

Current Affairs

Workbook

January 2025



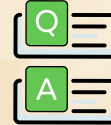
Mains Questions



Ethics Case Studies



Progress Tracking Table



MCQs



Quick facts



Comprehensive Summary



True/ False

Self-Evaluation

Progress Tracking Table

Activity Type	Total Questions	Correct Answers	Attempted	Score/Percentage
MCQ's				
True/False Statements				

Monthly Learning Summary

Top 3 Learnings/Insights

-
-
-

Progress Comparison

Previous Month's Score: _____

Current Month's Score: _____

Areas for Improvement: _____

Reflection Section

Strengths: _____

Areas for Improvement: _____

Goals for Next Month: _____



AHMEDABAD



BENGALURU



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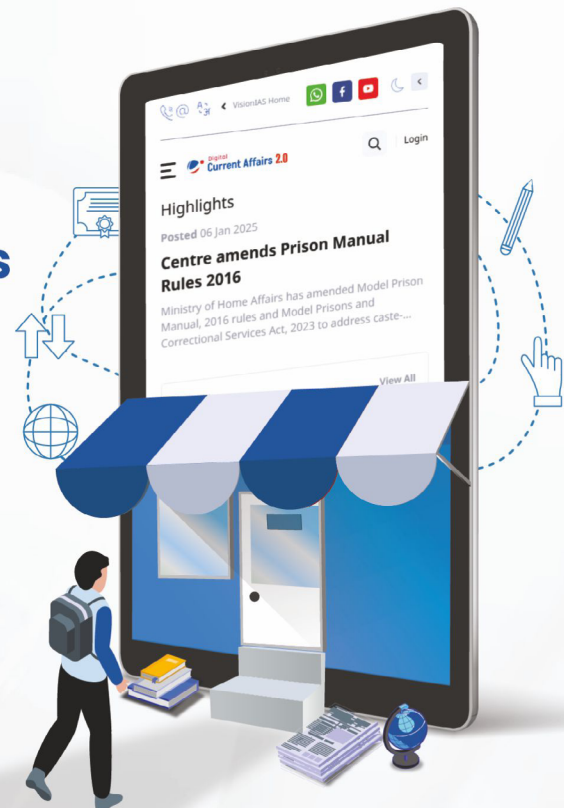
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LAUNCHING SOON



From the Editor's Desk

Dear Readers,

This January edition of the Workbook continues to bring you a structured and practical approach to mastering current affairs. By engaging with the Workbook after studying the Monthly Current Affairs Summary, you will reinforce your understanding and develop the analytical depth required for competitive examinations.

The Workbook presents key events and news in a concise and structured format for better retention. For instance, in the Polity and Governance section, we explore significant developments such as the **10 Years of NITI Aayog**, the role of **Lokpal and Lokayuktas in tackling corruption**, and the **Election Commission of India's 75th Anniversary**, shedding light on its evolving role in electoral integrity.

In **International Relations**, India's diplomatic engagements take center stage, including **India's shifting approach towards Afghanistan**, the **Indus Water Treaty dispute resolution**, and India's growing cooperation with the **EU, QUAD, and ASEAN nations**. These events highlight India's evolving global influence and strategic priorities.

The **Economy** section delves into critical updates such as **Rupee Depreciation**, the **Fiscal Health Index 2025**, and the **Household Consumption Expenditure Survey 2023-24**, providing insights into India's macroeconomic trends.

This structured approach extends across other sections like Social Issues, Environment, Science & Technology, Ethics, and Government Schemes, ensuring comprehensive coverage of relevant topics.

How the Workbook is Organized?

1. **Summary of the Monthly Magazine:** A concise overview of the month's key developments.
2. **Quick Facts Block:** Essential facts, figures, and statistics for rapid revision.
3. **Activities Block:**



MCQ's : Test your understanding of key topics.



True/False Statements : Verify critical facts.



Mains practice Questions : Develop structured and analytical responses.



Ethics Case Studies : Apply current affairs to ethical dilemmas for better decision-making.



Answers and Explanation : Immediate feedback for self-assessment.

4. **Progress tracking table :** Monitor your learning and identify areas for improvement.

We encourage you to practice consistently, engage with the material actively, and make this Workbook your trusted companion in UPSC preparation. With the right approach and determination, success is within your reach.

Warm regards,
Team Current Affairs,
VisionIAS



“**Success is not final, failure is not fatal: it is the courage to continue that counts.**”
– Winston Churchill

POLITY AND GOVERNANCE



1.1. 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)**.

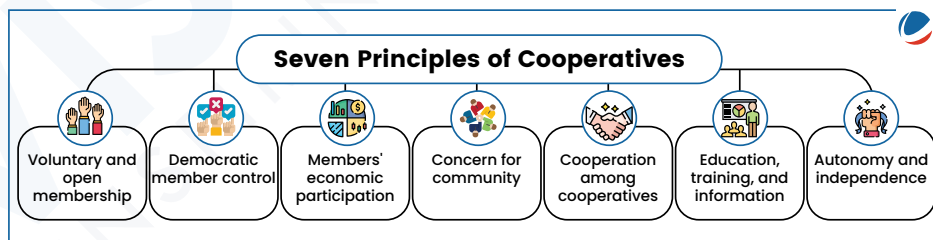
About IYC 2025

- **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 Samridhi."



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**

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**

→ **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.

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	<ul style="list-style-type: none"> ↻ National Cooperative Development Corporation (NCDC) (1963) ↻ Ministry of Cooperation (2021) ↻ National Cooperative Policy
Legal & Governance Reforms	<ul style="list-style-type: none"> ↻ Multi-State Co-operative Societies (Amendment) Act, 2023 ↻ Model Bye-Laws for PACS
Economic & Infrastructure Growth	<ul style="list-style-type: none"> ↻ 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	<ul style="list-style-type: none"> ↻ 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.

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.

1.2. 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.

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

1.4. 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.

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)**.

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.

1.5. 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
<ul style="list-style-type: none"> ➤ 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. 	<ul style="list-style-type: none"> ➤ Economic Loss: \$1.9 billion, \$118 million in investment lost in first half of 2023. <ul style="list-style-type: none"> ➔ 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.

1.6. News in Shorts

1.6.1. 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.

1.6.2. Designing Innovative Solutions for Holistic Access to Justice (DISHA) Scheme

Hamara Samvidhan – Hamara Swabhimani Campaign launched to mark the 75th anniversary of India's Constitution and Republic status under the DISHA Scheme.

About DISHA Scheme

- **Launch:** Initiated in **2021** by the **Department of Justice**, Ministry of Law and Justice, spanning 2021–2026.
- **Aim:** To ensure "**Justice**" as per the **Preamble and Articles 39A, 14, and 21** of the Constitution.
- **Other:** Enhances **Tele-Law**, **Nyaya Bandhu** (Pro Bono Legal Services), and **Legal Literacy programs** in scope and quality.

1.6.3. 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.

Prisons in India

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

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**.

1.6.4. Doctrine of Merger

Recently, the Supreme Court emphasized the **Doctrine of Merger**.

About Doctrine of Merger

- Explained in **Kunhayammed v. State of Kerala, (2000)**.
- Under this doctrine, **only one decree or order governs a subject at a time**.
- Thus, **once a superior court rule**—by altering or affirming the lower court's decree—**its order becomes final**, merging the lower court's decision.

1.6.5. 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.

1.6.6. 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.

1.6.7. 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.

1.6.8. Pay Commission

Union government approved the **Eighth Pay Commission**.

About Pay Commission

- Formed by **central government**.
- **Since 1947, seven** commissions established.
 - ➔ 7th Pay Commission, implemented in 2016, ends in 2026.
 - ➔ Chaired by Justice Ashok Kumar Mathur.
- **Role:** Sets salaries, allowances, and benefits for government employees.

1.6.9. Edelman Trust Barometer

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

- 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.

INTERNATIONAL RELATIONS



2.1. 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

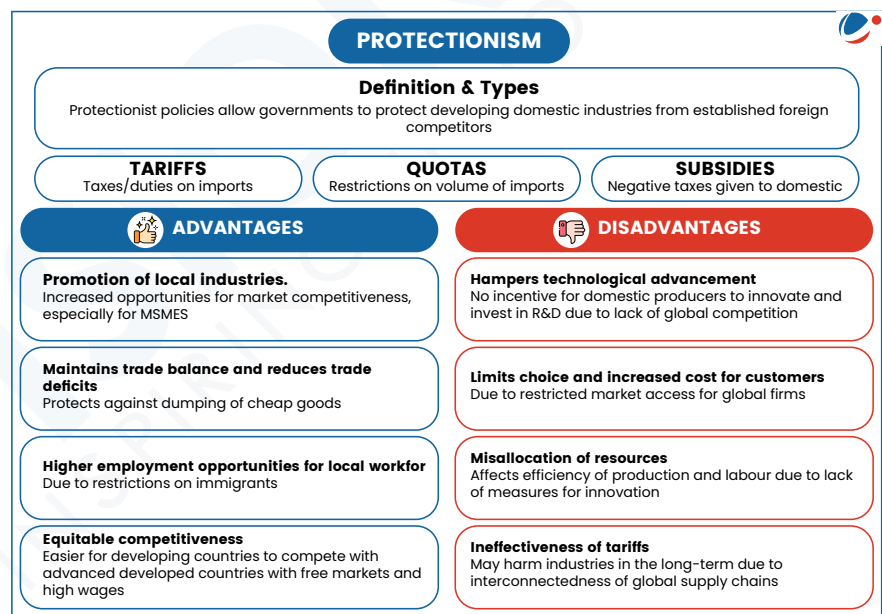
- ➔ USA had earlier exited **Paris Agreement in 2017** but rejoined in 2021 and initiated process of withdrawal from **WHO in 2020**, reversed in 2021.
- ➔ USA is also engaged in a tariff war to reduce **trade deficit** of the USA.
- ➔ These protectionist measures are being promoted as idea of **economic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

- **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. 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. World Health Organization (WHO)

Why in the News?

