carry Large Containers load equivalent to 40 feet)
- Alleviates Truck Emissions
- Cutting Carbon Emissions
- High Speed (Over 1000 km/h 3x Faster than High-Speed Rail
- **Weatherproof** (Less vulnerable to bad weather)

Other Emerging Modern Transit Systems

- **Autonomous Helicopters:** Airbus tested its Vahana eVTOL aircraft.
- **Smart Roads:**
  - **Portugal:** EU-backed project to create 1,000 km of smart roads enabling wireless communication between infrastructure and smart cars.
  - **Sweden:** Electrified road pilot recharges electric vehicles while driving.
- **India's Bullet Train Project:** Mumbai-Ahmedabad High-Speed Rail (MAHSR), leveraging Japan's Shinkansen technology.

Some of the issues with Hyperloop technology

- **Costs:** NASA estimates $25–$27 million per mile, excluding land acquisition.
- **Safety Concerns:** Fire risks inside pods, communication challenges, and limited evacuation exits in tubes.
- **Vacuum Maintenance:** Maintaining air vacuum over long distances demands significant energy and effort.
- **Acceleration Impact:** Excessive acceleration (7x Shinkansen limits) can cause nausea and discomfort.
- **Straight-Line Layout:** Requires stable, elevated, or tunneled structures over long distances for safety, etc.

Way Forward

- **Financial Backing:** Substantial investment by private companies and governments is vital for R&D, particularly for efficient tube depressurization.
- **R&D Focus:** Prioritize advancements in **Linear Induction Motors (LIM)** for efficient propulsion.
- **Infrastructure Development:** Build Hyperloop stations and integrate them with existing transport networks.
- **Regulations & Standards:** India can adopt policies like **Europe's 2020 Joint Technical Committee (JTC 20)** for Hyperloop safety and standards.

7.5. 10 YEARS OF MINISTRY OF AYUSH

Why in the News?

The Ministry of Ayush recently celebrated its 10th anniversary.

About Ministry of Ayush

- **Establishment:** Founded in 2014, the Ministry of Ayush promotes ancient medical knowledge while aligning with the **UN's SDGs and Universal Health Coverage.**
  - "AYUSH" stands for **Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy.**
- **Evolution:** It originated as the **Department of Indian System of Medicine & Homoeopathy in 1995**, renamed the **Department of Ayush** in 2003, and later upgraded to a **ministry.**

Key Achievements of Ministry of Ayush

- **Expanding Ayush Infrastructure**:
  - Over **755,780 registered Ayush practitioners**.
  - Established **three advanced National Ayush Institutes**.
- **Research and Innovation**:
  - **Ayush Research Portal** hosts over **43,000 studies**.
  - Key developments like **AYUSH-64** and **Kabasur Kudineer** for **COVID-19 management**.
- **Economic Impact**: **Ayush market** grew from **USD 2.85 billion** in **2014** to **USD 43.4 billion** in **2023**.
- **Technology Integration**: Digital platforms like **Ayush Grid, e-Sanjeevani**, and **Ayush Telemedicine** improved healthcare access.
- **Other**:
  - Adoption of **International Day of Yoga (IDY)**
  - Launched **National Ayush Mission (NAM)**, a **Centrally Sponsored Scheme** in **2014**.
- It promotes Ayurveda, Yoga, Naturopathy, Unani, Siddha, Sowa-Rigpa, and Homeopathy.

Steps Taken by India to Promote Traditional Medicines

- **Quality Assurance**: Introduced **Ayush Mark** and **Ayush Premium Mark** certification programs.
- **WHO Collaboration**: Agreement to establish **WHO Global Centre for Traditional Medicine** in Jamnagar.
- **Capacity Building**: Launched **Champion Sector Services Scheme (CSSS)** to develop skilled human resources.
- **Education Reforms**: Established National Commission for Indian System of Medicine (NCISM) and National Commission for Homeopathy (NCH) under the **NCISM Act, 2020**.
- **Policy Support**: MoUs with various departments, and establishment of **Strategic Policy and Facilitation Bureau (SPFB)** to facilitate AYUSH sector investment.

Challenges in Mainstreaming AYUSH

- **Lack of Standardisation**: No standardized protocols for diagnosis, treatment, and drug formulations.
- **Lack of Trials**: Insufficient scientific evidence and clinical trials to validate efficacy.
- **Lack of Synergy with Allopathy**: Allopathy follows a biomedical model, while AYUSH, like Ayurveda, takes a holistic approach.
- **Regional Variations**: AYUSH systems are influenced by cultural practices that vary across regions.

Way Ahead

- **Quality Control and Standardization** (Invest in **labs**, **testing**, etc.)
- **Research and Evidence-Based Practice**: Use local **health data** for **epidemiological studies**.
- **Bridging the Integration Gap**: Develop **referral pathways** between AYUSH and **allopathy**.
- **Consumer Confidence and Advocacy**: Promote **responsible advertising**, educate on **safe use**, and encourage **insurance coverage** for AYUSH treatments.

7.6. RARE DISEASES

Why in the News?

India's **Central Drugs Standard Control Organisation (CDSCO)** approves the first **anti-complement therapy** for rare diseases.

What are Rare Diseases?

- **WHO** defines rare diseases as **debilitating** lifelong conditions, with a prevalence of **1 or fewer per 1,000 people** (e.g., **Fanconi Anemia**, **Osteopetrosis**).
  - However, Different countries have their own definitions.
- The **National Policy for Rare Diseases 2021 (NPRD, 2021)** categorized rare disease into **3 groups**.

Classification of Rare Diseases in India (as per NPRD 2021)

Group 1	Group 2	Group 3
Amenable to one-time curative treatment E.g., Disorders amenable to organ transplantation like **Urea cycle disorders,** etc.	**Long-term treatment needed with relatively lower costs and documented benefits** E.g., Disorders managed with special dietary formulae like **Phenylketonuria, etc.**	**Definitive treatment** is available but challenges in optimal patient selection for benefit, very high cost and lifelong therapy E.g., **Gaucher Disease, Pompe Disease** etc.

Issues in Managing Rare Diseases in India

- **High prevalence**: India has **one-third** of global rare disease cases, with **450+ diseases**.
- **Limited trials**: Out of **8000+ global trials**, only **80** are in India.
- **Lack of definition**: No standard definition due to insufficient **epidemiological data**.
- **Other: Low funding**, delayed diagnosis/ Misdiagnosis, etc.

Initiatives to Tackle Rare Diseases

Global

- **WHO's Fair Pricing Forum**: Promotes dialogue among **regulators**, **insurers**, **pharmaceutical companies**, and **patient groups** for sustainable access to **medicines**, including **orphan drugs**.
- **Rare Diseases International (RDI)**: A **global alliance** for individuals with **rare diseases** of all nationalities.

India

- **National Policy for Rare Diseases, 2021**: Aims to reduce **incidence** and **prevalence** with an integrated preventive strategy.
  - **Financial support** of up to **Rs. 50 lakhs per patient** for treatment at notified **Centres of Excellence (CoEs)**.
- **Rashtriya Arogya Nidhi**: Provides financial assistance for **poor patients** with rare diseases.
- **Exemptions**: From **GST** and **Basic Customs Duty** on **drugs** for rare diseases.

Way Forward

- **Implement Delhi High Court Directives:**
  - Establish **National Fund for Rare Diseases (NFRD)** for FY 2024-25 and FY 2025-26.
  - Extend **National Rare Diseases Committee (NRDC)**'s work for five more years, chaired by **ICMR DG**.
  - Create a **Fast Track approval process** for rare disease therapies.
  - Add **CSR contributions for rare diseases** in the **Companies Act** Schedule VII.
  - **Flexibility in ₹50 lakhs limit** for Group 3 category treatments under NPRD, 2021.
- **Other Steps:**
  - **Strengthen epidemiological data** for rare diseases.
  - Expand **Centers of Excellence (CoEs)** in underserved regions.
  - **Incentivize domestic manufacturing** through **Production-Linked Incentive Scheme**.

7.7. THIRD LAUNCH PAD

Why in News?

Union Cabinet approved **TLP at Satish Dhawan Space Centre of ISRO** at **Sriharikota** to boost India's space launches.

About Third Launch Pad (TLP)

- Supports **Next Generation Launch Vehicles (NGLV)** and **Launch Vehicle Mark-3 (LVM3)** with **semi-cryogenic stage**.
- **Significance**
  - **Future-Ready**: Supports **Bharatiya Antariksh Station (2035)** & **Indian Crewed Lunar Mission (2040)** with advanced propulsion systems.
  - **Future Transportation:** Meets **space transport needs for the next 25-30 years**.

Existing Launch Pads at Sriharikota

- **First Launch Pad**: For **Polar Satellite Launch Vehicle (PSLV) & Small Satellite Launch Vehicle (SSLV)**.
- **Second Launch Pad**: Primarily for **Geosynchronous Satellite Launch Vehicle (GSLV) & LVM3**, also a PSLV standby.

Factors for Selecting Sriharikota for Satellite Launch Pads

- **Eastern Coast Location** Facilitates launches in an easterly direction.
- **Proximity to Equator** Provides an additional push for payloads.
- **Safety Considerations** Minimizes risks with fewer maritime or airline routes.
- **Other Factors** Includes uninhabited land and sea proximity.

Next Generation Launch Vehicles (NGLV) Programme

- **Objective**: Develop **Soorya Rocket** for launching satellites and spacecraft.
- **Key Features**:
  - **Three-stage design** with **reusable first stage** for cost efficiency.
  - **Semi-cryogenic propulsion** (kerosene + LOX) in booster stages.
  - **3x payload capacity** of LVM3 at **1.5x cost**.

Other ISRO Launch Vehicles

- **PSLV**: Four-stage rocket; used for **polar orbit missions**.
- **GSLV**: Three-stage vehicle; launches **geo-transfer orbit satellites** with **cryogenic upper stage**.
- **Small Satellite Launch Vehicle (SSLV)**: Small, cost-effective **three-stage solid fuel rocket** for light payloads.
- **Geosynchronous Satellite Launch Vehicle Mk-III (LVM3)**: Heavy-lift **three-stage rocket**

7.8. SCRAMJET ENGINE

Why in the News?

Defence Research and Development Laboratory (DRDL) successfully conducted **India's first 120-second ground test** of an **active-cooled scramjet combustor**.

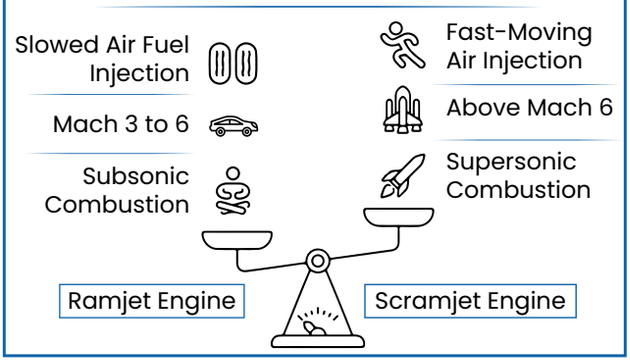
More on the News

- It will boost development of **hypersonic missiles**.
- India is among elite nations like **USA, Russia,** and **China** which have successfully tested scramjet technology.

About Scramjet Engine

- A scramjet engine means a **Supersonic Combusting Ramjet engine**.
  - It is an improvement over the **ramjet engine**.
    - A **ramjet** is a form of **air-breathing jet engine** that uses the **vehicle's forward motion** to **compress incoming air** for combustion without a **rotating compressor**.

Comparing Ramjet and Scramjet Engine Features



- **Key Features**
  - **Flame Stabilisation**: Maintains continuous combustion at speeds exceeding **1.5 km/s**.
  - **Assisted Takeoff**: Requires an initial rocket boost as **ramjets & scramjets cannot produce thrust at zero airspeed**.

Advantages of Scramjet Technology

- **Efficient Propulsion**: Uses atmospheric oxygen, reducing oxidizer dependency (70% in rockets).
- **Cost-Effective Space Access**: Reusable engines enable heavier payloads.
- **Strategic Edge**: Enhances hypersonic missile and reconnaissance capabilities.

Conclusion

Scramjet technology boosts defense and space capabilities, reducing costs. Ongoing research is key to overcoming challenges such as requirement of heat-resistant Materials, etc.

7.9. CE20 CRYOGENIC ENGINE

Why in the News?

ISRO's **CE20 cryogenic engine** passed a critical **sea-level test**, marking a major **breakthrough in propulsion technology**.

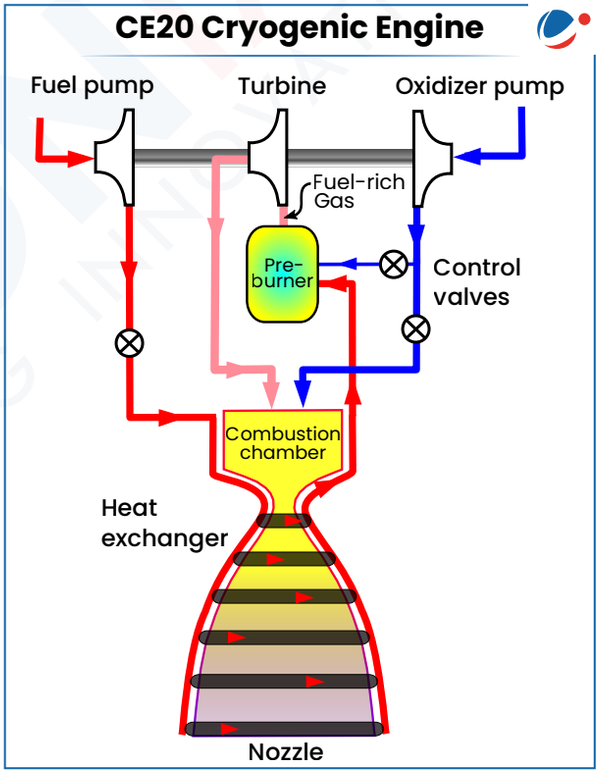
More on the News

- The test introduced a **'Nozzle Protection System'** to address **flow separation** issues, preventing **vibrations**, **thermal problems**, and potential **damage**.
- **ISRO** is developing the engine for **India's Gaganyaan mission**, the **first manned spaceflight**.

How does a Cryogenic Engine Work?

- **Working Principle:** Thrust is produced by **internal combustion** or **pressure difference**, following **Newton's Third Law of Motion** (Every action has an equal and opposite reaction).
- **Uses:** Cryogenic engines are primarily used in the **upper stage** of **space launch vehicles**.
- **Fuel and Oxidizer:**
  - **Cryogenic fuel** and **oxidizer** are liquefied gases stored at extremely low temperatures.