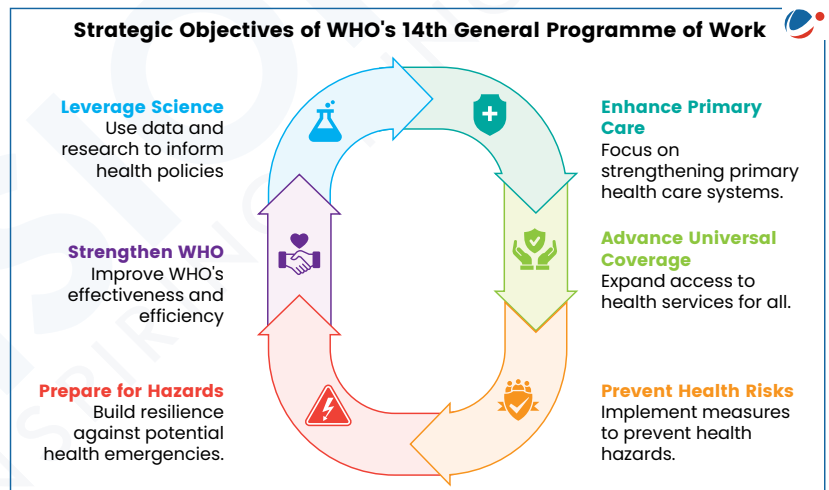
United States announced its withdrawal from WHO, pausing transfer of any funds, support or resources to WHO.

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.**
- ➔ **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.**

2.5. Indus Water Treaty

Why in the News?

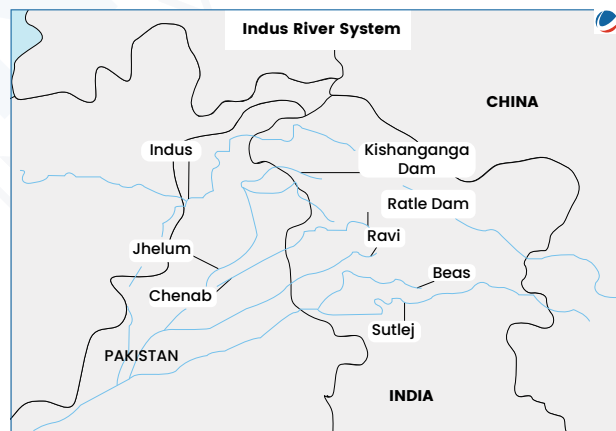
Recently, the **World Bank appointed Neutral Expert on Indus Water Treaty (IWT)** has backed India's position on its **competence to decide the outcome** of a dispute over two hydroelectric projects in India's Jammu and Kashmir.

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**.
- ➔ **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.**

2.6. 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.

2.7. QUAD Grouping

Why in the news?

Quadilateral Security Dialogue Quad marked the 20th anniversary of Quad cooperation.

About Quad

- ➔ **Formalisation** led by the then **Japanese PM Shinzo Abe in 2007**.
- ➔ **Members:** Australia, India, Japan, and the U.S
- ➔ **Nature:** An **informal strategic partnership** and an **alliance of maritime democracies**.
- ➔ **Purpose:** Supports an **open, stable, and inclusive Indo-Pacific**.
- ➔ **Working:** six Leader level Working Groups in **six areas: Climate, Critical and Emerging Technologies, Cyber, Health Security Partnership, Infrastructure and Space**
- ➔ **Global Footprint:** 24% of the world's population, 35% of global GDP and 18% of global trade.
- ➔ **Relevance of QUAD for India:** Strategic Counterbalance, Maritime Security, Economic Cooperation and Health & Humanitarian Aid.

Changing Dynamics of QUAD: From Military to Economic Alliance

Though not a formal military bloc, QUAD has evolved from a military-focused group to a broader alliance emphasizing economic cooperation and regional stability amid global shifts.

- ➔ **Military Focus (Initial Phase):**
 - ➔ **Bolsters maritime security**, domain awareness, and a free Indo-Pacific via Malabar Exercises & 2+2 Dialogue (India-U.S.).
 - ➔ **Strengthening the Quad Act (2024)**, including a Quad Intra-Parliamentary Working Group.
- ➔ **Economic Expansion (Recent Phase):** Post-COVID, QUAD prioritizes sustainable development, including:
 - ➔ The Wilmington Declaration, Health Security Partnership, Quad Cancer Moonshot, Indo-Pacific Logistics Network, Quality Infrastructure (Ports of the Future), etc.

Challenges faced by QUAD

- ➔ **Lack of Institutional Framework** and **Unequal Burden-Sharing**.
- ➔ **Conflicting Partnerships** and **Diverging China Strategies**.
- ➔ **India's Specific Concerns: Geopolitical Strains** and **Different Indo-Pacific Visions** as India focuses on the Indian Ocean, while others emphasize the Pacific.

Way Forward for Strengthening Quad

- ➔ **Defining a Clear Indo-Pacific strategy**.
- ➔ **Expanding Membership** and **Strengthening India's Maritime Strategy**.

2.8. Shift in India–Afghanistan Relations

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.

2.9. 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.

2.10. 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

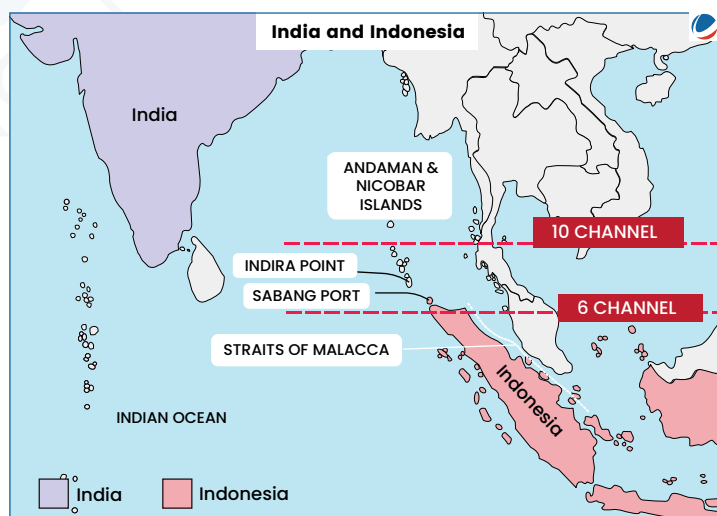
- ➔ **Economic engagement:** India-Indonesia Economic and Financial Dialogue (EFD Dialogue) (2023 and Maritime Security E.g. Safety of Navigation in the Straits of Malacca and Singapore (SOMS).
- ➔ **Defence and Security:** Bilateral exercises **Garuda Shakti** (Army) and **Samudra Shakti** (Navy), and 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.

2.11. News in Shorts

2.11.1. 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.

2.11.2. 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.

2.11.3. 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.

2.11.4. 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).

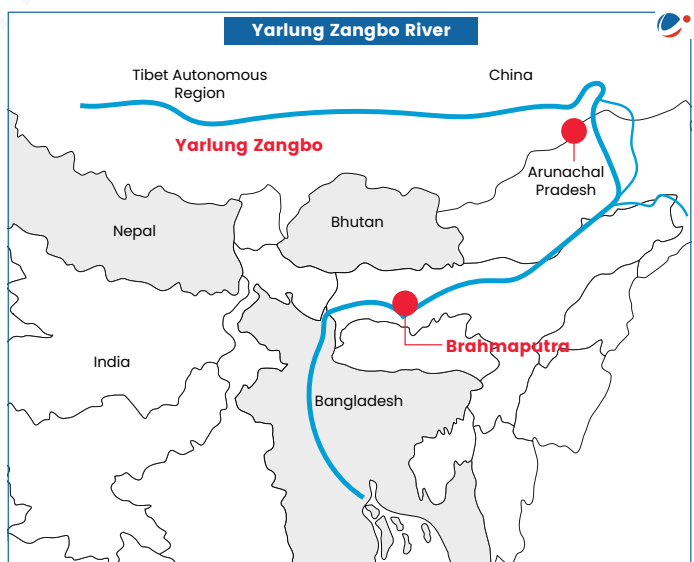
Project Overview

- **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.



2.11.5. 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

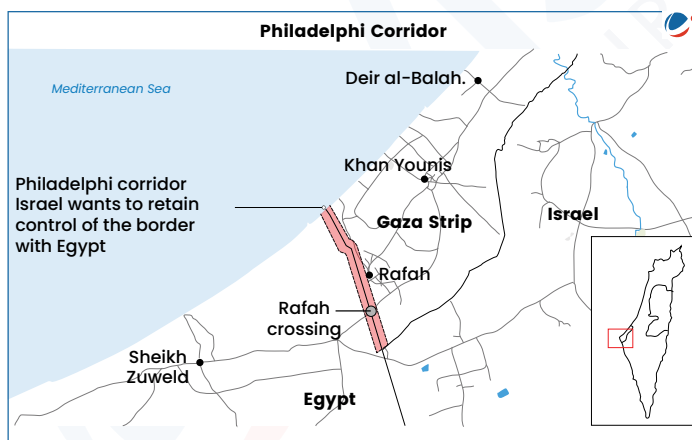
- ➔ **Location:** Situated at 3,727 feet (1,136 m) on the **Patkai Hills along the India–Myanmar border**.
- ➔ **Origin of Name:** Named after the nearest Burmese village, Pangsau.
- ➔ **Historical Significance:** Believed to be the route of the 13th-century Ahom invasion of Assam by the Shan tribe.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

2.11.6. 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**.



2.11.7. Gulf of Mexico

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

About Gulf of Mexico

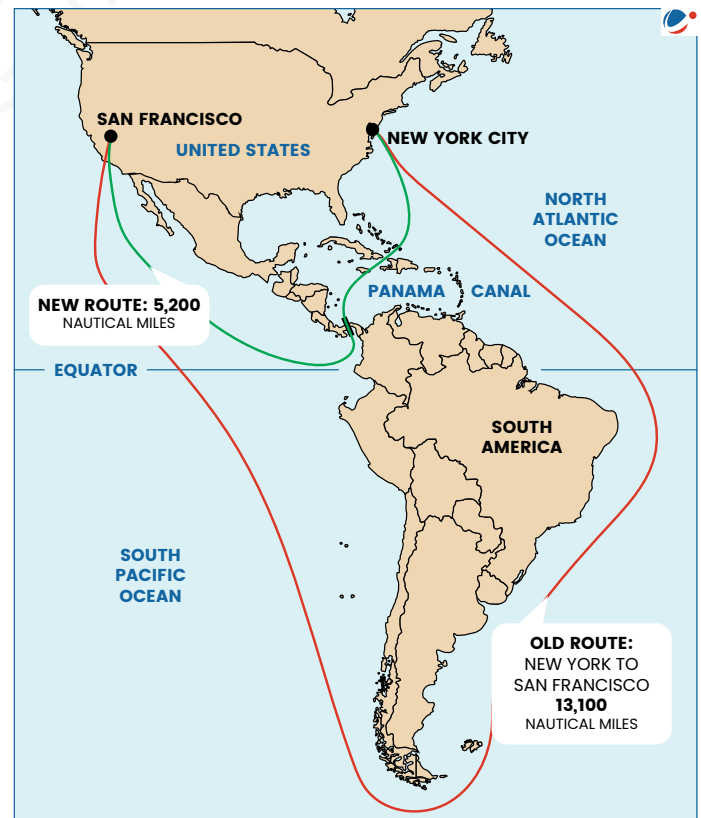
- ➔ **Boundaries:** United States (North), Mexico (West and South), Cuba (South-east).
- ➔ It connects to the **Atlantic Ocean** through the **Straits of Florida** and to the **Caribbean Sea via the Yucatán Channel**.
- ➔ **Control and Ownership:** Shared by **U.S., Mexico, and Cuba**

2.11.8. 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).





3.1. 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. Currently India follows this with occasional RBI interventions.
 - ➔ **Managed Floating Exchange Rate:** combination of previous two.

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.

3.2. 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)**.

- ➔ **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.

- ➔ **Indian exporters can open accounts in any foreign currency overseas for trade transactions.**
 - ➔ **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.

3.3. 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).**
- ➔ **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.
- ➔ **Advantages of PPI:** Cover services, exclude indirect taxes, **International Prominence**

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**.

3.4. 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.

3.5. 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.

3.6. 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, bitcoin.
 - ➔ **CBDCs: Digital version of fiat currencies** issued by Central Banks, centralized, digital rupee.
 - ➔ **Stablecoins: backed by underlying asset's reserves or by algorithms** modifying the supply based on market demand, Centralized or hybrid, tether.

About CBDC

- ➔ **Legal tender and liability in digital form denominated in sovereign currency** appearing on central bank balance sheet. (RBI)
- ➔ **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 (₹):** 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 CBDC's to prevent misuse.
- ➔ **Cross-border collaboration and standardization:** Establish global standards for interoperability, regulation.

3.7. 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.

3.8. '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**.

3.9. News in Shorts

3.5.1. RBI Issues Framework for Reclassification of FPI to FDI

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.

3.9.2. 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.

3.9.3. Government to Borrow Rs 3.94 lakh Crore via Treasury Bills (T-bills)

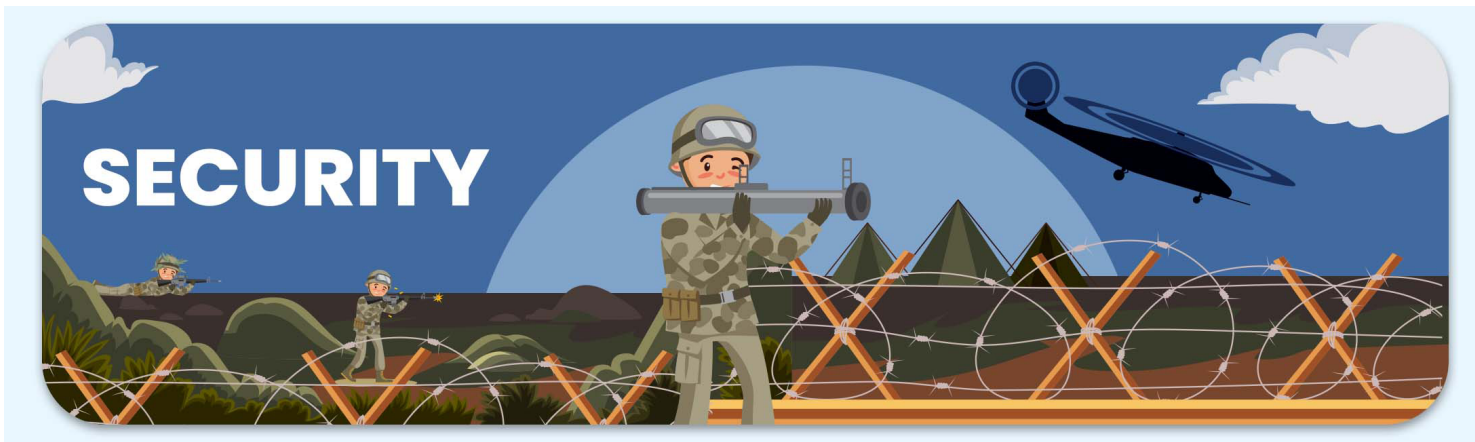
Recently, RBI notified the calendar for issuance of T-Bills, one of the types of Government Securities (G-Sec).

Government Securities Market in India

- ➔ About: It is a tradable instrument issued by the Central or State Governments acknowledging the Government's debt obligation.
- ➔ Issued by: RBI through an auction on its electronic, E-Kuber platform. RBI's Public Debt Office (PDO) acts as its registry/ depository.
- ➔ Major Participants: Commercial banks, Primary Dealers, Insurance companies, co-operative banks, etc.

Types of G-Secs

- ➔ Short term with original maturities less than a year. E.g., T-Bills.
 - ➔ Treasury Bills (T-bills): Money market and short-term debt instruments issued by the Government of India (GOI); Zero coupon securities and pay no interest. Issued at a discount and redeemed at the face value. Issued in 3 tenors, namely, 91-day, 182 day and 364 days.
 - ➔ Cash Management Bills (CMBs): Short-term (maturities less than 91 days) instrument.
- ➔ Long Term, with original maturity of one or more year. E.g., Government Bonds or Dated Securities.
 - ➔ Dated G-Sec: Fixed or floating interest rate, half-yearly basis, with maturities ranging from 5 to 40 years.
 - ➔ SDLs: Dated securities issued by State Governments with half-yearly interest payments.
- ➔ NOTE: Central Government issues both T-Bills and bonds or dated securities while the State Governments issue only bonds or dated securities, called the State Development Loans (SDLs).



4.1. 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.

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.

- **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.

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.

4.2. 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**.

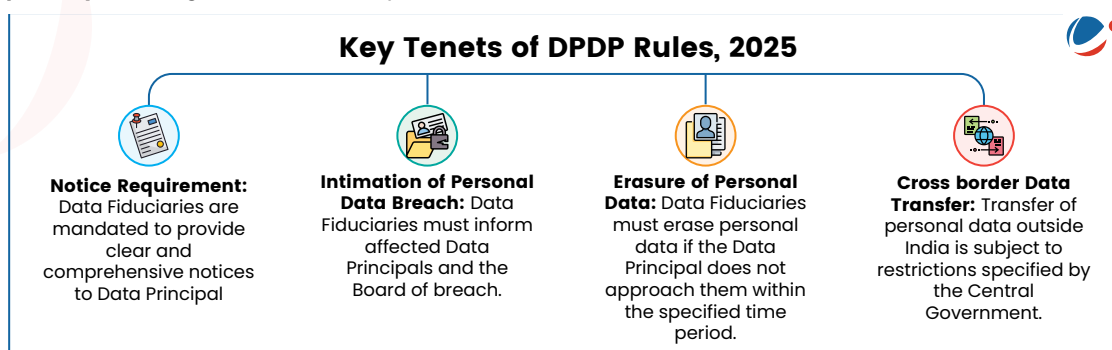
Benefits of Robust Data Management Policies/Act:

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

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.