Note: **Semi-Cryogenic Engine -** Uses **refined kerosene** instead of liquid hydrogen, offering benefits like **lighter weight** and **normal temperature storage**.



Advantages of Cryogenic Engine	Challenges of Cryogenic Engine
Efficiency and Thrust: Cryogenic propulsion offers **superior thrust** with **LOX+LH2**. **Fuel Efficiency:** Cryogenic engines burn **less fuel** (2 kg/sec) for the same thrust as the **PSLV Vikas engine** (3.4 kg/sec). **Other:** Eco-friendly, efficient for heavy Payloads, etc.	**Complexity:** Cryogenic engines are more complex due to low-temperature propellants. **Thermal Stresses:** High gradients lead to **cracks**, **blockages**, and **distortions** in key components. **High Pressures: High operational pressures** require **super alloys**, increasing engine weight. **Other:** Low Temperature Maintenance, high cost, etc.

About CE20

- **Developed by:** Liquid Propulsion Systems Centre (LPSC), Valiamala, Kerala.
- **Successful Missions:** Successfully operated in six **LVM3 missions**, including **Chandrayaan-2**, **Chandrayaan-3**, and two **OneWeb** commercial missions.
  - **LVM3 (Geosynchronous Satellite Launch Vehicle Mk III)** is a three-stage vehicle capable of lifting **4,000 kg** payloads.

Characteristics	Cryogenic Engine	Jet Engine	Solid Propellant Engine	Liquid Propellant Engine
Air Intake	**No air intake is required.**	**Air intake is required.**	**Air intake is required as oxidizer.**	**Air intake is required as oxidizer.**
Fuels	Generally super cooled Hydrogen and Oxygen.	(Jet A-1, kerosene), Kerosene-gasoline mixture, Aviation gasoline (avgas), Bio-kerosene.	Fuels for composite propellants are generally metallic powders, with aluminum being the most common.	Hydrazine, mono-methyl hydrazine (MMH), unsymmetrical dimethyl hydrazine (UDMH) etc.
Purpose	**Third stage/ last stage of rocket.**	**Used in the Airplanes etc.**	**Used as boosters in initial liftoff.**	**Act as main stage of rocket after booster separation.**

7.10. NUCLEAR ENERGY MISSION

Why in the News?

Union Finance Minister announced a dedicated **Nuclear Energy Mission** with an allocation of a 20,000 crore in the Union Budget 2025-26.

About the Nuclear Energy Mission

- **Target**: Achieve **100 GW nuclear capacity by 2047** under the **Viksit Bharat vision**. Current: **8180 MW (Jan 2025)**; Target: **22,480 MW by 2031-32**.
- **Aim**: R&D and commissioning of at least **5 Small Modular Reactors (SMRs) by 2033**.
- **Private Sector Participation**: Proposed amendments to the **Atomic Energy Act, 1962** and **Civil Liability for Nuclear Damage Act, 2010** to enable private investment.
  - **Partnerships with the private sector with the motive of** establishing **Bharat Small Reactors (BSRs)**, R&D of **BSRs**, etc.
- **Indigenous Technology Development**: Focus on **220 MW PHWR-based BSRs** for **captive use**.
- **Help in energy transition**: Supports **COP26 pledge (CoP Summit** in **Glasgow** in **2021)** of **500 GW non-fossil capacity** and **50% energy from renewables by 2030**.

What are Small Modular Reactors (SMRs)?

- **Definition**: **SMRs** are **advanced nuclear reactors** with a power capacity of **up to 300 MW(e)** per unit—about one-third of conventional nuclear reactors.
- **Features :**
  - **Small**: Physically much **smaller** than traditional reactors.
  - **Modular**: **Factory-assembled** components, easily **transported and installed** on-site.
  - **Reactors**: Use **nuclear fission** to generate heat and produce energy.

Types of Reactors

Micro Reactors Range: 1 MW to 20 MW

Can fit on a flatbed truck, and are mobile and deployable.

Small Modular Reactors Range: 20 MW to 300 MW

Can be scaled up or down by adding more units.

Full-Size Reactors Range: 300 MW to 1,000+MW

Can provide reliable, emissions-free baseload power.

Significance of SMR Nuclear Energy

- **Compact Architecture & Passive Safety**: Less reliance on active systems, pumps, and AC power.
- **Flexibility in Applications**: Useful for power, heat, and desalination.
- **Modularity for Factory Fabrication**: Factory-built parts ensure quality, reduce cost/time.
- **Sub-grade Installation Potential**: Can be placed underground/underwater for hazard protection.
- **Scalability**: Multiple modules can be added on the same site for capacity expansion.
- **Portability**: Modules can be relocated or decommissioned in-situ post lifecycle.

India's Major Civil Nuclear Deals

- **Nuclear Suppliers Group (NSG) Waiver (Sep, 2008)**: NSG allowed **civil nuclear cooperation between its members and India**.
- **Russia**: Signed **Agreement** for building additional reactors at **Kudankulam Nuclear Power Plant (KKNPP)**.
- **United States**: **123 Agreement (2008)** enabled U.S. **nuclear fuel and technology exports** to India.
- **France**: **2008 Civil Nuclear Agreement**; ongoing plans for **Jaitapur Nuclear Power Project**.

Some of the issues with SMRs

- **Private Sector and Profit Orientation**: Safety may be compromised to cut costs.
- **Unreliability of Passive Safety Features**: Passive systems may fail during **extreme events** like earthquakes or floods.
- **Economic Viability**: Higher **cost per kilowatt-hour** compared to large reactors.
- **Radioactive Waste**: SMRs generate **same quantity of highly radioactive isotopes per unit of heat** as large reactors.
- **No Fuel Efficiency than Large Reactors**: Some SMRs use **HALEU fuel** (higher U-235 concentration), needing **complex enrichment** process.

Conclusion

For the successful deployment of SMRs, a **universal regulatory framework** and **robust safety measures** with public engagement are essential. **Government-backed FOAK(First of a kind) demonstrations**, coupled with **techno-economic assessments (TEA)** and early integration of **IAEA safeguards**, will enhance feasibility and compliance.

7.11. DEEP OCEAN MISSION

Why in the News?

MATSYA 6000, a fourth-gen deep-ocean submersible, completed wet testing.

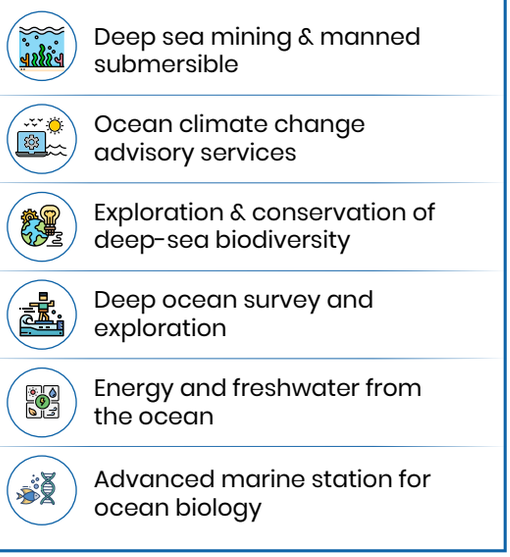
About MATSYA 6000

- Indigenously built **manned submersible** under **Samudrayaan Project** (part of **Deep Ocean Mission**).
  - **Objective of Samudrayaan (2020–2026)** is to develop **self-propelled submersible** to carry **3 humans to 6000 m** depth for **scientific deep-sea exploration**.
- **Developed by**: **National Institute of Ocean Technology (NIOT), Chennai**, under the **Ministry of Earth Sciences (MoES)**.
  - **Global Significance**: With its launch, India will become **sixth country** (after **US, Russia, Japan, France**, and **China**) to have crewed under-sea expedition.

About Deep Ocean Mission

- **Launched**: In 2021 by MoES as a Central Sector Scheme.
- **Purpose**: Develop technologies for deep ocean exploration, support Blue Economy, and address climate change and marine pollution.

Major Components Deep Ocean Mission



Significance of Deep Ocean Mission (DOM)

- **Strategic Importance**: Utilizes India's 7517 km coastline, 1382 islands, and vast **23.7 lakh sq. km Exclusive Economic Zone (EEZ)**, currently underexplored.
  - India has been allotted a site of 75,000 sq. km. in Central Indian Ocean Basin (CIOB) by UN International Sea Bed Authority for the exploitation of polymetallic nodules **(PMN)**.
- **Economic Impact**: Enables **sustainable ocean resource use** for GDP growth, job creation, and livelihood enhancement.
  - Targets **nickel, cobalt, PMN**, and other valuable deep-sea minerals.
  - Just utilizing 10% of the PMN reserve available in the area, country can meet its energy requirements for the next 100 years.
- **Science and Technology**: Empowers direct **deep-sea exploration** via manned submersible for scientific research.

Challenges of Deep Ocean Mission

- **High Pressure**: At 5000 m depth, pressure is ~500× sea level; needs **durable, pressure-resistant equipment**.
- **Technical Challenges**:
  - **Equipment Vulnerability**: Underwater **electronics and instruments** face performance issues.
  - **Material Extraction**: Requires **high power** to pump resources from ocean floor.
  - **Communication Limitation**: **Signal loss** due to backscattering, attenuation, and wave interference.
- **Geopolitical and Strategic Challenge**: **China's presence** in deep-sea zones (e.g., Southwest Indian Ocean) may restrict **India's exploration space**.

Way Forward

- **Indigenous Capabilities**: Invest in **ocean vessels** and **acoustic systems** to boost deep-sea self-reliance.
- **International Cooperation**: Partner with **US, Japan, Australia** for **expertise, tech transfer**, and resource sharing.
- **Quad Platform**: Leverage **Quad** for coordinated deep-sea research and mining.
- **Utilizing Indo-Pacific Oceans' Initiative (IPOI)**: Focus on **Maritime Ecology**, **Resources**, **Capacity Building**, and **S&T Cooperation** under **Indo-Pacific Oceans' Initiative**.

7.12. NON-COMMUNICABLE DISEASES (NCD)

Why in the News?

The Ministry of Health & Family Welfare launched the Intensified Special NCD Screening Drive.

About Screen Drive on NCD

- Drive will be implemented through **Ayushman Arogya Mandirs (AAMs)** and various healthcare facilities nationwide, under **National Programme for Prevention and Control of Non-Communicable Diseases (NP-NCD).**
  - **Ayushman Arogya Mandirs** are established under **Ayushman Bharat initiative** by upgrading existing Rural and Urban PHCs/Sub Centers.

About NP-NCD

- **Background**: **Launched in 2010** (as **National Programme for Prevention and Control of Cancer, Diabetes, Cardio-vascular Diseases and Stroke**) in **100 districts, 21 states** under **11th FYP** to combat NCDs.
  - **12th FYP**: Proposed **phased expansion** to all districts.
  - **2013–14**: Subsumed under **National Health Mission (NHM)**
- **Objectives of NP-NCD**: **Health Promotion** through **behavior change** with community, civil society, and media involvement, etc.

About Non-Communicable Diseases (NCDs)

- **Definition**: Chronic diseases **not transmissible** from person to person.
- **Main Types**: **Cardiovascular Diseases** (e.g. heart attack, stroke); **Cancers; Chronic Respiratory Diseases** (e.g. COPD, asthma) & **Diabetes**
  - When these are caused by an unhealthy lifestyle, these diseases are also called **lifestyle diseases.**
- **Nature**: Long-term; caused by **genetic, physiological, environmental, and behavioral factors**.

Risk Factors for Non-Communicable Diseases (NCDs)

Behavioural Risk Factors	Metabolic Risk Factors	Environmental Risk Factors
Tobacco use (including second-hand smoke)	Raised blood pressure (hypertension)	Outdoor air pollution
Unhealthy diets (excess salt, sugar, fats)	Overweight/obesity	Indoor air pollution
Harmful use of alcohol	High blood glucose levels (diabetes)	
Stress	Abnormal blood lipids (high cholesterol)	

Burden of NCDs

- **Global Scenario**: **Number 1 cause** of death and disability globally; responsible for **74% of all deaths**.
  - **Top 4 NCD killers** (over 80% of premature NCD deaths):**Cardiovascular diseases** followed by **Cancers**, **Chronic respiratory diseases** and **Diabetes**
- **Indian Scenario**: NCDs Account for 63% of All Deaths in India

Impact of NCDs

- **Childhood Education**: NCDs reduce **1.2–4.2 years** of schooling.
- **Out-of-Pocket Burden**: **Travel cost** is the highest for NCD care in India.
- **Life Expectancy**: Lowest at **age 15** in low-education groups due to NCD deaths (30–69 yrs).
- **Economic Cost**: Projected to exceed **₹280 lakh crore by 2030** (WHO).
- **Poverty Impact**: Increases **household health costs**, hampers **poverty reduction** in low-income countries.
- **Gendered Effect**: Prevalence among women is 62 per 1,000, as compared to 36 per 1,000 men.
- **Other Effects**: Loss of **human capital**, **unhealthy workforce**, **revenue decline**.

Initiatives for Controlling NCDs

- **Global Initiatives**
  - **SDG Target 3.4** (Reduce **premature NCD mortality by one-third by 2030**)
  - **WHO Global Action Plan**: Extended from **2013–2020 to 2030** for NCD control.
  - **Global NCD Compact (2020–2030)**: WHO-led push to accelerate NCD prevention.
- **India's Initiatives**
  - **AMRIT Scheme**: Provides **affordable medicines** for cancer, CVDs, etc.
  - **National Mental Health Programme (1982)**: Ensures **basic mental healthcare access**.
  - **National Tobacco Control Programme (NTCP) (2007–08)**: Aims to reduce **tobacco use and awareness**.
- **Other**: Fit India Movement (2019), Eat Right India (FSSAI), National Oral Health Programme, **National Programme for healthcare of Elderly (NPHCE)**, etc.

Conclusion

A **comprehensive, multi-sectoral approach** is essential for preventing and controlling NCDs, integrating health, finance, and social policies. Strengthening **primary healthcare**, leveraging **digital health interventions**, and using **fiscal tools** like taxation on tobacco, salt, and sugar can significantly reduce risk factors.

7.13. NEWS IN SHORTS

7.13.1. ISRO Launches Proba-3 Satellites

PSLV-C59 vehicle carried Proba-3 spacecraft into a highly elliptical orbit as a dedicated **commercial mission** of **NewSpace India Limited (NSIL)**.