4.3. 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:** World's 7th largest fishing nation.
 - ➔ **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.

4.4. Telecommunications (Procedures and Safeguards for Lawful Interception of Messages) 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**

4.5. News in Shorts

4.5.1. Ministry of Defense declares 2025 as 'Year of Reforms'

The declaration aims at modernization of the Armed Forces into a technologically advanced combat-ready force capable of multi-domain integrated operations.

Identified areas for focussed interventions

- **Integrated Theatre Commands (ITCs) and Emerging technologies and new domains.**
- **Technology transfer and knowledge sharing through ease of doing business and PPP.**
- **Collaboration by civil-military coordination and Defence exports and R&D.**

4.5.2. Frontier Technologies in Warfare

Raksha Mantri said that “Mastering frontier technologies is need of the hour”.

- Frontier technologies such as **AI, proxy warfare, space warfare and cyber-attacks** are posing a big challenge and reshaping nature of warfare.
- **Frontier Technologies in Warfare:** AI based warfare e.g. AI-powered drones, Electromagnetic warfare, Space warfare E.g. Anti-satellite (ASAT) weapons and Cyber-attacks.
- India adopts frontier technologies through the **Defence AI Council (DAIC) and Defence AI Project Agency (DAIPA)**, Project Seeker for AI-based facial recognition, etc.
- **Issues with Frontier Technologies:** Challenges to International Security, Legal gaps, Dual use dilemma and Other Issues such as Risks of algorithmic bias etc.

Defence Modernization Initiatives

Private & MSME Participation: iDEX scheme & SRIJAN portal to boost indigenization.



Liberalized FDI Policy: Raised to 74% (Automatic Route) & 100% (Government Route) for access to advanced technology.

4.5.3. 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.

4.5.4. 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.

4.5.5. 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 (MCP), 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.

4.5.6. 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 (uses **infrared to detect and track targets**).

4.5.7. Bhargavastra

India has successfully tested its **first indigenous micro-missile system**, Bhargavastra, designed to counter the **threat of swarm drones**.

Key Features of Bhargavastra

- **Detection Capability:** distances exceeding **6 kilometers**.
- **Rapid Response and Multi-Target Engagement:** can track & engage up to 64 targets at once.

4.5.8. Pralay missile and Pinaka rocket

Tactical ballistic missile Pralay & long-range Pinaka rocket system will be part of Republic Day parade.

About Pralay missile

- **Surface-to-surface** short-range ballistic missile (SRBM)
- Developed by **Defence Research and Development Organisation**.
- **Range of 150-500 km**.

About Pinaka Pinaka multi-barrel rocket launcher (MBRL) system

- It is a **long-range artillery system** capable of **striking targets up to 75 kilometers** away.
- **Developed by DRDO**, it has multiple variants.

4.5.9. 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)**.

4.5.10. 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**.

4.5.11. Exercises in News

Surya Kiran	➤ It is an annual Joint military exercise between India and Nepal.
La Perouse	<ul style="list-style-type: none"> ➤ 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.



ENVIRONMENT



5.1. 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.

Issues persisting in climate negotiations

- ➔ **Inadequate climate finance:** NCQG falls short projected investment of **\$2.3–2.5 trillion in emerging markets and developing countries (EMDCs)** other than China.
- ➔ **Deadlock on Mitigation Work Programme (MWP):** Divisions persist over fossil fuels' role, with the Global Stocktake assessment becoming a point of controversy in measuring climate progress.
- ➔ **Limited progress on climate targets:** Countries show stagnating ambition and action since initial NDCs, remaining off-track from meeting climate goals.
- ➔ **Other Issues:**
 - ➔ **Slow pace of operationalizing the Loss and Damage Fund (LDF)** .
 - ➔ Next round of NDCs has been **postponed** ahead of COP30.

Major Groundwater Contaminants in India

- ➔ **Nitrate, NO₃ (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.

5.2. 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.

5.3. 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**

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

➔ **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**

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
- ➔ **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).

5.4. 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.

5.5. 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:** 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

5.6. News in Shorts

5.6.1. 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.

5.6.2. 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).

5.6.3. 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.

5.6.4. 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.

5.6.5. 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.

5.6.6. Net-Zero Banking Alliance (NZBA)

Major banks including Goldman Sachs Group Inc. **have announced their withdrawal from NZBA**

About Net-Zero Banking Alliance

- UN-convened, bank-led group of global banks committed to **aligning activities with net-zero emissions by 2050**.
- **No Indian banks** are members.
- Functions as **climate accelerator for UNEP Finance Initiative's** Principles for Responsible Banking.

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5.6.7. Bharat Cleantech Manufacturing Platform

Bharat Cleantech Manufacturing Platform was launched by The Union Minister of Commerce & Industry at the Bharat Climate Forum 2025

About Bharat Cleantech Manufacturing Platform

- It aims to **strengthen India's cleantech value chains** in solar, wind, hydrogen, and battery storage sectors.
- Offers Indian firms a platform to **collaborate, innovate, secure financing, and share ideas**, technologies, and resources, positioning India as a **global leader in sustainability and cleantech**.

5.6.8. 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.

5.6.9. 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.

5.6.10. 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 (NO_x) 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.

5.6.11. 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**.

5.6.12. Manufactured Sand (M-Sand)

Recently, the Rajasthan government launched the **M-Sand, 2024 policy to promote sustainable construction**.

About M – Sand

- **About:** M-Sand is made **by crushing rocks or quarry stones, replacing river sand in concrete construction**.
- **Advantages:** Better Workability, Higher Strength, Eco-Friendly .

5.6.13. 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**.

5.6.14. 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.

5.6.15. 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.

5.6.16. 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**.

5.6.17. 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**.

5.6.18. 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.

5.6.19. Translocation of Tigers

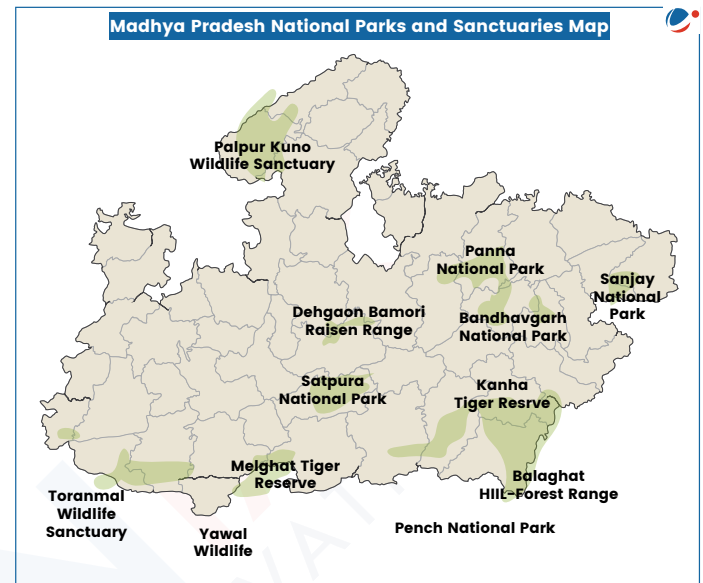
Madhya Pradesh to translocate 15 Tigers to Rajasthan, Odisha and Chhattisgarh

- ➔ 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.



5.6.20. 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.

5.6.21. 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**.

5.6.22. 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.

5.6.23. 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.

5.6.24. 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.

5.6.25. 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).

5.6.26. Hydroclimatic Whiplash

Experts link the severity of U.S. wildfires to hydroclimate whiplash, worsened by climate change.

About Hydroclimate whiplash

- ➔ It is a rare condition where an extremely wet season is followed by an extremely dry one.

Impact

- ➔ **Increases** hazards like wildfires, floods, and landslides
- ➔ **Affects** water quality with algal blooms or excess organic/mineral content.
- ➔ **Impacts** food security via reduced plant productivity and livestock deaths.

5.6.27. 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?

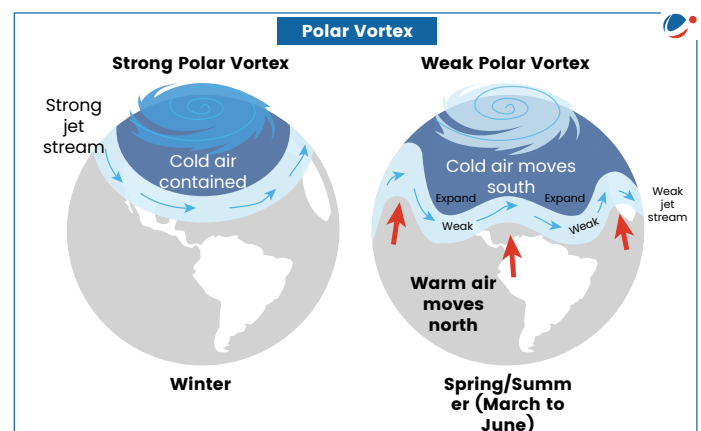
- ➔ **Definition:** A large low-pressure, cold air mass swirling counterclockwise around Earth's poles.

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.



5.6.28. Artesian condition

Artesian condition was recently observed in a village in Jaisalmer, Rajasthan.

Artesian Condition

- ➔ The word "artesian" refers to water confined under pressure beneath impermeable rock layers, deep underground, creating high pressure.
- ➔ Artesian Conditions occur when groundwater moves from a recharge area to a lower discharge point, like a natural spring or drilling site, unlike normal wells, as artesian water can rise on its own.

5.6.29. 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.

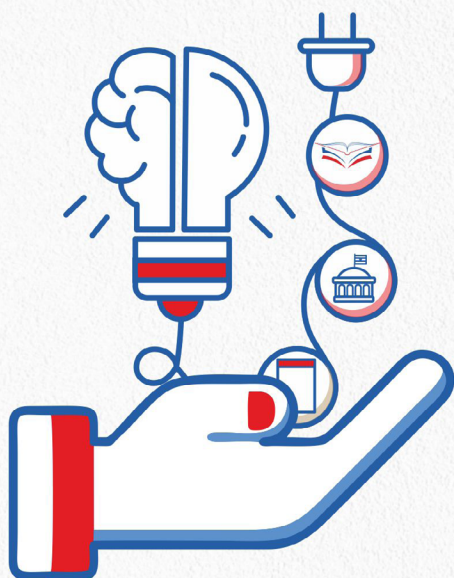
5.6.30. Mount Ibu

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.

OPTIONAL SUBJECT CLASSES



- » Geography » Sociology
- » Political Science and International Relations

ADMISSION OPEN

- » Public Administration
- » Anthropology » Hindi Literature

STARTING SOON

SOCIAL ISSUES



6.1. 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 than 10% 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 cash 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.

6.2. 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.

6.3. News in Shorts

6.3.1. 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.

6.3.2. 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**.

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 Ratio (GER):** Minor dip, except at secondary level.
- ➔ **Infrastructure:** Underutilized in Assam, Odisha, Karnataka.

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.

6.3.3. EmpowHER Biz

The **Women Entrepreneurship Platform (WEP)** of NITI Aayog launched **EmpowHER Biz – Sapno Ki Udaan**.

- ➔ WEP, begun in 2018 by NITI Aayog, **transitioned into a public-private partnership in 2022**.
- ➔ **Objectives**
 - ➔ **Equip women entrepreneurs** with skills and resources.
 - ➔ **Offer mentorship** in retail, digital tools, finance, and business growth.



SCIENCE AND TECHNOLOGY



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**.

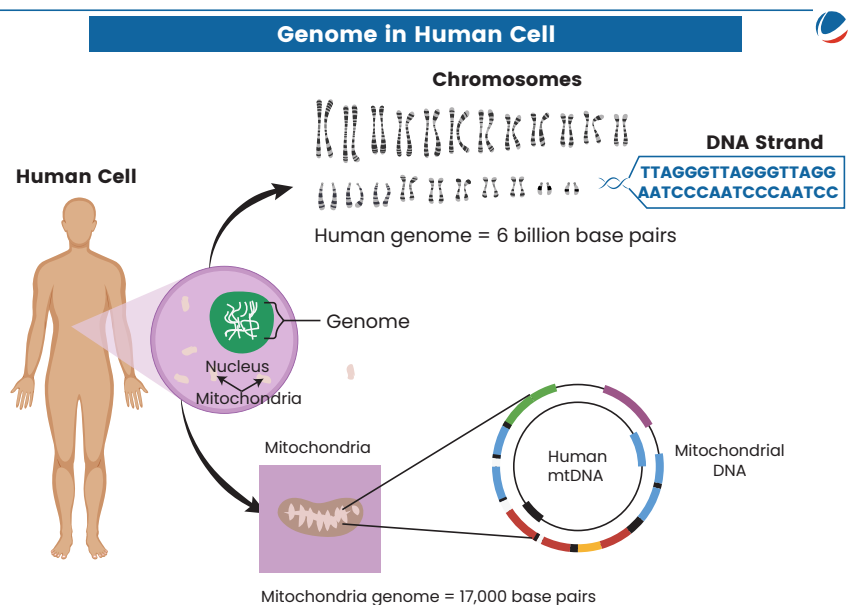
What is Genome Sequencing?

- ➔ **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 enhance **transparency & accountability** in GMO decision-making, as per **Supreme Court directions (Gene Campaign & Anr. Vs. Union of India & Ors.)**.

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.

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

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)

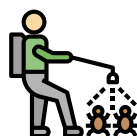
Regulation of GMOs in India

- **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)

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.

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.

Conclusion

Challenges related with the GM Crops can be overcome by strengthening GEAC oversight, conducting scientific evaluations of GM crops' impacts, 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.

7.3. 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 Consideration

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**

7.4. SCRAMJET ENGINE

Why in the News?

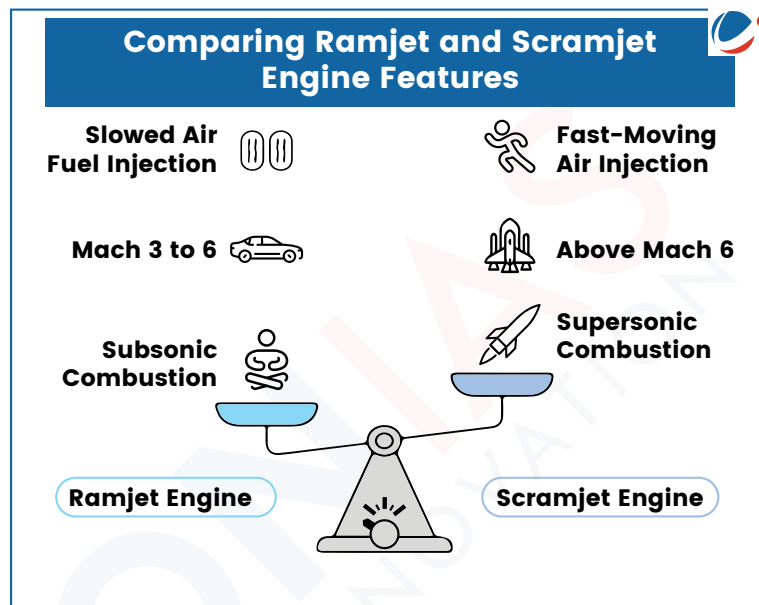
Defence Research and Development Laboratory (DRDL) successfully conducted India's first 120-second ground test of an active-cooled scramjet combustor.

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**.
- **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.

7.5. News in Shorts

7.5.1. QUANTUM TELEPORTATION

Researchers teleported a quantum state of light over 30 km of fiber optic cable, advancing quantum-classical network integration.

About Quantum Teleportation

- **Process:** Transfers quantum information using **entangled states** while preserving identity.
 - This **entanglement** links two particles in a way that changes to one particle instantly affect the other, even over long distance.
- **Significance:** Key for **quantum internet**, enabling **faster encryption, improved sensing, and global quantum computing connectivity**.

7.5.2. 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**.

7.5.3. 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**.

7.5.4. FRAMEWORK FOR ARTIFICIAL INTELLIGENCE DIFFUSION

The US released the '**Framework for AI Diffusion**', aiming to establish **export and security regulations** for the **global AI market**, imposing **GPU import restrictions on India** unless hosted in secure environments.

About the Framework for AI Diffusion

- ➔ Seeks to **control AI spread**, balancing **economic benefits** and **U.S. interests**.
- ➔ **Built on 3-part strategy**:
 - ➔ **Allied Exceptions**: Export and re-export allowed for select allies.
 - ➔ **Supply Chain Exceptions**: Advanced chip exports permitted.
 - ➔ **Low Volume Exceptions**: Limited compute flow globally, except for arms-embargoed nations.

7.5.5. 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.

7.5.6. 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

7.5.7. ATOMIC ENERGY COMMISSION (AEC)

The Union government has re-constituted the **Atomic Energy Commission (AEC)**.

About Atomic Energy Commission (AEC)

- ➔ **Establishment**: Set up in August 1948 under the **Department of Scientific Research**, later brought under **Department of Atomic Energy (DAE)**.
- ➔ **Mandate**: **Plans & implements** atomic energy expansion; **formulates DAE policy**.

7.5.8. 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.

7.5.9. 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.

7.5.10. 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.

7.5.11. 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**.

7.5.12. 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**.

7.5.13. 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.

7.5.14. 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.

7.5.15. 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.

7.5.16. CAR T-CELL THERAPY

CDSCO approved **Qartemi**, India's **2nd living drug**, a **Chimeric Antigen Receptor (CAR) T-cell therapy** for blood cancer.

- ➔ A **living drug** involves extracting, modifying, and reintroducing a patient's cells for treatment.

About CAR T-cell Therapy

- ➔ An innovative **immunotherapy** where a patient's T-cells (**white blood cells**) are genetically engineered to target and attack cancer cells.
- ➔ **Process**
 - ➔ T-cells are extracted from the patient's blood and genetically modified by adding a **man-made receptor (CAR)**.
 - ➔ The modified **CAR-T cells** are then reintroduced into the patient to identify and destroy cancer cells.

7.5.17. 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:** $\text{Weight (kg)} \div \text{Height (m}^2\text{)}$.
- ➔ **Limitations:** Does not distinguish **lean body mass vs. fat mass** or account for **gender differences**.

7.5.18. 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)**.

7.5.19. 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**.

7.5.20. TITANIUM

An Indian firm commissioned **India's first Vacuum Arc Remelting (VAR) furnace** for producing aerospace-grade titanium alloy.