- It was launched from **Satish Dhawan Space Centre (SDSC-SHAR)**, Sriharikota
- It is ESA's first launch from India since Proba-1 mission in 2001.
- **Polar Satellite Launch Vehicle (PSLV)** is the third generation launch vehicle.

Proba-3 Mission

- **Type: In-Orbit Demonstration (IOD)** mission.
- **Aim:** Observe the **Sun's corona** through **innovative satellite formation flight**.
- **Achievement:** World's first **precision formation-flying** mission.

Benefits of Commercial Space Launches for India

- **Increase Global Space Economy Share:** India currently holds 2-3% of the total space economy.
- **Revenue Generation:** Over **$279 million** generated from foreign satellite launches (as of 2022).
- **Soft Power:** Commercial satellite launches act as a form of **soft power**, enhancing diplomatic relations.
- **Other Benefits:** Potential for **technology transfer** and fostering international cooperation.

Key Initiatives Facilitating India's Commercial Launch Capability

- Establishment of **IN-SPACe** (Indian National Space Promotion and Authorization Center)
- Indian Space Policy 2023
- **Promoting private space startups** and industries, like Skyroot Aerospace, Agnikul Cosmos.
- Development of **Small Satellite Launch Vehicle (SSLV)**

NewSpace India Limited (NSIL)

- **Genesis:** Set up by the **Department of Space** in **2019** to manage ISRO's commercial activities.
- **Primary Role:** Helps **Indian industries** engage in **high-technology space-related activities**.
- **Focus:** Enables **ISRO** to concentrate on **future space endeavors**.

7.13.2. 100th Launch of the Indian Space Research Organisation (ISRO) From Sriharikota

NVS-02 satellite placed in **Geosynchronous Transfer Orbit** using **GSLV-F15** from **Satish Dhawan Space Centre**, Sriharikota.

- **NVS-02** is Second in **NVS series**, part of **India's Navigation with Indian Constellation (NavIC)** system.

What is NavIC?

- **About: Regional navigation satellite system** by ISRO (erstwhile known as **Indian Regional Navigation Satellite System**).
- **NavIC Network: 7 satellites** – 3 in **geostationary orbit**, 4 in **inclined geosynchronous orbit**.
- **NavIC Services: Standard Position Service (SPS)** for civilians, **Restricted Service** for strategic users.
- **Coverage Area: India + 1500 km** beyond borders.
- **Accuracy:** SPS with **<20m positioning** & **<40 nanoseconds timing** accuracy.
- **Other Navigation System: SPS signals interoperable** with **GPS** (of USA), **GLONASS** (Russia), **Galileo** (European Union) & **BeiDou** (China).

7.13.3. India Becomes 4th Country to Achieve Space Docking

Space docking (joining of two fast-moving satellites in space) was performed by using two small spacecraft i.e. **SDX01 (Chaser), and SDX02 (Target)** of the **Space Docking Experiment (SpaDeX) mission.**

- The US, Russia, and China are the other three countries to perform space docking.

About SpaDeX Mission

- **Mission Goal**
  - Assess **post-docking stability & maneuverability** as a single unit.
  - Enable **spacecraft life extension** for future maintenance & refueling.
- **Mission Life:** Up to 2 years post-docking.
- **Indigenous Technologies Used: ISL (Inter-Satellite Communication Link)**, GNSS-Based RODP Processor,
- **Significance:** Enables **sample return** from the Moon, supports **Bharatiya Antariksh Station (BAS), Satellite Servicing,** etc.

7.13.4. Axiom Mission 4 (AX-4)

Indian astronauts selected for the **Axiom-4 mission** mission have completed initial training.

Axiom Mission 4 (Ax-4)

- **Ax-4** is the **fourth private astronaut mission** to the **International Space Station (ISS)**.
- **Collaboration:** The mission is coordinated by **NASA** and **Axiom Space** (a private US company).
  - **Ax-1:** The **first all-private mission**, launched in **2022**.

7.13.5. First Detailed Mapping of Moon's South Pole

First detailed geological papping of Moon's south pole area made from Chandrayaan-3 Data.

About Chandrayaan-3

- **Objective:** A follow-on mission to Chandrayaan-2 to demonstrate end-to-end capability in safe landing and roving on the lunar surface.
- **Lander and Rover**: Vikram and Pragyan, respectively
- First mission to land in a high-latitude polar region of the moon
- Demonstrated Safe and Soft Landing

Key Findings from Chandrayaan-3's Lunar South Pole Exploration

- **Terrain Types**: **Highlands** and **flat plains** identified.
- **Subsurface Magma Ocean**: Confirmed a **molten lava ocean** spanning the entire Moon.
- **Age**: South Polar Region is **3.7 billion years old**, contemporary to Earth's earliest microbial life.
- **Common Origin with Earth**: Geochemical similarities suggest the Moon and Earth arose from the same **molten material** after a **massive collision** ~4.5 billion years ago.

Significance of Lunar Craters

- Moon's craters have been preserved for billions of years due to no atmospheric erosion.
- Reveal **early solar system history** and help date planetary **geological features**.
- Serve as **time capsules**, preserving records of ancient **space-rock impacts**.

7.13.6. NASA Launches Satellite to Detect Water on the Moon

A SpaceX Falcon 9 rocket launched NASA's **Lunar Trailblazer orbiter** as a secondary payload.

- The primary payload was **Intuitive Machines' lunar lander mission (IM-2)**.
- **IM-2's objective** is to **drill beneath the surface** of the Moon to find **water**.

About Lunar Trailblazer Mission

- **Objective**: Orbit at **~100 km** and collect **high-resolution images** to determine the **form, distribution, and abundance** of water and the **lunar water cycle**.
- **Significance**: Guide future **human missions** to find and extract **water resources**.

Importance of Lunar Water

- **Drinking supply**: Convert into drinkable water.
- **Oxygen**: Process into breathable oxygen.
- **Rocket fuel**: Produce **hydrogen fuel**.
- **Space exploration**: Enables missions beyond the Moon, including **Mars**.

7.13.7. India's First Private Satellite Constellation 'Firefly' Launched

Pixxel launched India's **first private satellite constellation 'Firefly'** aboard **SpaceX's Transporter-12 mission** from the **U.S.**

- **Satellite Constellations** is **network of artificial satellites** with shared control and synchronized functions.
  - **Example**: **Starlink** (largest constellation with 2,146 satellites).

About Firefly

- **Developed by**: Pixxel (Indian space-tech company).
- **Type**: **Hyperspectral Imaging (HSI) satellite constellation**.
- **Features**: **Six high-resolution HSI satellites** for advanced Earth observation.

About Hyperspectral Imaging (HSI) Satellites

- **Function**: Analyzes a **wide spectrum of light**, beyond basic **RGB (red, green, blue) colors**.
- **Capability**: **Spectral fingerprinting** helps distinguish objects in detail.
- **Diverse Applications:** Waste Sorting & Recycling, Agriculture & Vegetation, Food Quality & Safety, Environmental Monitoring, Mineral Exploration

7.13.8. CROPS Experiment

ISRO's **first biological experiment in space** under **CROPS** (Compact Research Module for Orbital Plant Studies) saw **cowpea seeds sprout within four days** aboard PSLV-C60.

About CROPS

- **Developed by**: **Vikram Sarabhai Space Centre (VSSC)**.
- **Objective**: Cultivating plants in **microgravity**.
- **Significance**: A step toward **sustaining plant life in space** for future missions.

7.13.9. Kodaikanal Solar Observatory

International solar conference marks the **125th anniversary** of the **Kodaikanal Solar Observatory**.

About Kodaikanal Solar Observatory

- **Genesis**: Established in **1899**, currently **owned & operated** by the **Indian Institute of Astrophysics**.
- **Location**: **Kodaikanal, Palani Hills, Tamil Nadu**.

- **Reason for Location**: **Proximity to the equator** and **dust-free high-altitude** conditions.
- **Objective**:
  - Study **how the Sun heats Earth's atmosphere**.
  - Understand **monsoon patterns**.

7.13.10. Dark Comet

NASA researchers have discovered more **dark Comets, Oumuamua-like (a messenger from afar arriving first) objects.**

Dark Comets

- Resemble **asteroids** but behave like **comets**.
- Have **less surface area** for material to form tails.
- **Deviate from expected orbits**, with deviation not explained by the **Yarkovsky effect** (heat radiation causing orbital changes).
- Follow **elongated elliptical paths**, coming close to the Sun and then sweeping back to the outer Solar System.

7.13.11. High Risk Food

FSSAI has classified packaged drinking water as 'High Risk Food Category'.

About High-Risk Food

- **Definition**: Ready-to-eat items that support the multiplication of **pathogenic bacteria**, posing health risks.
  - **Examples**: Dairy products, meat (including poultry), fish, and related products.
- **Inspections**: High-risk foods undergo **mandatory risk-based inspections**.
- **Audits**: Central Licensed Manufacturers/Processors of high-risk foods must undergo annual audits by FSSAI-approved **food safety auditing agencies**

7.13.12. Notifiable Disease

The **Ministry of Health and Family Welfare (MoHFW)** has designated **snakebite cases and deaths** as a **notifiable disease**.

- Ministry launched **National Action Plan for Prevention and Control of Snakebite Envenoming (NAPSE)** aims to halve snakebite-related **deaths and disabilities** by **2030**.

What are Notifiable Diseases?

- **Definition**: Diseases required by law to be **reported to government authorities**.
  - Responsibility of reporting lies with **state governments**.
- **Purpose**: Enables authorities to **monitor diseases** and provides early warnings for outbreaks.
- **Examples**: **AIDS, hepatitis, dengue**, etc.

7.13.13. World Malaria Report 2024

World Malaria Report 2024 was released by **WHO**.

Key Findings of the Report

- **Global Malaria Cases**: Increased to **263 million in 2023**, with an incidence of **60.4 per 1000 population at risk**, up from **58.6 in 2022**.
- **WHO African Region**: Accounted for **94% of global cases**.
- **India-Specific Findings**:
  - **Decline in Malaria Cases**: Dropped by **69%** from **6.4 million (2017)** to **2 million (2023)**.
  - **Decline in Malaria Deaths**: Reduced by **68%** from **11,100 (2017)** to **3,500 (2023)**.
  - **HBHI Exit**: India officially exited the **High Burden to High Impact (HBHI)** group in **2024**.

About Malaria

- Caused by **Plasmodium parasites** (a genus of parasitic protozoans), transmitted to humans via bites of infected female **Anopheles mosquitoes**.
- **Malaria Vaccines**: RTS, S/AS01 and R21/Matrix-M
- **Initiatives**
  - **WHO Global Technical Strategy for Malaria 2016–2030**
  - **National Strategic Plan: Malaria Elimination 2023-27**
  - **Promoting Genetically Modified (GM) Mosquitoes** for effective mosquito control

7.13.14. Nanoplastics as Agents of Antibiotic Resistance

According to a study, nanoplastics derived from single-use plastic bottles (SUPBs) contribute to the spread of antibiotic resistance (AR).

Key Findings of the Study

- **Nanoplastics and Microorganisms**: Coexist in diverse environments, including the human gut.
- **Polyethylene Terephthalate Bottle-derived Nanoplastics (PBNPs)**: Facilitate cross-species **gene transfer** from E. coli to Lactobacillus acidophilus (a key human gut bacteria) through **horizontal gene transfer (HGT)**.
  - **Horizontal Gene Transfer (HGT)**: Movement of genetic material between organisms, not from parent to offspring.

About Nanoplastics

- **Definition**: Solid particles of synthetic or heavily modified natural polymers, sized between **1 nm to 1000 nm**.
- **Sources**:
  - **Primary**: Cosmetics, paints, drugs, electronics.
  - **Secondary**: Breakdown and fragmentation of microplastics.

- **Impact**:
  - Easily penetrate **cells and tissues** in living organisms.
  - Found in **human blood**, **liver**, **lung cells**, and **reproductive tissues**.

7.13.15. Extrachromosomal DNA (ecDNA)

Studies reveal how **ecDNA drives cancer progression and drug resistance.**

About Extrachromosomal DNA (ecDNA)

- **Definition**: Small circular DNA fragments that float freely in the nucleus, separate from chromosomes.
- **Evoluation**: Formed due to **DNA damage** (e.g., chromothripsis) or errors during DNA replication.
- **Role in Cancer**:
  - Found in up to **90% of certain tumour types** like brain tumours, liposarcomas, and breast cancers.
  - Contains multiple **oncogenes**, promoting tumour growth and drug resistance.
  - **Oncogenes** are mutated genes capable of causing cancer by activating tumour growth.

7.13.16. Marburg Virus Disease

A recent outbreak of **Marburg Virus Disease (MVD) in Rwanda** has killed at least 15 people, and infected at least 66.

About Marburg Virus Disease (MVD) or Marburg Haemorrhagic Fever

- **Causative Agents**: Marburg virus (MARV) and Ravn virus (RAVV) of the species Orthomarburgvirus marburgense.
  - Primarily through **prolonged exposure** to caves or mines inhabited by **Rousettus fruit bats,** particularly the **Egyptian fruit bat** (Rousettus aegyptiacus).
- **Transmission**: Human-to-human transmission occurs via **direct contact** with the blood, etc.

7.13.17. Diamond Battery

Scientists from **University of Bristol and UK Atomic Energy Authority (UKAEA)** have created world's **first carbon-14 diamond battery**, a sustainable power source that can last thousands of years.

About Diamond Battery

- **Principle**: Uses a **man-made diamond** to generate a small electrical current when placed in a **radioactive field**.
  - Incorporates **carbon-14** (half-life of **5,700 years**), an isotope used in **radiocarbon dating**.
- **Energy Conversion**: Similar to a **solar panel**, it converts energy using **fast-moving electrons** from **radioactive decay**, absorbing short-range radiation without leakage.
- **Potential Applications: Medical Devices** (can power **pacemakers**, **hearing aids**, etc.), **Space Missions** (Ideal for **long-lasting power** for **satellites**), etc.

7.13.18. Milkweed Fiber

Ministry of Textiles encouraging research & development into new natural fibers, including milkweed fiber.

About Milkweed Fiber

- Unique **natural fiber** extracted from **seed pods** of the **milkweed plant** (**Asclepias syriaca L**), found in parts of **India** (**Rajasthan**, **Karnataka**, **Tamil Nadu**).
- **Properties**: Contains **oily material** and **lignin**, making it brittle for spinning; etc.
  - **Applications**: Used in **absorbent materials** and **water-safety equipment** like **life jackets** and **belts**.

7.13.19. Bio-Bitumen

Union Transport Minister inaugurated India's first National Highway made with **Bio-Bitumen** on the **Nagpur-Mansar Bypass** (NH 44).