About Titanium

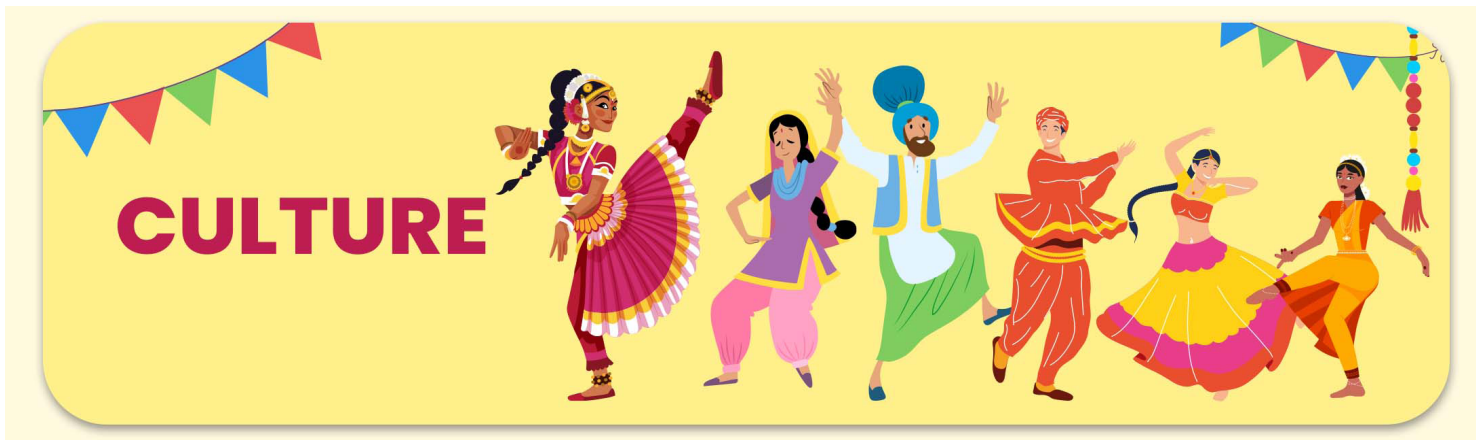
- ➔ **Appearance:** Hard, shiny, and strong metal.
- ➔ **Properties:** **Lightweight**, **corrosion-resistant**, **high melting point**.
- ➔ **Uses:** **Medical implants**, **power plant condensers**, **aircraft alloys** (with aluminum).
- ➔ **Key Minerals:** **Ilmenite (FeO·TiO₂)** and **Rutile (TiO₂)**.

7.5.21. 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.



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. 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.

8.3. News in Shorts

8.3.1. 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.

8.3.2. 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.

8.3.3. 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**.

8.3.4. 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.

8.3.5. 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 patrilineal**. 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**.

8.3.6. 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**.

8.3.7. Harvest Festivals of India

Recently, India witnessed the celebration of harvest festivals harmonious relationship with nature.

Major Festivals

- ➔ **Lohri (North with roots in Punjab):** Celebrated as the departure of the winter season.
- ➔ **Makar Sankranti (North India):** Marks the onset of summer and six months auspicious period for Hindus called Uttarayan, the northward movement of the sun.
- ➔ **Pongal (South India):** Four-day event dedicated to the Sun God marks the Sun's journey northward.
- ➔ **Bhogali Bihu (Assam):** Marks the end of harvesting season.

8.3.8. 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.

8.3.9. Bharat Ranbhoomi Darshan

Ministry of Defence launches **Bharat Ranbhoomi Darshan website, app**, part of its 'Battlefield Tourism' plan.

- ➔ It will be a **one-stop destination** for information and clearances for **battlefield visits**, featuring virtual tours.
- ➔ **Indian Army**, in conjunction with **Ministry of Tourism**, has **shortlisted** some other **border sites**: Kibithoo and Bum La Pass (Arunachal Pradesh), Rezang La and Pangong Tso (Ladakh), and Doklam (site of 2017 conflict).

8.3.10. 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.**

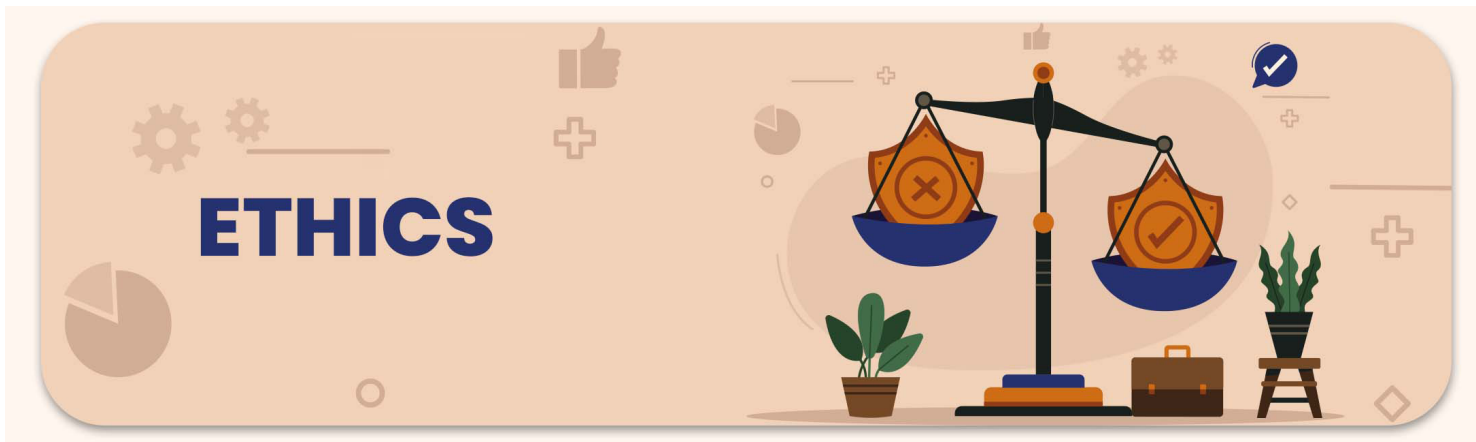


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9.1. Ethical Considerations in Contemporary Foreign Aid

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)**

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

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).

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.**



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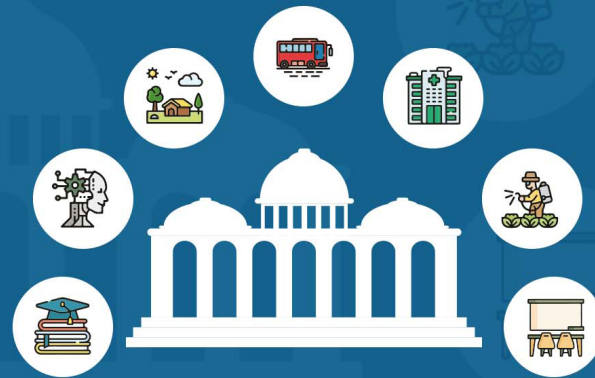
For queries regarding DAF analysis and Mock interview contact at

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GOVERNMENT SCHEMES



10.1. 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

10.2. Beti Bachao Beti Padhao Scheme

Why in the News?

Ministry of Women and Child Development (MoWCD) celebrated the 10th anniversary of BBBP Scheme.

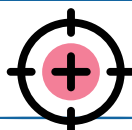
About BBBP Scheme

- ➔ **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: Recognizes
top girl students



Bal Cabinet: Simulated
governance & leadership training
for girls

10.3. Sukanya Samridhi Yojana

Why in the News?

Sukanya Samridhi 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.



Cooperatives	<ul style="list-style-type: none"> ➔ Constitutional Provisions: Article 19(1)(c), Article 43B and Articles 243ZH to 243ZT ➔ Key Amendments <ul style="list-style-type: none"> ➔ 97th Constitutional Amendment, 2011 ➔ Multi-State Co-operative Societies (Amendment) Act, 2023 ➔ Statutory Provisions <ul style="list-style-type: none"> ➔ Cooperative Credit Societies Act, 1904 ➔ Multi-State Cooperative Societies Act, 2002.
NITI Aayog	<ul style="list-style-type: none"> ➔ Key Initiatives: Atal Innovation Mission, Aspirational District Programme, Women Entrepreneurship Programme. ➔ Index: Composite Water Management Index, State Energy and Climate Index, Fiscal Health Index. ➔ Report: SAFE Accommodation, Pathways for Edible Oil Growth, SATH-E Report.
Lokpal and Lokayukta	<ul style="list-style-type: none"> ➔ Statutory Provision: Lokpal and Lokayuktas Act, 2013 ➔ Key Amendment: The Lokpal and Lokayukta (Amendment) Act of 2016
Election Commission of India (ECI)	<ul style="list-style-type: none"> ➔ Constitutional Provisions: Articles 324 to 329 ➔ Statutory Provisions : Chief Election Commissioner and other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023 ➔ Significant Judgement: Anoop Baranwal vs. Union of India, 2023 ➔ Committees/Commissions <ul style="list-style-type: none"> ➔ Dinesh Goswami Committee, 1990 ➔ 255th Law Commission of India report
Internet Shutdown	<ul style="list-style-type: none"> ➔ Constitutional Provision: Article 19 (2): Allows reasonable restricts ➔ Statutory Provisions <ul style="list-style-type: none"> ➔ Code of Criminal Procedure (CrPC), 1973 – Section 144 ➔ Indian Telegraph Act, 1885 – [Temporary Suspension of Telecom Services (Public Emergency & Public Safety) 2017 rules] ➔ Significant Judgements <ul style="list-style-type: none"> ➔ Anuradha Bhasin v. Union of India (2020) ➔ Faheema Sirin v. State of Kerala (2019)
USA's Protectionist Measures	<ul style="list-style-type: none"> ➔ USA had earlier exited Paris Agreement in 2017, but re-joined 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.