- **Bitumen**, a black substance from crude oil distillation, is used in road paving and waterproofing due to its adhesive properties.

About Bio-Bitumen

- **Definition**: Petroleum-free alternative to bitumen made from organic materials like bio-char, stubble, lignin, etc.
- **Benefits**: Reduces imports, addresses stubble burning, boosts the bio-economy.
- **Other Sustainable Methods**: Copper slag, geotextiles, cold asphalt mix

7.13.20. Atomic Clock

The UK has developed a **quantum-based atomic clock** with ultra-high precision.

About Atomic clock

- Uses **resonance frequencies of atoms** (e.g., **cesium**, **rubidium**) for extreme time accuracy.
- **Quantum-based clock** loses **less than one second in billions of years**, enabling precise time measurement.
- **Significance**
  - Enhances **Global Navigation Satellite Systems (GNSS)** accuracy.
  - Improves precision in **guided missiles and advanced weapon systems**.

7.13.21. India's First Robotic System Performs Telesurgeries

India's Surgical robotic system, **SSI Mantra**, an indigenous surgical robotic system, successfully performed the world's first **robotic cardiac telesurgeries** with just **40ms latency**.

About SSI Mantra

- **Only robotic system globally** with regulatory approval for **telesurgery and tele-proctoring**.
  - Approved by **Central Drugs Standard Control Organization (CDSCO)** under the **Drugs & Cosmetics Act, 1940**.
- Successfully performed **Totally Endoscopic Coronary Artery Bypass (TECAB)**, a highly complex **cardiac surgery**.

7.13.22. Nanopore Technology

Scientists have developed a **nanopore-based tool** for **faster and more precise** disease diagnosis by analyzing individual molecules.

About Nanopore Technology

- Refers to **nano-scale holes embedded in a thin membrane structure** to detect potential change when charged biological molecules smaller than nanopore pass through hole.
- Enables **real-time sequencing** of **DNA/RNA** directly from biological samples.
- **Applications**: Disease marker detection, Non-invasive early cancer diagnosis, etc.

7.13.23. Nano Bubble Technology

Union Minister of State for Environment launched 'Nano Bubble Technology' for **water purification** at **National Zoological Park, Delhi**.

About Nano Bubble Technology

- **Nanobubbles** have a size of **70-120 nanometers, 2500 times smaller** than a grain of salt.
- **Key Properties**:
  - **Negative surface charge** prevents coalescence.
    - Enable them to separate small particles, **emulsified fats, oils, and grease** from water.
  - **Hydrophobic nature** lifts organic and inorganic materials like surfactants.
- **Applications:** Used in water purification, agriculture, healthcare, food industry, and industrial cleaning.

7.13.24. Mission SCOT

Prime Minister congratulated the **Digantara team** for the success of **Mission SCOT**.

About Mission SCOT (Space Camera for Object Tracking)

- **Aim**: **Mapping space** by **tracking objects**.
- **Benefits**:
  - **Precise tracking** and **imaging** in **Low Earth Orbit (LEO)**.
  - **Enhanced tracking accuracy** of satellites.
- **Contribution**: Strengthens **India's space industry** by improving **space situational awareness**.

7.13.25. Methylcobalamin

FSSAI clarified guidelines for **Methylcobalamin usage** in **health supplements, medical purposes, and nutraceuticals** under specific conditions.

About Methylcobalamin

- **Nature**: An **activated form of Vitamin B12**, crucial for **cell multiplication, blood formation, and protein synthesis**.
  - **Vitamin B12 Role**: A **water-soluble vitamin** essential for **DNA synthesis, RBC production, and neurological function**.
  - **Other Forms Vitamin B12**: **Cyanocobalamin** and **Hydroxocobalamin**.
- **Source**: Milk products
- **Uses**: Diabetic neuropathy pain relief, anaemia treatment, and Alzheimer's disease management.

7.13.26. Human metapneumovirus (HMPV)

China has reported a **surge in HMPV cases**, especially among **children under 14 years**.

About HMPV

- **Nature**: A **respiratory virus** causing mild infections similar to the common cold.
  - It belongs to the **Pneumoviridae family**.
- **Transmission**: Spreads **person-to-person** or via **contaminated surfaces**.
- **Symptoms**: Cough, fever, nasal congestion, shortness of breath.

7.13.27. Norovirus

US Centers for Disease Control and Prevention (CDC) reported a significant surge in **Norovirus** cases.

About Norovirus

- **Nature**: Highly contagious virus causing **gastroenteritis** (stomach flu).
- **Symptoms**: Nausea, vomiting, diarrhea, and abdominal pain.
- **Survival**: Can **withstand freezing** and high temperatures (up to 60°C).

- **Transmission**: Spreads via **faecal-oral route** through contaminated food, water, or direct contact.

7.13.28. Body Mass Index (BMI)

The **Diabetes Foundation India** updated India's obesity guidelines after 15 years, replacing "overweight" with **Obesity Grades I and II**. The 2009 guidelines were based only on BMI.

About BMI

- A **statistical index** used to assess a person's healthy weight range based on height.
- **Formula**: Weight (kg) ÷ Height (m^2).
- **Limitations**: Does not distinguish **lean body mass vs. fat mass** or account for **gender differences**.

7.13.29. Global Antibiotic Research and Development Partnership (GARDP)

WHO and GARDP released a report on policy and regulatory measures to tackle antibiotic shortages in low- and middle-income countries.

About GARDP

- **Genesis:** Not-for-profit organization, established as 2016 by WHO & Drugs for Neglected Disease initiative (DNDi); legally a Swiss foundation (2018).
- **Purpose**: Supports WHO's **Global Action Plan on Antimicrobial Resistance (2015)**.

7.13.30. Neuromorphic Device

Indian Scientists have developed a Neuromorphic device.

About Neuromorphic Device

- **Inspired by the human body's habituation process**—how pain perception decreases with repeated exposure.
  - It Mimics **nociceptors**, the body's pain sensors, to understand and respond to stimuli.
- **Benefit**: Enhances **wearable technology** and **human-machine interactions**.

7.13.31. Titanium

An Indian firm commissioned India's first **Vacuum Arc Remelting (VAR) furnace** for producing **aerospace-grade titanium alloy**.

About Titanium

- **Appearance**: Hard, shiny, and strong metal.
- **Properties**: **Lightweight, corrosion-resistant, high melting point**.
- **Uses**: **Medical implants, power plant condensers, aircraft alloys** (with aluminum).
- **Key Minerals**: **Ilmenite** ($FeO{\cdot}TiO_2$) and **Rutile** (TiO_2)

7.13.32. Pink Fire Retardant (Phos-Chek)

Los Angeles authorities recently used **pink fire retardant** to combat wildfires.

About Phos-Chek

- A **chemical mixture** designed to **slow down or extinguish fires**.
- **Composition**: Contains **ammonium polyphosphate** and other salts, which **last longer** than water.
- The **pink color** enhances **visibility for firefighters**.
- **Concerns**: **Expensive, ineffective** when sprayed via planes, etc.

7.13.33. EU AI Act Becomes Applicable

Rules on **AI Literacy and Prohibited Systems under the European Union AI Act** became applicable.

About European Union AI Act

- **Genesis**: First-ever **legal framework on AI**, in force since **2024**, full implementation by **2026**.
- **Approach**: **Risk-based regulation** – rules vary by the **risk level** of AI systems.
- **Prohibitions**: Lists **AI prohibited practices** (see image), prioritizing **ethics, safety,** and **transparency**.

Impact of the AI Act

- **Global Impacts**
  - **Human-centric focus**: Protects **fundamental rights**, prevents **discrimination**, etc.
  - **Global Benchmark for AI Regulation**: Encourages other nations to adopt **EU-aligned frameworks**.
- **Impact on India**
  - **Risk-based regulation**: India can adopt **AI categorisation by societal impact**.
  - **Global alignment**: Matching **international standards** can boost **global cooperation** and Indian firms' **competitiveness**.

Prohibited AI practices

Biometric Categorisation	Using AI to determine personal attributes from. physical features.
Emotion Recognition	Systems that detect customer emotions during interactions.
Predictive Policing	AI cannot predict criminal behavior based on personal data.
Subliminal Manipulation	UAI's influence on behavior without awareness is prohibited
Social Scoring	Employment decisions based on ethnicity or birthplace are unethical.

7.13.34. Gene Bank for Crops Germplasm

Union Budget 2025–26 announced **2nd National Gene Bank** with **1 million germplasm lines** for **food and nutritional security**.

- **Gene Bank is a** repository of **genetic material** (seeds, pollen, tissues) to prevent **extinction**.

First National Gene Bank

- **Established**: In **1996** by **ICAR-NBPGR**, New Delhi.
- **Structure**: Includes **12 regional stations** for **collection and storage** of crop **germplasms**.
- **Use**: For **research, conservation, crop breeding**.

7.13.35. China's East Creates New Record in Fusion Reaction

- China's Experimental Advanced Superconducting Tokamak (EAST) creates New Record in Fusion Reaction
- **EAST (Artificial Sun)** achieved **1000+ sec steady-state plasma** at **100 million °C**.
- **Tokamak** uses **magnetic fields** in a **donut shape** to confine plasma for **fusion energy**.

Advantages of Nuclear Fusion

- **Abundant & Affordable Fuel**: Uses **deuterium, tritium, hydrogen, etc.**
- **Environmentally Friendly**: **Zero-emission**, no **greenhouse gases**.
- **Safe and Clean**: Produces **helium** and **short-lived tritium**, no **long-term radioactive waste**.

Nuclear Fusion and Fission

	Nuclear fusion is the process by which **two light atomic nuclei combine to form a single heavier one** while releasing massive amounts of energy.
	Nuclear fission **splits a heavy element (with a high atomic mass number) into fragments,** releasing energy.
	Nuclear fusion produces more energy than nuclear fission

Challenges in Nuclear Fusion

- **Extreme Temperature Requirement**: Needs **100+ million °C**.
- **Plasma Containment**: Plasma is unstable and hard to manage.
- **Magnetic Confinement**: Requires strong fields to **suspend plasma** away from reactor walls.

7.13.36. Shatavari

Ministry of AYUSH has launched the "**Shatavari – For Better Health**" campaign to promote awareness of Shatavari's health benefits.

About Shatavari (Asparagus racemosus)

- **Meaning**: Curer of a hundred diseases
- **Description**: Medicinal **woody climber**, grows **1–2 m** in height.
- **Uses**: **Dried roots and leaves** are key ingredients in **Ayurvedic medicine**.
- **Habitat**: Found in **tropical climates** at **low altitudes**, thrives in shaded areas.
- **Distribution**: Native to **Asia, Australia, and Africa**.
- **Health Benefits**:
  - Enhances **female reproductive health** and **hormonal balance**.
  - Aids in **ulcer healing**, boosts **vitality and longevity**, strengthens **immunity**, and supports the treatment of **nervous disorders**.

7.14. TEST YOUR LEARNING

1. With reference to the Genome India Project (GIP), consider the following statements:

1. GIP aims to sequence the genomes of all Indian citizens.
2. It is implemented by the Department of Biotechnology.
3. It has established India's first national bio-repository for genomic data.

Which of the above statements is/are correct?

(a) 1 and 2 only

(b)2 and 3 only

(c) 1 and 3 only

(d) All of the above

2. Consider the following genome sequencing initiatives:

1. IndiGen Program
2. One Day One Genome
3. Human Genome Project (HGP)

Which of the above is/are Indian initiatives?

(a) 1 and 2 only

(b) 1 and 3 only

(c) 2 and 3 only

(d) All of the above

3. Consider the following regarding Genetically Modified Crops in India:

1. Bt Cotton is the only GM crop commercially approved.
2. GM Mustard (DMH-11) has been cleared for trials.
3. The Genetic Engineering Appraisal Committee functions under the Ministry of Science & Technology.

Which of the above statements is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) All of the above

4. What makes quantum computing fundamentally different from classical computing?

(a) Use of ultra-fast silicon chips

(b) Ability to process binary data faster

(c) Use of quantum states like superposition and entanglement

(d) Elimination of need for cryptography

5. Consider the following statements about the National Policy for Rare Diseases (2021),

1. It classifies rare diseases into 3 categories.
2. It provides financial assistance of up to ₹50 lakh per patient.
3. CSR contributions can be used for treatment funding.

Which of the following provisions is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) All of the above

(d) 1 only

Mains Questions (2)

Q1. (150 words)

"Genome sequencing holds the key to personalized healthcare and disease prevention in India, but faces ethical and infrastructural hurdles." Examine.

Q2. (250 words)

"India's policy approach towards GM crops must reconcile innovation with biosafety and public confidence." Critically evaluate.

CULTURE

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8.1. IRON AGE IN INDIA

Why in the News?

A groundbreaking study has revealed that **the Iron Age may have begun** in **Tamil Nadu as early as 3,345 BCE.**

More on the News

- **'Antiquity of Iron: Recent Radiometric Dates from Tamil Nadu'** report challenges iron technology first emergence in the **Hittite Empire (1300 BCE, Anatolia, Turkey)**.

Iron Age in India: New Findings

- **Background:** New evidence from now dates to **mid-3rd millennium BCE**.
- **Dating Techniques used in study: Accelerator mass spectrometry radiocarbon** (AMS 14C) and **Optically Stimulated Luminescence (OLS) dating.**
- **Tamil Nadu's Iron Age is the oldest recorded globally.**
  - **Sivagalai:** Iron-related finds dated **3345–2953 BCE**, with a burial urn sample at **1155 BCE**.
  - **Mayiladumparai:** Iron samples from **2172 BCE**.
  - **Kilnamandi:** Earliest-dated sarcophagus burial in Tamil Nadu, from **1692 BCE**.
- **Advanced Metallurgy: Three distinct types of iron-smelting furnaces discovered** at sites including **Kodumanal, Chettipalayam, and Perungalur.**
- **Copper and Iron Age contemporaneous:** Copper Age in north of Vindhyas, Iron Age in south of Vindhyas.
- **Iron Age in India:** While the Harappans belonged to the **Bronze Age**, their successors belonged to the **Iron Age.**

Key Evidences of Iron Age in Different Parts of India

- **Iron Age in North India: Key Pottery Types**
  - **Painted Grey Ware (PGW) (800–400 BCE):** Ghaggar-Hakra River, Rajasthan, and Ganga-Yamuna Divide. Used **mainly for weapons.**
  - **Northern Black Polished Ware (NBPW) (600–100 BCE):** Iron use expanded **for specialized purposes.**
- **Iron Age in South India: Megalithic Culture (1000–100 BCE)**: Associated with habitation sites.
  - **Key Sites**: **Naikund, Vidarbha**, iron-smelting furnace; **Paiyampalli, Tamil Nadu**, Iron Slag.
  - **Iron Usage**: Technological advancement in **fire control for iron extraction.**
- **Iron Age in Other Regions:**
  - **Central India (Malwa)**: Sites like Nagda, Eran, and Ahar (750-500 BCE).
  - **Middle & Lower Ganga Valley:** Post-Chalcolithic pre-NBPW sites Pandu Rajar Dhibi(~750-700 BCE).