Minilateralism and Multilateralism	<ul style="list-style-type: none"> ➔ 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.
Indus Water Treaty	<ul style="list-style-type: none"> ➔ Genesis: Signed in 1960 between India and Pakistan mediated by the World Bank. ➔ Water usage rights: <ul style="list-style-type: none"> ➔ 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. ➔ Implementation: Permanent Commissioners for Indus Waters.
World Health Organization (WHO)	<ul style="list-style-type: none"> ➔ 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. ➔ Membership: 194 members, All countries which are Members of the UN may become members. Other countries admitted through application approved by World Health Assembly.
AUKUS	<ul style="list-style-type: none"> ➔ Genesis: In September 2021 between Australia, the UK and US. ➔ Aim: To boost defense capabilities, accelerate technological integration etc. ➔ Composed of two pillars: <ul style="list-style-type: none"> ➔ 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.
QUAD Grouping	<ul style="list-style-type: none"> ➔ Formalisation led by the then Japanese PM Shinzo Abe in 2007. ➔ Members: Australia, India, Japan, and the U.S. ➔ Nature: An informal strategic partnership and an alliance of maritime democracies. ➔ Purpose: Supports an open, stable, and inclusive Indo-Pacific.
India-Indonesia Relations	<ul style="list-style-type: none"> ➔ 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.
Fiscal Health Index Report 2025	<ul style="list-style-type: none"> ➔ Annual publication by NITI Ayog focusing on the fiscal health of Indian states.
Household Consumption Expenditure Survey, 2023-24	<ul style="list-style-type: none"> ➔ Released by NSSO ➔ Growth in Monthly Per Capita Expenditure (MPCE) ➔ Urban-Rural Gap: Reduced ➔ Consumption Inequality Reduced:
India Remains The Fastest-Growing Economy	<ul style="list-style-type: none"> ➔ World Bank's Global Economic Prospects Report gives overview of Global Economy for 1st quarter of 21st Century.

BAANKNET (Bank Asset Auction Network)	<ul style="list-style-type: none"> ➔ Ministry of Finance launched e-auction portal '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.
Prepaid Payment Instruments (PPI)	<ul style="list-style-type: none"> ➔ PPIs are instruments that facilitate the purchase of goods and services, conduct of financial services, enable remittance facilities, etc., against the value stored therein.
Revised Open Market Sale Scheme (Domestic) Policy for 2024-25	<ul style="list-style-type: none"> ➔ 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.
Project VISTAAR	<ul style="list-style-type: none"> ➔ Virtually Integrated System to Access Agricultural Resources (VISTAAR) is a comprehensive network that connects decentralized databases to provide seamless access to vital agricultural resources.
Logistics Ease Across Different States (LEADS) 2024' Report Released	<ul style="list-style-type: none"> ➔ Released by the Ministry of Commerce and Industry ➔ Provides insights into improvement of logistics performance at State/UT level.
Z Morh Tunnel (Sonamarg Tunnel)	<ul style="list-style-type: none"> ➔ Ganderbal's Sonamarg area in J&K. Situated at an altitude of 8,650 feet, it is a two-lane road tunnel equipped with parallel 7.5-metre-wide escape passage.
Banihal Bypass	<ul style="list-style-type: none"> ➔ The pass is 2.35 km road section of NH-44 in Jammu and Kashmir. NH44, also known as the Old NH 7, is the longest national highway in India.
Anji Khad Bridge	<ul style="list-style-type: none"> ➔ India's first cable-stayed rail bridge. Located in Reasi district, Jammu and Kashmir, part of the Udhampur-Srinagar-Baramulla Rail Link.
INTERPOL	<ul style="list-style-type: none"> ➔ 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. ➔ CBI is India's NCB to the INTERPOL.
Draft Digital Personal Data Protection (DPDP) Rules 2025	<p>Brief Background of DPDP Act, 2023</p> <ul style="list-style-type: none"> ➔ 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. ➔ Key Tenets of DPDP Rules, 2025: Notice Requirement, Intimation of Personal Data Breach, Erasure of Personal Data and Cross-border Data Transfer.
Coastal Security Scheme	<ul style="list-style-type: none"> ➔ The scheme was formulated in 2005 by the Ministry of Home Affairs (MHA). ➔ Phases of the scheme <ul style="list-style-type: none"> ➔ 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 centre.

Telecommunications (Procedures and Safeguards for Lawful Interception of Messages) Rules, 2024	Key provisions of New Rules 2024 <ul style="list-style-type: none"> ➔ 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.
Pralay missile and Pinaka rocket	About Pralay missile <ul style="list-style-type: none"> ➔ Surface-to-surface short-range ballistic missile (SRBM) ➔ Developed by Defence Research and Development Organisation. ➔ Range of 150-500 km.
Translocation of Tigers	<ul style="list-style-type: none"> ➔ Madhya Pradesh has decided to translocate 15 Tigers to Rajasthan, Odisha and Chhattisgarh under the animal exchange programme
World's First Cryo-Born Baby Corals	<ul style="list-style-type: none"> ➔ World's First Cryo-Born Baby Corals Successfully Settled on the Great Barrier Reef led by the Australian researchers.
KaWaCHaM	<ul style="list-style-type: none"> ➔ Kerala has launched the Kerala Warnings, Crisis, and Hazard Management System (KaWaCHaM) for real-time disaster alerts.
Increase in Coastline	<ul style="list-style-type: none"> ➔ India's coastline has increased from 7,516 km in 1970 to 11,098 km in 2023-24, a 48% rise over 53 years.
Mount Ibu	<ul style="list-style-type: none"> ➔ Indonesia's Mount Ibu, on the remote island of Halmahera, erupted 1,000 times this month
Oxfam Report on Widening Global Economic Inequalities	<ul style="list-style-type: none"> ➔ Global Wealth Distribution: The richest 1% control 45% of global wealth, while 44% of the world's population lives below the \$6.85 poverty line. ➔ India's Wealth Inequality: The top 1% in India own over 40% of the country's wealth, while the bottom 50% own just 3%. ➔ Gender Pay Gap in India: Men earn 82% of labor income in India, while women earn only 18%, according to the World Inequality Report 2022.
India's Digital Health	<ul style="list-style-type: none"> ➔ India's digital healthcare public infrastructure includes Ayushman Bharat Digital Mission, CoWIN Platform, U-Win Portal, Aarogya Setu App, e-Hospital application, e-Sanjeevani, etc.
Genome India Project	<ul style="list-style-type: none"> ➔ Launch: 2020 by Department of Biotechnology (DBT) ➔ Objective: Map India's genetic diversity, create a reference genome. ➔ Data Release: 10,000 genome sequences archived at Indian Biological Data Centre (IBDC), Faridabad. ➔ Other Genome Projects: IndiGen Program (CSIR), 'One Day One Genome' (DBT), Human Genome Project (1990-2003), 100,000 Genomes Project (UK).
Genetically Modified (GM) Crops	<ul style="list-style-type: none"> ➔ GM Crops Definition: Organisms with foreign genes introduced to enhance traits. ➔ Approved GM Crop in India: Bt Cotton (2002) for bollworm resistance. ➔ Other GM Crops: Bt Brinjal and GM Mustard (DMH-11) ➔ Regulatory Bodies: Genetic Engineering Appraisal Committee (GEAC) (MoEFCC), Review Committee on Genetic Manipulation (DBT), Institutional Biosafety Committee (Institutional level).
Scramjet Engine	<ul style="list-style-type: none"> ➔ Concept: Supersonic Combustion Ramjet (Scramjet) operates at hypersonic speeds with supersonic airflow. ➔ Principle: Uses Newton's Third Law (action-reaction) for thrust; relies on air compression instead of rotating compressors. ➔ Significance: Enables hypersonic missiles, space access, etc