Impact of the Iron Age

- **Technological & Economic Impact**: **Metallurgical Advancements.**
  - **Urbanization: India's Second Urbanization (800-500 BCE)** town development in the **Ganga Valley**.
  - **Agriculture:** Iron tools like **hoes and ploughshares** transformed **social & economic structures**.
- **Political & Cultural Influence**
  - **Rise of Mahajanapadas:** Improved food production; **Warfare Evolution:** Iron weapons, armor, etc.
  - **Art & Architecture:** The **Delhi Iron Pillar (4th century CE)** showcases advanced rust-resistant metallurgy.

Conclusion

Palaeolithic, Mesolithic, Neolithic, Chalcolithic, and Iron Ages, this sequence widely regarded as definitive. However, human evolution is not linear—technological advancements vary by region, resources.

8.2. GYAN BHARATAM MISSION

Why in the News?

Union Budget 2025-26 announced the Gyan Bharatam Mission for the survey, documentation, and conservation of India's manuscript heritage.

What are Manuscripts?

- A manuscript is a **handwritten composition on paper, bark, palm leaf**, etc., dating back at **least 75 years with significant scientific, historical or aesthetic value**
- **Lithographs** (A techniques involving drawing on a stone and then transferring the image to paper) and printed volumes are **not manuscripts.**
- **Themes can include** history, religion, literature, astrology, and agricultural practices.
- India possesses an estimated **10 million manuscripts in 80 ancient scripts, with ~75% in Sanskrit and 25% in regional languages**

About Gyan Bharatam Mission

- **Key components** include conservation of manuscript heritage and **creation of a National Digital Repository accessible globally**
- **Nodal Ministry**: Union Ministry of Culture

Other Initiatives for Manuscript Conservation

- **National Manuscripts Mission (NMM):** Launched In 2003, by the Ministry of Tourism and Culture to locate and preserve manuscripts.
- **National Library of India, Kolkata:** It has about 3600 rare and historically important manuscripts.
- **Asiatic Society of Bengal**: Founded on Jan. 15, 1784, by Sir William Jones, undertakes digitization of ancient manuscripts.
- **National Archives of India:** National Archives of India (NAI) is a repository of the non-current records of Government of India and possesses private papers of prominent personalities of India.
- **Indira Gandhi National Centre for the Arts**: It acts as a main resource Centre for the Indian art and culture

Important Manuscripts in India	Author
Natyashastra	Bharata Muni
Mahabharata	Vyasa
Mahabhashya	Patanjali
Prayoga-Ratnamala Vyakarana	Purushottama Vidyavagish
Arthashastra	Chanakya
Aryabhatiya	Aryabhata
Brahmasphutasiddhanta	Brahmagupta
Sushruta Samhita	Sushruta
Ashtadhyayi	Panini
Rajatarangini	Kalhana
Gitagovinda	Jayadeva

Significance of the Mission

- **Fulfills Article 51A(f)** to preserve India's rich cultural heritage
- **Locates unknown manuscript reserves** and creates digital catalogues
- **Creates a resource pool** of scholars in manuscript studies
- Ensures accessibility **to rare texts and facilitates collaborative research**

Challenges in the Manuscript Conservation

- **Environmental factors,** especially India's diverse climate
- **Lack of awareness and cultural neglect: Traditional knowledge stored in manuscripts is often undervalued**
- **Infrastructure deficiencies:** Lack of adequately trained professionals and storage of manuscripts
- **Linguistic and script diversity:** It makes transcription and preservation difficult.

Way Forward

- Digital preservation techniques
- Use of 3D printing technology
- Use of Artificial intelligence (inpainting algorithms)

8.3. COMMUNIST PARTY OF INDIA

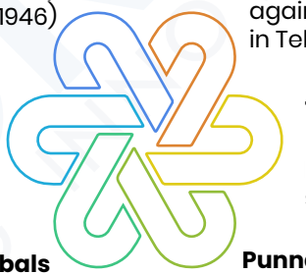
Why in the News?

2025 marks the Communist Party of India's (CPI) 100th foundation day.

About Communist Party of India

- **Formation (outside India): In 1920 in Tashkent, by M.N. Roy** and six others due to disenchantment with the **non-cooperation movement** and inspiration from the **1917 October Revolution.**
- **Formation (inside India):** Announced at the **Kanpur Communist Conference in 1925**.
  - **First President**: Malayapuram Singaravelu Chettiar. The **1st May Day celebration in India** in May 1923 under him.
  - **First general secretaries**: S.V.Ghate and J P Bagerhatta.
  - **Founding members of the party**: Satyabhakta, M.N.Roy, E.T.Roy, etc.
- **Prominent Leaders**: M.N. Roy, Abani Mukherjee, A. K. Gopalan, S.A. Dange, E.M.S. Namboodiripad, etc.
- **Ideology**: Marxism-Leninism, focusing on a socialist state and communist society.
- **Publications**: Ganavani (Bengali), Mehnatkash (Urdu), Kranti (Marathi).
- **Major Goals**: Nationalization of banks, workers' and peasants' rights, land reforms, etc.
- **Key Events:**
  - **Ban**: Declared illegal in 1934, lifted in 1942.
  - **Split**: In 1964 into CPI (pro-Soviet) and CPI(M)(pro-China) over ideological differences.

Overview of CPI-Supported Revolts



Others
Surma Valley Struggle (1936-48)
RIN Mutiny (1946)

Telangana People's Revolt (1946-51)
Armed struggle against landlordism in Telangana

Revolt of the Warlis (1945-47)
Adivasis' revolt against landlords in Maharashtra

Tebhaga Struggle (1946-49)
Demand for fair crop share in West Bengal

Tripura Tribals Struggle (1948-50)
Protest against land alienation in Tripura

Punnapra-Vayalar Struggle (1946)
Workers' resistance in Kerala against the Dewan

Role of CPI in Indian Freedom Struggle

- **Mobilization**: Through **All India Trade Union Congress** (AITUC), **All India Kisan Sabha** (AIKS), etc., mobilized various societal sections such as **women, workers**, etc.
- **Social Reforms**: Advocated for Dalit equality, Hindu-Muslim unity, and fought against colonial repression**. E.g. Satyagraha in Guruvayur** for temple entry.
- **Demand for Full Independence**: First demanded by CPI **in 1921 at Indian National Congress' (INC) Ahmedabad session**.
- **Ideological Influence**: **All India Students Federation,** leading to arrests in **Meerut Conspiracy case 1929**.

Role in Constitution Making

- **Idea of Constitution**: Proposed **by M.N. Roy in 1934**; CPI supported the idea of a constituent assembly.
- **Ideals of Constitution**: Influenced by CPI's push for secularism, justice, land reforms, etc.

8.4. GEOGRAPHICAL INDICATION (GI) TAG

Why in the News?

Union Minister of Commerce & Industry set a target of reaching 10,000 Geographical Indication (GI) Tags by 2030.

About Geographical Indication (GI) Tag

- **Definition:** GI is a sign used on products that have specific geographical origin, possess qualities/reputation.
- **Application:** GI are typically used for any agricultural, natural, manufactured goods or any goods of handicraft.
- **Protection:** GI tagging provides legal protection to the producers.
- **Regulation:** Geographical (Registration & Protection) Act, 1999; DPIIT, Ministry of Commerce and Industry

Current status of GI Tags in India

- First **GI tag** was given to Darjeeling tea in **2004-05.**GI tags issued by the department till July 2024 stands at **605**.
- **Uttar Pradesh** is the leading state in highest number of GI-tagged products followed by **Tamil Nadu.**

Important GI tag goods listed in 2024

- **Uttar Pradesh:** Pilkhuwa Hand Block Print Textile; Banaras Metal Casting Craft; Bareilly Cane & Bamboo Craft;
- **Assam:** Bodo Aronai, Bodo Napham – Fermented Fish, Bodo Ondla etc.
- **Andaman and Nicobar Islands:** Nicobari Mat (Chatrai / Hileuoi), Andaman Karen Musley Rice etc.

Challenges of GI Tags in India

- **Low Registration Rate**: India lags behind **China (9,785 GIs), Germany (7,586)** (World IP Indicators 2024).
- **Regional Disparity**: States like **Karnataka, Tamil Nadu, and Uttar Pradesh** have more GI tags.
- **GI Violations**: Example: **Banarasi silk** is copied in **Surat**.
- **Geographical Disputes**: Multiple states claim GIs for the same product.
- **Post-Registration Issues**: Concerns about definition of a producer and the process.

Initiatives to Strengthen GI Tags in India

- Promoting GI Exports. APEDA facilitates GI product exports, One District One Product (ODOP), Open Network for Digital Commerce (ONDC).

Way Forward

Increasing Awareness; Strengthening Post-Registration Framework; Support for Poor Producers; Resolving State Disputes by collaboration; Conservation-Centric Approach to counter climate change.

8.5. NEWS IN SHORTS

8.5.1 1924 Belgaum Congress Session

Centenary of 1924 Belgaum Congress Session was celebrated in **Belagavi (earlier Belgaum)**, Karnataka on December 26-27.

About 1924 Belgaum Congress session

- **39th** and the **only session** presided over by **Mahatma Gandhi**.
- **Significance**
  - Discussed **'Swaraj' and 'Sarvodaya'.**
  - Revamped Congress structure with a **90% fee cut**, focusing on social change.
  - Held conferences **against untouchability**.
  - Resolutions for **Hindu-Muslim unity, social service, and mandatory khadi spinning.**

8.5.2 Sahitya Akademi

Naga writer Easterine Kire's "Spirit Nights" wins Sahitya Akademi Award 2024. Also, Chaman Arora was awarded **Sahitya Akademi Award 2024 in Dogri** (Spoken in parts of Jammu and Kashmir, Himachal Pradesh and Punjab) for his book "**Ik Hor Ashwthama**".

About Sahitya Akademi

- **Genesis**: **1954**, registered under the **Societies Registration Act, 1860**.
- **Ministry**: Autonomous body under **Ministry of Culture**.
- **Role**: Literary activities in **24 languages (22 scheduled languages, English, and Rajasthani).**
- Recognized as **'India's National academy of letters'.**
- **Major Awards**: Sahitya Akademi Award, Bhasha Samman.

8.5.3 Padma Awards

Ministry of Home Affairs has announced **Padma Awards 2025** on Republic day.

About Padma Awards

- Instituted in 1954, these are one of the **highest civilian Awards of the country.**
- **Conferred by President at Rashtrapati Bhawan in three categories:**
  - **Padma Vibhushan: For exceptional and distinguished service.**
  - **Padma Bhushan: For distinguished service of high order.**
  - **Padma Shri: For distinguished service in any field.**
- Awards are given in various disciplines, **including art, social work, public affairs, science, medicine, literature, sports, and civil service.**
- **Except for brief interruptions in 1978, 1979 and between 1993 and 1997** the names of recipients are announced annually on Republic Day eve.

- **Padma award is purely an honorary recognition with** no monetary benefits or travel concessions attached.

8.5.4 Bharatiya Bhasha Pustak Scheme

Finance Minister has introduced **Bharatiya Bhasha Pustak Scheme** in Union Budget 2025-26.

About Bharatiya Bhasha Pustak Scheme

- **Aim:** To provide **digital books in Indian languages for educational institutions**, enhancing students' **subject comprehension.**
- Aligned with National Education Policy, 2020, **focusing on digital textbooks and learning materials across schools and universities.**
- **Complements ASMITA** (Augmenting Study Materials in Indian Languages through Translation and Academic Writing) **initiative, which aims to develop 22,000 books in 22 Indian languages** over five years.

8.5.5 Deciphering Indus Valley Script

Recently, Tamil Nadu announced $1 Million **prize for experts and organizations for deciphering the scripts.**

About the Script

- **Distribution & Length:** Found at ~60 sites, with ~3500 specimens.
- **Writing Style:** Unknown system, written right to left, sometimes in Boustrophedon style.
- **Composition:** Partially pictographic, includes human and animal motifs.
- **Writing Media:** Used on seals, tablets, copper plates; materials include terracotta, ceramics, stone, bone, metal, wood, and fabric.

8.5.6 Harappan Water Management Techniques

5,000-year-old Water Management Techniques unearthed at Harappan site, **Rakhigarhi (Haryana).**

- **Water storage area** discovered between mounds, with an estimated depth of 3.5 to 4 feet.
- A dried riverbed of the **Chautang (or Drishavati) River,** was also discovered.

Water management practices of the Harappan Civilization

- **Elaborate Drainage:** Underground drains build with precisely laid bricks, connecting houses to public drains.
- **Small Bunds:** Built by the local people to store rain water for irrigation and drinking in **Lothal,** Gujarat.
- **Dockyard:** At Lothal, near Sabarmati River.
- **Channels and Reservoirs:** At **Dholavira, Gujarat,** built completely of **stone** for storing fresh water.
- **Tanks and Wells:** At Mohenjodaro, where rainwater harvested in tanks.
- **Great Bath** at Mohenjodaro was a large tank made of **brick floor**, probably for mass bathing.

8.5.7 Saint Narahari Tirtha

Idol of Saint Narahari Tirtha has been discovered in **Simhachalam Temple**, Vishakhapatnam.

About Saint Narahari Tirtha

- Narahari Tirtha was a prominent **Dvaita Vedanta philosopher, scholar, and saint** of the **13th century**; **disciple of Madhvacharya**; Believed to be born in **Chikakolu town (present Srikakulam, Andhra Pradesh).**
- He introduced **Yaksha Gana and Bayalu Aata** (open theatre drama) as a part of Vaishnava Bhakti Movement.
- He was consecrated near the rock adjacent to Chakratirtha at **Hampi on the banks of river Tungabhadra.**

8.5.8 Kalaripayattu

Kalaripayattu included in the list of demonstration, removed from competition in **38th national games**.

About Kalaripayattu

- Developed in **Kerala,** it is **one of the most ancient martial traditions** (traced to Sangam Period).
- **'Kalari' signifies the training centre** or the place where practice occurs, and **'Payattu' means the fight or rigorous physical practice**.
  - **Two main styles: Vadakkan or Northern style** practiced in the Malabar region of Kerala.
  - **Thekken or Southern Style** practiced mainly in the Travancore region.

8.5.9 Konda Reddi Tribe

Konda Reddi tribe was in news for **preferring live-in relationship** due to expensive traditional weddings.

About Konda Reddi Tribe

- They are recognized as a **Particularly Vulnerable Tribal Group (PVTG).**
- **Habitation: East and West Godavari hill, forest in Andhra Pradesh** and **Khammam districts** of **Telangana.**
- **Mother Tongue**: Telugu.
- **Family and Marriage:** Family is **patriarchal and patrilocal.** Monogamy with polygamous families.
- **Faith and Festivals**: They worship **Muthayalamma** (Village deity), **Bhumi Devi** (Earth Goddess), **Gangamma Devi** (River Goddess) etc., and celebrate festivals like **Mamidi Kotha, Bhudevi Panduga, Gangamma Panduga and Vana Devudu Panduga.**

8.5.10 Hatti Tribe

Boda Tyohar (locally **Magho ko Tyohar**), the largest annual celebration for **Hatti tribes**.

About Hatti Tribe

- **Notified as Scheduled Tribe** under the **Constitution (Scheduled Tribe) Order (Second Amendment) Act, 2023**.
- Named after their tradition of selling homegrown produce at small markets, 'Haat' (weekly markets) in towns.
- Often referred to as **trans-Giri due to their location near the Giri and Tons River.**
- Live in states of **Uttarakhand** and **Himachal Pradesh**.

8.5.11 Kumbh Mela

Maha Kumbh 2025 is being held in Prayagraj, Uttar Pradesh.

About Kumbh Mela

- **World's largest public gathering** and religious pilgrimage celebrated **four times over a course of 12 years.**
- Site keeps rotating between one of the **four pilgrimages**:
  - **Haridwar (Uttarakhand)**, Ganges.
  - **Ujjain (Madhya Pradesh),** Shipra River.
  - **Nashik (Maharashtra),** Godavari River.
  - **Prayagraj** at the confluence of **Ganges**, **Yamuna**, and the **mythical invisible Sarasvati**.
- **Other key Facts**:
  - It has been listed as an **Intangible Cultural Heritage** under **UNESCO** in **2017.**
  - Chinese traveller **Hiuen Tsang** (visited India during King **Harshavardhana**) mentioned it.
  - **Saint Shankaracharya** gave Kumbh Mela its final shape in 9th century.

8.5.12 National Sports Awards

Recently, President of India presented National Sports Award 2024.

Categories of National Sports Awards

- **Major Dhyan Chand Khel Ratna Award (1991-92):** Awarded for **outstanding performances in sports spanning over a period of 4 years**; Gukesh D (Chess), Harmanpreet Singh (Hockey), Praveen Kumar (Para-Athletics), Manu Bhaker (Shooting).;
- **Arjuna Award** (1961): Awarded **for consistent good performance over a period of 4 years.**;
- **Dronacharya Award** (1985): **highest sports honour for coaches**.
- **Major Dhyan Chand Award (2002):** India's highest honour for lifetime achievements in sports.
- **Rashtriya Khel Protsahan Puruskar (2009)**: Awarded to **organisations /corporates (private & public)** & individuals for playing a role in area of sports promotion & development **over last 3 years.**

8.5.13 Vijay Durg (Fort William)

Fort William in Kolkata, recently renamed **as Vijay Durg.**

About Vijay Durg

- Named after **King William III of England**
- Recently renamed as **"Vijay Durg," paying homage to the oldest fort on Maharashtra's Sindhudurg coast**
- Located on the banks of the **river Hoogly**
- Site of the Black Hole Tragedy (June 20, 1756) when Nawab **Siraj-ud-Daula imprisoned British captives.**

8.5.14 Tea Horse Road (THR)

China's Ambassador to India recently posted on X about historic Tea Horse Road.

About THR

- **Connected India to China through Tibet** (less famous than the Silk Road)
- **Network of branching paths from** southwest China to Indian subcontinent
- **Transportation via trains of horses (**ponies and mules) and human porters
- **Main pathways through cities like Dali and** Lijiang (Yunnan province), to Lhasa (Tibet), before branching into India, Nepal, and Bangladesh
- **Origin:** Tang dynasty in China (618-907 CE)
- **Served as a crucial commercial** pathway for centuries

8.5.15 Tantric Buddhism

- A 1.4m Buddha head and stupas (1,500+ years old) found in Ratnagiri, Odisha, **confirm its role as a Tantric Buddhism hub**
- Buddhism has three main schools: **Theravāda (orthodox), Mahāyāna (includes Zen & Pure Land), and Vajrayāna (includes Tibetan Buddhism)**
- **Guru Padmasambhava (Guru Rinpoche/Second Buddha) was instrumental** in establishing Vajrayana Buddhism in Tibet around 8th century CE

Evolution Of Tantric Buddhism

- Tantric Buddhism shifted from **abstract philosophy to sadhana** (practical methods) for enlightenment
  - **Vajrayāna/Tantric Buddhism focuses on esoteric healing and social transformation;** prevalent in Bhutan, Mongolia, Nepal and Tibet
  - Mahayana Buddhism introduced **mantras & rituals, leading to Mantrayana (early Tantra) & Paramita-yana branches**

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- Access to Live as well as Recorded classes on your personal online Student Platform
- Includes Comprehensive, relevant and updated Study material
- Includes Personality Development Programme
- Duration: 12 months and 15 months (With Pre Foundation Program)
- Duration of each class: 3-4 hrs, 5-6 days a week (If need arises, classes can be held on Sundays also)

Live - online / Offline Classes

DELHI : 28 APR, 5 PM | 29 APR, 2 PM | 30 APR, 11 AM
7 MAY, 8 AM | 8 MAY, 11 AM

GTB Nagar Metro (Mukherjee Nagar): 30 APR, 8 AM

हिन्दी माध्यम DELHI: 6 मई, 11 AM | 22 अप्रैल, 11 AM

AHMEDABAD: 7 JUNE | BENGALURU: 6 MAY | BHOPAL: 6 MAY | CHANDIARH: 18 JUNE

HYDERABAD: 14 MAY | JAIPUR: 10 MAY, 18 MAY | JODHPUR: 30 APR | LUCKNOW: 6 MAY | PUNE: 8 MAY

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*: Pre-foundation classes are designed to provide a strong foundation in core UPSC CSE subjects, utilizing NCERTs and basic textbooks. They serve as the initial step in the comprehensive preparation journey for the UPSC Civil Services Examination by providing conceptual clarity in core GS subjects such as History, Polity, Geography, Economy, and Environment. Further, Pre-Foundation Classes act as a transition platform toward the VisionIAS Regular Foundation Course Program, 2026.

8.6. TEST YOUR LEARNING

1. Which of the following statements about the Gyan Bharatam Mission is/are correct?

1. It aims to digitize and conserve India's manuscript heritage.
2. The mission is implemented by the Ministry of Education.
3. Only manuscripts printed after 1900 are covered under the project.

(a) 1 only

(b) 1 and 2 only

(c) 1 and 3 only

(d) None of the above

2. Which of the following is not considered a manuscript under the Gyan Bharatam Mission?

(a) Palm leaf text dated 100 years ago

(b) Lithograph printed in 1850

(c) Bark scroll with historical drawings from 18th century

(d) Handwritten astrology text in Tamil on handmade paper

3. Where was the Communist Party of India (CPI) formally founded inside India?

(a) Calcutta

(b) Tashkent

(c) Bombay

(d) Kanpur

4. Which of the following statements about Geographical Indication (GI) Tags is correct?

(a) GI tags in India are granted by the Ministry of Textiles.

(b) GI protection is limited to agricultural goods only.

(c) The first GI tag in India was awarded to Darjeeling Tea.

(d) Tamil Nadu has the highest number of GI-tagged products.

5. Which of the following statements is correct about the 1924 Belgaum Congress Session?

(a) It was held in Maharashtra and presided by Jawaharlal Nehru.

(b) It was the only Congress session ever presided over by Mahatma Gandhi.

(c) It resulted in the formation of the All India Kisan Sabha.

(d) It called for the immediate drafting of the Indian Constitution.

Mains Questions (2)

Q1. (150 words)

"India's manuscript tradition represents not only cultural memory but civilizational wisdom." In light of the Gyan Bharatam Mission, discuss the significance and challenges of manuscript conservation.

Q2. (250 words)

"The Communist Party of India played a crucial role in shaping India's social and constitutional evolution." Evaluate.

ETHICS

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9.1. INDIC IDEA OF GOOD GOVERNANCE

Introduction

Recent emphasis on **P2G2 (Pro-People Good Governance)** and the **U.S. Department of Government Efficiency** signifies a shift towards better governance.

- This prompts revisiting **India's traditional Rajadharma concepts**, focusing on justice, fairness, and public welfare.

About Good Governance

- Governance is **managing resources for development**, ensuring **inclusivity** and **future-focused decisions.**
- **According to UN, good governance includes** characteristics such as **participatory, consensus-oriented, accountable, etc.**
- **Challenges** include **corruption, accountability, judicial delays**, etc.

Indic Idea of Good Governance

- **Brihadaranya Upanishad**: Stresses the king's duty for equality and protecting the weak.
- **Mundaka Upanishad**: Emphasizes "**Satyamev Jayate**" as a governance principle.
- **Epic Ramayana**: Describes **Ram-Rajya**, ideal governance supporting all.
  - Ayodhya Kanda discusses governance promoting equality.
- **Bhagwat Gita**: Introduces **Adhishthan** (seat of action) for stable governance decisions.
- **Atharvaveda**: Advocates harmony with nature via **Bhumi Suktam hymn**.
- **Thirukural**: Promotes societal order and environmental care.
- **Kautilya's Arthashastra**: Focuses on citizen welfare and public service.
- **Antyodaya**: Aims for upliftment through the weakest, achieving **Sarvodaya**.

Relevance of the Indic Ideas of Good Governance

- **Globalisation**: Indic ideas address public welfare amidst global influences with philosophies like **Vasudhaiva Kutumbakam**.
- **Sustainable Living**: Aligns with **commitments to SDGs and LiFE** from ancient texts like **Atharvaveda**.
- **Preserving Democracy**: Encourages government-citizen cooperation. **E.g. Karmayogi project.**
- **Welfare for All**: Concept of **Antodaya** seen in inclusive programs like **MGNREGA**.
- **Diplomatic Relations**: Kautilya's pragmatism aids modern diplomacy.
- **Conflict Resolution:** Nyaya system suggests mediation-focused justice.

Conclusion

Modern governance aligns with Indic philosophies, aiming for public happiness. Delving into ancient texts can inspire a **SMART (simple, moral, accountable, responsive, transparent) administration**.

9.2. ASPECTS OF PEACE

Introduction

At the 10th Global Forum, UN leaders adopted the **Cascais Declaration** for peace. It stressed intergenerational dialogue for peace, development, and rights.

- Previously, the **UNESCO HK Association's 2012 project** described peace as personal and societal harmony.

Some Philosophical Aspects of Peace

- **Gandhian Conception of Peace**: Gandhi's peace rooted in **Ahimsa** (nonviolence) and **Satya** (truth), emphasizing self-purification and compassion.
- **Utilitarian Concept of Peace**: Peace maximizes happiness, minimizing suffering for collective well-being.
- **Kantian Notion of Peace**: Peace is a moral duty, requiring rationality and international cooperation.

Five Aspects of Peace		
Aspect	**Concept**	**Challenges**
Individual/ Inner Peace	Enables handling life's challenges, reducing stress.	Mental health issues, consumerism.
Social Peace	Promotes harmony in communities through collaboration and justice.	Discrimination, misinformation, prejudice.
Ecological Peace	Stresses sustainable development and environmental balance.	Climate change, lack of environmental cooperation.
Cultural Peace	Encourages respect for cultural diversity.	Ethnocentrism, cultural intolerance.
Political Peace	Supports non-violent relationships across various societal sectors.	Territorial disputes, weak governance, corruption.

Key Stakeholders in Promoting Peace	
Category	**Role in Promoting Peace**
Governments	Set policies, enact laws, enforce regulations, etc.
International Organizations	Mediate conflicts, promote diplomacy, coordinate efforts for global peace and development.
Civil Society Organizations	Advocate for peace, human rights, and social change at local, national, and global levels.
Community Leaders	Resolve conflicts, advocate for justice, etc.
Religious & Spiritual Leaders	Promote peace by advocating for love, compassion, forgiveness, etc.
Mainstream Media & social media	Ensure peace by promoting truthful information, countering misinformation and hate speech.
Individuals	Contribute to peace through tolerance, empathy, etc. in daily life.
Families	Instill values of non-violence, respect, etc. within the family unit.
Educational Institutions	Shape future generations by teaching peaceful values, critical thinking, etc.

Initiatives Undertaken to Restore and Promote Peace

- **Global Peace**: Institutions like the **World Bank and UN** enhance dialogue and cooperation for stability.
- **Political Peace**: The **ICJ and peace treaties** facilitate dispute resolution.
- **Ecological Peace**: The **Paris Agreement** and initiatives like **Earth Hour** tackle environmental issues.
- **Inner Peace**: Events like **International Yoga Day** promote mental health.
- **Cultural Peace**: **UNESCO's World Culture Forums** and **Culture Heritage Programs** foster cultural understanding and preservation.

Conclusion

Peace transcends absence of conflict, embracing harmony, justice, and sustainability in human rights, environment, and economy.

9.3. CONCEPT OF LIBERTY

Introduction

The Supreme Court, in **Arvind Kejriwal vs CBI**, ruled that his detention infringes on his liberty rights under **Article 21**, emphasizing bail as the norm.

Concept of Liberty

- Liberty is the **freedom to act without undue external restraint**. There are two main aspects to liberty.
  - **Negative Liberty**
    - Not concerned with the conditions of society.
    - Focuses on 'freedom from' external constraints.
    - Personal domain of the individual.
    - More negative liberty leads to more individual freedom.
  - **Positive Liberty**
    - Concerned with the enabling conditions of society.
    - Focuses on 'freedom to' engage in actions.
    - Social domain of the individual.
    - More positive liberty checks the excess of individual freedom, which might obstruct social stability.
- **Constraints on liberty** include **legal, social, and economic restrictions**.
  - **Need for Constraints**: Reasonable restraints are required to allow debate without coercion.

Constitutional Framework surrounding Liberty

- **Article 21**: Guarantees no deprivation of life or personal liberty except by law.
- **Article 19:** Grants freedom of speech and expression.
- **Other Fundamental Rights**: Includes equality (**Article 14**), equal opportunities (**Article 16**), and freedom of conscience (**Article 25**).

Key Stakeholders

Stakeholders	Roles/Interests	Ethical Considerations
Individual	Enables handling life's challenges, reducing stress.	Mental health issues, consumerism.
Society	Promotes harmony in communities through collaboration and justice.	Discrimination, misinformation, prejudice.
Government	Stresses sustainable development and environmental balance.	Climate change, lack of environmental cooperation.
Judiciary	Encourages respect for cultural diversity.	Ethnocentrism, cultural intolerance.
Civil Society	Supports non-violent relationships across various societal sectors.	Territorial disputes, weak governance, corruption.

Ethical Frameworks Surrounding Liberty

- **John Stuart Mill's Harm Principle**: Mill advocates for **minimal state interference** in the exercise of liberties, except to prevent harm to others.
  - **Constraints**:
    - **Self-regarding Actions**: These involve only the actor and state or societal restrictions are unjustified.
    - **Other-regarding Actions**: Regulation is permissible if actions affect others.
    - **Example**: In **Navtej Singh Johar vs. Union of India** the Supreme Court decriminalized homosexuality, viewing it as a self-regarding action.

- **Liberty and Rights:**
  - **Connection**: Liberty is linked to rights, ensuring freedom within society.
  - **Principle-based Framework:**
    - Focuses on **moral principles and human rights**, where rights might conflict.
    - **Civil Liberty**: Relies on legal protections for freedom.
- **Isaiah Berlin's Ethical Pluralism**: Berlin suggests multiple, conflicting values are fundamental, emphasizing both positive and negative liberty.

Necessary Safeguards for Liberty

Eternal Vigilance	Democratic Government	Fundamental Rights	Separation of Powers	Independent Judiciary	Rule of Law and Written Constitution	Decentralization of Powers

Ethical Issues with Liberty

- **Liberty vs Security**: Laws like UAPA and NSA balance freedom with security and are often criticized.
- **Speech vs Hate**: Social media exacerbates hate speech and unclear laws lead to enforcement issues.
- **Tradition vs Women's Rights**: Cultural norms challenge women's and transgender rights.
- **Privacy vs Surveillance**: Privacy rights clash with data collection practices.
- **Economic Inequality vs Liberty**: Economic freedom is limited by inequality, affecting access to essentials.

9.4. PERSONALITY IN FOCUS: SHRI TULSI GOWDA (1944-2024)

Introduction

Recently, Shri Tulsi Gowda, an Indian environmentalist, passed away. Known as the "**Encyclopedia of the Forest**" and the "**tree goddess**" for her profound forest knowledge, her legacy continues to inspire environmental conservation.

Tulsi Gowda

Brief about the life of Shri Tulsi Gowda

- **Birth**: Born in 1944 in a **Halakki tribal family** in Karnataka, where **matriarchy** is deeply connected to nature.
- **Early Life and Education**: She did not receive formal education and lost her father at two.
- **Accolades**: Honoured with **Padma Shri in 2021**, India's 4th highest civilian award.
  - Also received the Indira **Priyadarshini Vriksha Mitra Award**.

Key contributions of Shri Tulsi Gowda

- **Respecting Traditional Knowledge**: Her tree planting was based on ecological principles, focusing on native species suited to local conditions.
- **Dedicated Afforestation Efforts**: Planted over 30,000 trees in her lifetime.
- **Reversing Environmental Destruction**: Her work revitalized barren landscapes and restored ecological balance in Karnataka.
- **Fostering Environmental Justice**: Educated communities on conservation, ensuring the welfare of all.
- **Promoting Ecofeminism**: Highlighted women's roles in environmental conservation and economic empowerment.
- **Collective Responsibility**: Involved the community in environmental protection, fostering a collective responsibility.

Conclusion

Shri Tulsi Gowda's legacy is one of inspiration and empowerment, demonstrating how **community-led initiatives** can lead to significant ecological change and emphasizing a culture of care for the environment.

9.5. ETHICAL CONSIDERATIONS IN CONTEMPORARY FOREIGN AID

Introduction

The concept of foreign aid is **facing intense scrutiny after the US suspended** United States Agency for International Development (**USAID**) operations.

About USAID

- **Founded: 1961. Independent agency** to provide worldwide civilian aid
- **Objective:** Operates in **100+ countries to promote democratic values, peace, prosperity, and enhance U.S. security through soft power**
- **Sectors:** Economic development, health, education, food security, humanitarian assistance via **grants and technical assistance**
- **Collaborations:** Works with governments, **NGOs, businesses, and international organizations**
- **Key Programs:**
  - PEPFAR **(President's Emergency Plan for AIDS Relief):** (HIV/AIDS relief)
  - **Feed the Future (hunger/food security)**
  - Power Africa (**electricity access)**
  - **Water for the World Act** (water/sanitation)
- Contributes **42% of all UN-tracked humanitarian aid** (2024)

Ethical Considerations in Contemporary Foreign Aid

Positive Dimensions	Negative Dimensions
Sustainable Growth: Supports education, health, and infrastructure (e.g., India's hydroelectric aid to Bhutan).	**Dependency:** Prolonged aid discourages self-sufficiency (e.g., African nations becoming aid-dependent).
Food Security: Enhances agricultural productivity (e.g., India's training & loans for African agriculture).	**Corruption:** Mismanagement leads to fund diversion (e.g., Sri Lanka's crisis from misused aid).
Health Improvements: Reduces disease prevalence (e.g., India's affordable COVID vaccines).	**Cultural Insensitivity:** Imposed aid programs may clash with local traditions (e.g., reproductive rights issues).
Disaster Response: Saves lives post-disasters (e.g., India's aid in Nepal & Turkey earthquakes).	**Political Manipulation:** Donors may use aid to push their agendas (e.g., China's "debt-trap diplomacy").
Education & Skills: Builds long-term human capital (e.g., Indian Technical and Economic Cooperation program).	**Environmental Harm:** Aid-driven industrialization can cause degradation (e.g., greenhouse gas emissions).

About Foreign Aid

- **Voluntary transfer of resources** between countries, benefiting recipients
- **Forms include economic, military, and humanitarian aid**, mainly from developed to developing nations

Rationales for Foreign Aid

- **Philosophical Views:**
  - **Utilitarianism:** Aid where it helps most people
  - **Rights-Based:** Ensure universal rights
  - **Communitarianism**: Support local culture/community
  - **Libertarianism**: Prefers voluntary/emergency aid
  - **Cosmopolitanism:** Supports global equality
- **National Security**: Stabilize regions, prevent **hostile influences through military and economic support**
- **Economic Development:** Promote growth via infrastructure, healthcare, education; **creates markets for donors**
- **Humanitarian Concerns:** Address crises **like disasters or conflicts**

Types of Foreign Aid

- **Bilateral aid:** government to government
- **Multilateral Aid:** Through International Organizations
- **Humanitarian Aid:** Emergency assistance to alleviate sufferings
- **Development Assistance:** supports sustainable development

Way Forward

- **Increase transparency** in aid through public dashboards and independent audits
- **Prioritize environmental sustainability** focusing on climate resilience and renewable energy
- **Engage local communities** involving local NGOs and leaders in planning
- **Shift to recipient-led aid aligning** with national goals over **donor agendas**
- **Utilize technology** for efficient distribution and monitoring.
- Emphasize building local **capacities for long-term independence.**

9.6. OBSCENITY ON DIGITAL PLATFORMS

Introduction

The Supreme Court urged regulatory measures for vulgar online content while balancing free speech during a case about obscene remarks on YouTube. **The Ministry of Information and Broadcasting** warned OTT platforms **against prohibited content and directed** them to follow **age-based classification per IT Rules, 2021.**

About Obscenity

- 'Obscene' describes **things that are disgusting to senses or sexually offensive, aiming to incite lust.**

Key Stakeholders for Content Streaming on Digital Platforms

- **Content Creators & Artists**: Maintain creative freedom, generate income
- **Digital Platform**: Ensure legal compliance, protect users without excessive censorship
- **Government & Regulatory Bodies**: Define laws balancing free speech with public morality
- **Society at large**: Access desired content with minimal restriction, protect children

Need for Regulating Obscenity on Digital Platforms

- **Preserving Social and Cultural Values**: Unchecked obscene content weakens moral character
- **Protecting Human Dignity:** Content reducing people to objects violates dignity principles
- **Avoiding Normalization of Obscenity:** Mill's Harm Principle suggests expression shouldn't harm society
- **Ethical Responsibility of Platforms**: Utilitarian view that platforms should balance free speech with societal well-being
- **Upholding Constitutional Morality:** Article 19(2) allows reasonable restrictions on freedom of speech

Conflict between Ethics and Law of Banning Content with Obscenity

The conflict **between legal restrictions on obscenity and evolving ethical standards presents a complex challenge in** Indian jurisprudence.

Legal Framework Without Clear Definition

- **The Bharatiya Nyaya Sanhita (BNS)** and IT Act 2000 (Section 67) prohibit obscene content
- **IT Rules 2021 require age-based ratings** for explicit content
- **Additional regulations exist in the Cinematograph Act, Cable TV Act**, and Indecent Representation of Women Act
- **Obscenity lacks explicit definition in criminal law or Constitution,** causing subjective interpretation

Evolving Judicial Interpretation

- Judicial understanding **shifted from the Hicklin test (1964) to community standards test (2014)**
- Defining community standards **remains challenging due to their evolving nature**
- **Justice Patel stated that profane language** alone doesn't constitute obscenity
- **Multiple FIRs for the same offense** can harass the accused and undermine fair defense rights

Ethical Issues in Regulating Obscene Digital Content

- **Vagueness and Subjectivity**: Decency and morality vary across time and regions
- **Censorship vs. Reasonable Restrictions**: Over-regulation could stifle creativity
- **Evolving Social Norms:** Obscenity changes over time (e.g., ancient temple sculptures vs. modern standards)
- **Power Dynamics:** Questions about who decides acceptable content
- **Agency and Paternalism:** Tension between protection and respecting user autonomy
- **Regulating Obscene vs. Artistic Freedom**: Balance between censorship and creative expression

Way ahead

- Define clear, consistent obscenity guidelines considering India's cultural diversity
- Introduce a Broadcasting Bill to regulate OTT content, digital news, and emerging technologies
- Promote self-regulation and ethical storytelling reflecting societal values
- Implement digital literacy programs for youth education

Conclusion

Obscenity varies across cultures and time, requiring legal clarity, self-regulation, public awareness, and global cooperation. Digital platforms must balance creative freedom with social responsibility through ethical values.

9.7. SURVEILLANCE CAPITALISM

Introduction

Digital information has grown from 1% in 1986 to 98% by 2013, making personal data the "new gold." This transformation has created Surveillance Capitalism, where human experiences are harvested for profit by tech giants, raising ethical, social, and regulatory concerns.

What is Surveillance Capitalism?

- **Definition**: An economic system where corporations collect, analyze, and monetize personal data to predict and influence behavior for profit
- **Mechanism:** Operates through data extraction from platforms, predictive analytics using AI, and influence techniques to shape choices

Traditional Capitalism vs. Surveillance Capitalism

Feature	Traditional Capitalism	Surveillance Capitalism
Resource base	Labor and natural resources	Personal data
Value creation	Mass production of goods	Behavioral modification
Profit model	Selling products	Monetizing data via ads
Example	Steel mills, automobile factories	GoogleAds , Amazon recommendations

Categories of surveillance Capitalism

- **Corporate Surveillance:** Companies collect vast amount of user data for targeted advertising.
- **State-Corporate Nexus:** Governments collaborate with private firms under the pretext of security and intelligence.

Ethical Implications of Surveillance Capitalism

- **Manipulation:** Algorithms exploit cognitive biases to shape decisions
- **Privacy Erosion:** Data often collected without proper consent
- **Commodification of Personal Data:** Sensitive data bought and sold like commodities
- **Unfair Commercial Practices:** Lack of transparency about data usage
- **Democratic Violations:** State and corporate surveillance weakens citizen autonomy
- **Mental Health Risks:** Engagement-maximizing content causes stress and polarization

Challenges in controlling the Surveillance Capitalism

- **Regulation:** Existing laws fail to dismantle core practice of commodifying data
- **Technology:** Rapid evolution of AI and IoT outpaces regulatory frameworks
- **Corporate-State Collusion:** Alignment of interests complicates accountability

Efforts to regulate Surveillance Capitalism

- **Global**
  - **EU's General Data Protection Regulation GDPR (2018):** Enforces data consent and imposes fines
  - **California Consumer Privacy Act (2020):** Grants residents rights over personal data
- **India**
  - **K.S. Puttaswamy Case (2017):** Supreme Court declared privacy a fundamental right
  - **Digital Personal Data Protection Act (2023):** Requires consent and allows data access/erasure

Way Forward

- **Stronger Regulatory Frameworks:** Enact adaptive laws with clear accountability
- **User Empowerment**: Promote data literacy and transparent consent
- **Antitrust Measures**: Break up tech monopolies to reduce unchecked power
- **Global Cooperation:** Harmonize international standards to prevent exploitation
- **Ethical Technology Design:** Encourage privacy-by-design to reduce surveillance incentives

9.8. RAGGING IN INDIA

Introduction

Kerala High Court has directed the state government to create a working group to draft rules for anti-ragging law enforcement amid rising incidents.

What is Ragging?

Ragging is **systematic and sustained physical, mental and sexual abuse** of freshers or junior students at educational institutions by senior students and sometimes outsiders in campus and hostel.

Challenges in Eradication

- **Deep-Rooted Cultural & Traditional** Acceptance as a rite of passage
- **Lack of Awareness** about anti-ragging helplines
- **Fear of Retaliation** preventing reporting
- **Lack of Strict Enforcement** allowing perpetrators impunity
- **Role of Institutions** downplaying enforcement to protect reputation

On Victims (Junior Students)	On Family
Low Self-Esteem and Confidence due to degrading nature Post-Traumatic Stress Disorder including flashbacks and anxiety Decline in Academic Performance leading to loss of focus	Emotional and Psychological Distress causing helplessness Financial Burden for counselling or treatment Loss of Trust in Institutions
On Institutions	**On Perpetrators**
Loss of Reputation affecting funding and enrollment Undermines Ethical Values within educational institutions Administrative Challenges including lawsuits and scrutiny	Career Setbacks affecting future employment Erodes moral authority among peers Moral and Ethical Degradation

Anti-Ragging Legal Frameworks in India

- **Raghavan Committee Recommendations (2007)**
  - Accreditation should factor incidents of ragging
  - Set up Anti-Ragging Cells, Committees and Squads
  - Establish 'Mentoring Cell' involving senior students
  - Launch effective advertisement campaigns
  - Include awareness against ragging in education curriculum
- **Accreditation**: National Assessment and Accreditation Council bodies should factor incident of ragging while accrediting institutions.
- Set up **Anti-Ragging Cells, Anti-Ragging Committee and an Anti-Ragging Squad.**
- **Setting up of 'Mentoring Cell'** in each institution to oversee and involve senior students as Mentors for the 'fresher'.
- **Advertisement:** Launch effective advertisement campaigns at the national and regional level regarding **`zero tolerance'** towards ragging.
- **National Council of Educational Research and Training (NCERT) and State Council of Educational Research and Training (SCERT)** should devise Human Rights education of which awareness against ragging should be a compulsory part.

UGC Regulations on Curbing Ragging (2009)

- **Ragging is a criminal offense** with mandatory regulations
- **Joint sensitization programmes** required during admission
- **Burden of Proof lies on perpetrator,** not victim
- **Police, local administration and institutions** must ensure vigilance

Steps to be taken

- Implement **Peer Support systems.**
- **Prioritize Safety of students** over institutional reputation.
- **Follow 2009 Supreme Court Directives** including displaying contact details, informing parents, installing CCTV, and conducting surprise inspections..

9.9. TEST YOUR LEARNING

Mains Questions (2)

Q1. (150 words)

"Indic philosophy offers timeless principles of good governance that resonate with modern democratic ideals." **Discuss.**

Q2. (250 words)

"Ahimsa, Satya, and Vasudhaiva Kutumbakam are not merely ethical ideals, but strategic principles for global peacebuilding." Elaborate.

10. SCHEMES IN NEWS

10.1. Samarth (Scheme for Capacity Building in Textiles Sector)

Why in the News?

Recently, Government extended **Samarth scheme till March 2026**, with a budget of ₹495 crores **to train 3 lakh persons in textile-related skills.**

Objectives

- To deliver **NSQF-compliant training in textiles** (excluding spinning/weaving) for better job prospects.
- To **skill, upskill/reskill** in handlooms, handicrafts, etc. for **sustainable livelihoods** through wage or self-employment nationwide.

Salient Features

- **Ministry**: Ministry of Textiles;
- **Launch year**: 2017.
- **Valid till:** March 2026.
- **Implementing Agencies: Textile industry, Institutions of Ministry of Textiles/State Governments** with training infrastructure and industry tie-ups and **reputed training bodies** (NGOs, Trust, etc.).
- **Implementation Framework**: Aligned with **Ministry of Skill Development & Entrepreneurship's (MSDE) policy** for skill development such as **National Skills Qualifications Framework (NSQF).**
- **Branding of the Training Centre**: Must follow government branding guidelines.
- **Selection of Trainees**: Preference to marginalized groups like **women, SC/ST, differently abled, minorities, BPL, and Aspirational Districts.**
- **Current Status**: Trained 3.27 lakh (**88.3% women**) of which 79.5% are already employed.
- **Funding**: Covers costs under MSDE's Common Norms.
- **Management Information System (MIS)**: Web-based platform for monitoring and registration.
- **Aadhaar Based Biometric Attendance**: Mandatory with **minimum 80% attendance** for assessment.
- **Soft Skills**: Like **life management skills** included alongside hard skills.
- **Assessment and Certification**: Third-party mandatory.
- **Grievance Redressal**: Via **call center, mobile app, or scheme website**, escalated if unresolved in 15 days.
- **Employment linkage**: Mandatory placements with 70% placement for entry-level and 90% for upskilling.

10.2. Pradhan Mantri Fasal Bima Yojana (PMFBY)

Why in the News?

Union Cabinet approved continuation of PMFBY and Restructured Weather Based Crop Insurance Scheme till 2025-26.

About PMFBY

- **Objective:** Financial assistance to farmers who experience crop losses.
- **Launch**: 2016
- **Ministry**: Agriculture & Farmers Welfare
- **Implementing Agency**: Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW), Ministry of Agriculture & Farmers Welfare (MoA&FW), Ministry of Agriculture & concerned State.
- **Risks Covered**:
  - **Yield Losses (Standing Crops on Notified Area Basis):** Natural Fire & Lightning, Storms, Cyclones, Hurricanes, Tornadoes Pests & Diseases, etc.
  - **Post-Harvest Losses**: Covers 14 days for crops left in fields.
  - **Localized Calamities**: Hailstorms, landslides, inundation.
  - **Wild Animal Damage (Add-on)**: States may offer coverage.
- **Exclusions**: War, riots, malicious damage, theft, grazing, and preventable risks.
- **Premium**: Kharif – 2%, Rabi – 1.5%, Commercial/ Horticulture – 5%
- **Eligibility**: All farmers, including sharecroppers & tenant farmers
  - Optional for all farmers since Kharif 2020.

Crop Coverage		
Food crops (Cereals, Millets, Pulses)	Oilseeds	Commercial & horticultural crops

10.3. Beti Bachao Beti Padhao Scheme

Why in the News?

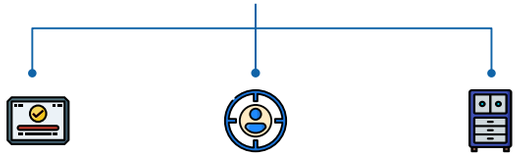
Ministry of Women and Child Development (MoWCD) celebrated the 10th anniversary of BBBP Scheme.

About BBBP Scheme

- **Objective:** Improve the child sex ratio, Prevent gender-biased, sex selective elimination, etc.
- **Launch**: 2015

- **Type**: Centrally Sponsored (100% funded by Centre under **Mission Shakti – Sambal**).
- **Scheme Components: Advocacy Campaigns, Gender-Critical District Interventions** and **Financial Incentives**
- **Ministries Involved: MoWCD, Ministry of Health & Family Welfare (MoH&FW)** and **Ministry of Education (MoE)**

Key Initiatives taken under BBBP Scheme



Digital Guddi-Gudda Board: Tracks gender disparity & schemes

My Aim My Target: ecognizes top girl students

Bal Cabinet: Simulated governance & leadership training for girls

10.4. Sukanya Samriddhi Yojana

Why in the News?

Sukanya Samriddhi Yojana (SSY) has completed ten years.

About SSY

- **Objective**
  - To promote the **welfare of Girl Child.**
  - To help parents build funds for higher education and other expenses for their girl child
- **Launch**: 2015 under **Beti Bachao, Beti Padhao** campaign.
- **Deposits & Contributions**:
  - **Min ₹250, Max ₹1.5 lakh/year** (deposits allowed for **15 years**).
  - **Tax-free (EEE status)** under Section **80C** of the IT Act.
    - **Interest rate** revised quarterly by **Ministry of Finance**.
- **Maturity & Withdrawals**:
  - **Maturity** at **21 years** (or **marriage after 18 years**).
  - **50% withdrawal** allowed after **18 years or Class 10**.

Eligibility

Open to girl child below 10 years by natural/legal guardian.

One account per girl, maximum two accounts per guardian.

10.5. Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA)

Why in the News?

Government approves continuation of the integrated PM-AASHA Scheme **till 2025-26** during the 15th Finance Commission cycle.

About PM-AASHA Scheme (2018)

- **Objective:** To provide **price assurance** for **pulses, oilseeds, and copra**, ensure **financial stability**, reduce **post-harvest distress selling**, and promote **crop diversification**.
- **Ministry**: Ministry of Agriculture & Farmers Welfare
- **Type**: Central Sector Scheme
- **Fund Allocated**: ₹35,000 crore during **15th Finance Commission Cycle**

Components of PM-AASHA	
Price Support Scheme (PSS)	**Notified Pulses, Oilseeds, and Copra** procured at **MSP** from **pre-registered farmers** by **Central Nodal Agencies (CNAs)** through State agencies.
Price Stabilization Fund (PSF)	Provides **working capital** and covers **incidental expenses** for procurement/ distribution of **agri-horticultural commodities** (e.g., Tomato, Bharat Dals, Bharat Atta, Bharat Rice).
Price Deficiency Payment Scheme (PDPS)	**Direct payment** of the difference between **MSP and selling/modal price** by the Centre for oilseeds, up to **15% of MSP value**.
Market Intervention Scheme (MIS)	Aims to bridge **price gaps and counter price volatility in perishable agri/horticulture commodities** (e.g., Tomato, Onion, Potato) not covered under MSP.

10.6. TEST YOUR LEARNING

1. With reference to the Samarth Scheme, which of the following statements is/are correct?

1. It aims to provide NSQF-aligned training in all textile sectors including spinning.
2. It includes soft skill training and placement-linked modules.
3. Aadhaar-based biometric attendance is mandatory.

Select the correct answer:

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) All of the above

2. Which of the following are key features of the Pradhan Mantri Fasal Bima Yojana (PMFBY)?

1. Post-harvest coverage for 14 days
2. Coverage for wild animal damage (optional add-on)
3. Compulsory for all farmers since 2020
4. Covers localized calamities

Choose the correct option:

(a) 1, 2 and 4 only

(b) 2, 3 and 4 only

(c) 1, 3 and 4 only

(d) All of the above

3. Under PMFBY, which of the following risks are excluded from coverage?

1. Pest and disease
2. Grazing by stray animals
3. Hailstorms
4. Riots and war

Select the correct answer:

(a) 1 and 2 only

(b) 2 and 4 only

(c) 1, 3 and 4 only

(d) All of the above

4. Consider the following about Beti Bachao Beti Padhao (BBBP) Scheme:

1. It aims to improve the child sex ratio and promote girls' education.
2. It is implemented by the Ministry of Health and Family Welfare.
3. The scheme recently celebrated its 10th anniversary.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 1 and 3 only

(c) 2 and 3 only

(d) All of the above

5. Which of the following provisions apply to the Samarth Scheme?

1. Training centres must follow government branding guidelines
2. Third-party certification of training outcomes is mandatory
3. Trainee selection prioritizes aspirational districts and marginalized groups

Choose the correct answer:

(a) 1 and 2 only

(b) 2 and 3 only

(c) All of the above

(d) 1 and 3 only

Mains Questions (2)

Q1. (150 words)

"Skill development schemes like Samarth are essential to bridge India's employability gap, especially for vulnerable groups." Discuss.

Q2. (250 words)

"Agricultural risk insurance schemes like PMFBY must strike a balance between affordability, inclusion, and timely compensation." Critically examine.

ANSWER KEY

Polity

1	2	3	4	5
Answer: C	Answer: C	Answer: B	Answer: D	Answer: A

International Relations

1	2	3	4	5
Answer: B	Answer: A	Answer: B	Answer: B	Answer: B

Economy

1	2	3	4	5
Answer: C	Answer: D	Answer: A	Answer: D	Answer: A

Security

1	2	3	4	5
Answer: B	Answer: B	Answer: A	Answer: C	Answer: C

Environment

1	2	3	4	5
Answer: C	Answer: B	Answer: A	Answer: B	Answer: B

Social Issue

1	2	3	4	5
Answer: B	Answer: A	Answer: A	Answer: C	Answer: B

Science and Technology

1	2	3	4	5
Answer: B	Answer: A	Answer: A	Answer: C	Answer: C

Culture

1	2	3	4	5
Answer: A	Answer: B	Answer: D	Answer: C	Answer: B

Schemes in News

1	2	3	4	5
Answer: B	Answer: A	Answer: B	Answer: B	Answer: C

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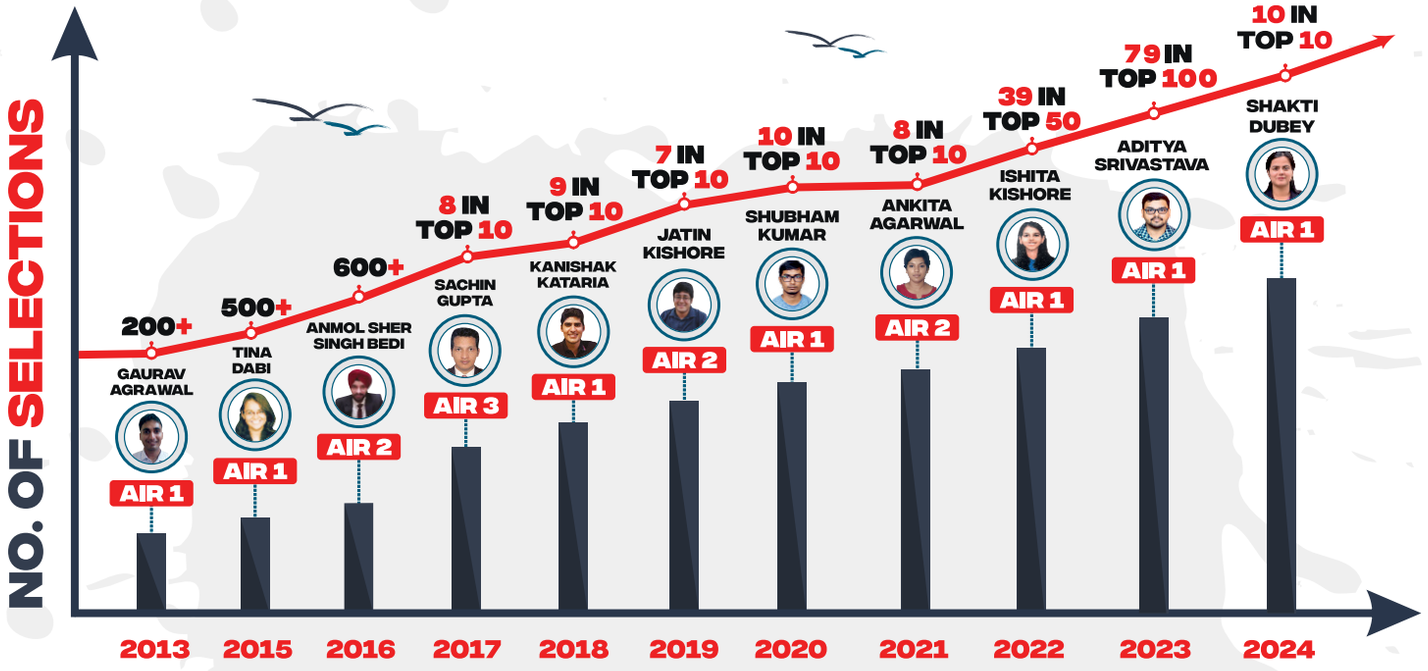

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