Quantum Teleportation	<ul style="list-style-type: none"> ➔ Concept: Quantum teleportation transfers quantum information using entangled states, preserving identity without physical movement. ➔ Principle: Based on quantum entanglement, ensuring instantaneous correlation between distant particles. ➔ Significance: Enables quantum internet, ultra-secure encryption, high-precision sensing, and global quantum computing connectivity.
Nanopore Technology	<ul style="list-style-type: none"> ➔ Concept & Principle: Uses nano-scale pores to analyze biological molecules by detecting electrical potential changes as charged molecules pass through. ➔ Significance: Enables real-time DNA/RNA sequencing directly from biological samples. ➔ Applications: Disease marker detection, non-invasive early cancer diagnosis.
Nano Bubble Technology	<ul style="list-style-type: none"> ➔ Concept & Principle: Uses nano-sized bubbles (70–120 nm) with negative surface charge to prevent coalescence and separate contaminants via hydrophobic interactions. ➔ Applications: Water purification, agriculture, healthcare, food industry, industrial cleaning.
Methylcobalamin	<ul style="list-style-type: none"> ➔ Nature: Bioactive form of Vitamin B12, essential for DNA synthesis, RBC production, and protein metabolism. ➔ Uses: Treats diabetic neuropathy, anemia, and Alzheimer's disease. ➔ Other Forms: Cyanocobalamin and Hydroxocobalamin
CAR T-Cell Therapy	<ul style="list-style-type: none"> ➔ CDSCO approved Qartemi, India's 2nd CAR T-cell therapy for blood cancer. ➔ Concept: Uses genetically engineered T-cells to target and kill cancer cells. ➔ Process: Extract, modify with Chimeric Antigen Receptors (CARs), and reinfuse T-cells to attack cancer. ➔ Significance: Advanced immunotherapy offering personalized cancer treatment.
Neuromorphic Device	<ul style="list-style-type: none"> ➔ Concept: Mimics the human habituation process, where pain perception reduces with repeated exposure. ➔ Function: Replicates nociceptors (pain sensors) to process stimuli efficiently. ➔ Benefit: Advances wearable technology & human-machine interactions for smarter AI systems.
Iron Age in India	<ul style="list-style-type: none"> ➔ New evidence from Tamil Nadu now dates it back to the mid-3rd millennium BCE., Advanced Metallurgy, Copper and Iron Age were contemporaneous
Saint Narahari Tirtha	<ul style="list-style-type: none"> ➔ Narahari Tirtha was a prominent Dvaita Vedanta philosopher, scholar, and saint of the 13th century; disciple of Madhvacharya.
Kalaripayattu	<ul style="list-style-type: none"> ➔ 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.
Konda Reddi Tribe	<ul style="list-style-type: none"> ➔ They are recognized as a Particularly Vulnerable Tribal Group (PVTG).
Hatti Tribe	<ul style="list-style-type: none"> ➔ Notified as Scheduled Tribe under the Constitution (Scheduled Tribe) Order (Second Amendment) Act, 2023.
Bharat Ranbhoomi Darshan	<ul style="list-style-type: none"> ➔ Ministry of Defence launches Bharat Ranbhoomi Darshan website that will be a one-stop destination for information and clearances for battlefield visits, featuring virtual tours

ACTIVITIES



12.1. MCQS

- 1. Which of the following statements regarding NITI Aayog is correct?**

 - It is a statutory body established by Parliament.
 - It is a constitutional body created by the 42nd Amendment Act.
 - It was established through a Union cabinet resolution and functions as a think tank.
 - It has the authority to allocate financial resources to states.
- 2. Which of the following statements regarding the composition of Lokpal is correct?**

 - Lokpal consists of a Chairperson and up to 8 members, with at least 75% being Judicial Members.
 - Lokpal consists of a Chairperson and up to 8 members, with at least 50% being Judicial Members.
 - Lokpal consists of a Chairperson and up to 10 members, with at least 25% being Judicial Members.
 - Lokpal consists of a Chairperson and up to 6 members, with at least 60% being Judicial Members.
- 3. Consider the following statements about the World Health Organization (WHO):**

 - It is United Nation's specialized health agency.
 - All countries which are Members of the UN may become members.

Which of the above statements is/are true?

 - 1 only
 - 2 only
 - Both 1 and 2
 - None of the above
- 4. Consider the following statements about the Indus Water Treaty:**

 - India can use water of eastern Rivers Ravi, Beas, and Indus in unrestricted manner.
 - It was signed in 1960 between India and Pakistan mediated by the World Bank.
 - Permanent Indus Commission (PIC) is established for questions concerning the interpretation or application of this Treaty.
 - Western Rivers Sutlej, Jhelum, and Chenab are allocated to Pakistan.

Which of the above statements is/are true?

 - Only statement 1 is true.
 - Statements 2 and 3 are true.
 - Statements 1, 2, and 4 are true.
 - All statements are true.
- 5. With reference to inflation indices in India, consider the following statements:**

 - The Wholesale Price Index (WPI) includes both goods and services.
 - The Producer Price Index (PPI) is currently the official measure of producer-level inflation in India.
 - The Consumer Price Index (CPI) includes indirect taxes, whereas WPI excludes them.

Which of the statements given above is/are correct?

 - Only One
 - Only two
 - All three
 - None
- 6. With reference to Government Securities (G-Secs) in India, consider the following statements:**

 - Treasury Bills (T-Bills) are issued by both the Central and State Governments.
 - Treasury Bills are zero-coupon securities and issued at a discount to their face value.
 - State Development Loans (SDLs) are issued by State Governments and carry half-yearly interest payments.
 - Cash Management Bills (CMBs) are long-term securities issued to manage the government's cash flow.

Which of the statements given above are correct?

 - 1 and 3 only
 - 2 and 3 only
 - 2, 3, and 4 only
 - 1, 2, and 4 only

7. Union Government notified the Telecommunications (Procedures and Safeguards for Lawful Interception of Messages) Rules, 2024, in this regard,

1. Only Joint Secretary or higher rank official can authorize the interception order.
2. The Central Government may authorize agencies to intercept messages in case of a public emergency or public safety concerns.

Which of the following statements is true?

- (a) Only statement 1 is true.
- (b) Only statement 2 is true.
- (c) Both statements are true.
- (d) None of the statements are true.

8. Consider the following statements about INTERPOL's colour coded notices:

1. Red Notice seeks location and arrest of wanted persons.
2. Blue Notice collects identity, location, or activity information.
3. Green Notice warns of a person's criminal activities.
4. Purple Notice seeks info on criminal methods or modus operandi.

Which of the above statements is/are true?

- (a) Only one statement is true.
- (b) Only two Statements are true.
- (c) Only three statements are true.
- (d) All statements are true.

9. Indian Cybercrime Coordination Centre is operating under which central ministry?

- (a) Ministry of Information and Broadcasting
- (b) Ministry of Defence
- (c) Ministry of Home Affairs
- (d) Ministry of Science and Technology

10. Consider the following statements about the Annual Ground Quality Report, 2024.

1. It is released by Ministry of Jal Shakti.
2. India has the second largest usage of Groundwater globally.
3. There are no states where the groundwater extraction is in overexploited category.

How many of the above sentences are correct?

- (a) One only
- (b) Two only
- (c) Three only
- (d) None

11. Consider the following statements about the hydrogen train engines.

1. Only four countries Germany, France, Sweden, China have hydrogen trains.
2. All hydrogen powered rail vehicles, whether large or small, are categorized as 'hydrail'.
3. They are considered expensive than the electric trains.

Which of the above sentence are correct?

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

12. Consider the following statements about Turmeric.

1. It is considered as rhizome, often referred to as the "Golden Spice".
2. It is a natural indicator that changes color depending on the pH of a solution.

Which of the above statements are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) None

13. Which of the following best exemplifies modern-day neo-colonialism?

- (a) The establishment of new colonies by Global North countries.
- (b) Big Tech corporations controlling digital ecosystems and influencing political domains.
- (c) Increased foreign aid from the Global North to the Global South.
- (d) The decline of multinational corporations in global supply chains.

14. What sets India's digital health apart as a global model, according to the World Economic Forum (WEF)?

- (a) Exclusive reliance on AI diagnostics
- (b) Robust digital public infrastructure and private innovation
- (c) Elimination of traditional healthcare systems
- (d) Focus solely on urban healthcare

15. Quantum entanglement, which enables quantum teleportation, refers to:

- (a) The process of splitting an atom into subatomic particles
- (b) The instant correlation between two particles regardless of distance
- (c) The transfer of classical data using quantum mechanics
- (d) The ability to create quantum computers using fiber optic cables

16. What is the key property of nanobubbles that helps in water purification?

- (a) They contain high amounts of dissolved oxygen.
- (b) They bind with heavy metals and neutralize them.
- (c) They rapidly expand and burst, releasing energy.
- (d) Their hydrophobic nature lifts organic and inorganic contaminants.

17. Which of the following is NOT correctly matched regarding harvest festivals in India?
- Lohri – Punjab
 - Pongal – Karnataka
 - Makar Sankranti – North India
 - Bhogali Bihu – Assam
18. With reference to the Kumbh Mela, consider the following statements:
- It is held every four years in a rotation between four different locations.
 - It was recognized by UNESCO as an Intangible Cultural Heritage in 2017.
 - The earliest known reference to the Kumbh Mela is found in the writings of Chinese traveler Hiuen Tsang.
- Which of the statements given above is/are correct?
- 1 and 2 only
 - 2 and 3 only
 - 1 and 3 only
 - 1, 2, and 3
19. Consider the following statements regarding Pradhan Mantri Fasal Bima Yojana (PMFBY):
- The scheme provides coverage for prevented sowing due to adverse weather conditions.
 - Farmers who have taken crop loans are mandatorily enrolled in the scheme as per the latest guidelines.
- Which of the statements given above is/are correct?
- 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2
20. The “My Aim My Target” initiative under the Beti Bachao Beti Padhao (BBBP) Scheme is designed to:
- Offer leadership training for young women
 - Provide financial aid for girl children’s education
 - Recognize and reward top-performing girl students
 - Encourage entrepreneurship among women

12.2. True/False Statements

- Cooperative banks in India operate independently and are not subject to RBI regulations. (T/F)
- The Chief Executive Officer (CEO) of NITI Aayog is appointed by the President of India. (T/F)
- The Lokayukta is established at the state level through a centrally enacted law, ensuring uniformity across states. (T/F)
- Telugu is one of the four official languages of Singapore. (T/F)
- BRICS is Informal grouping formed by Brazil, Russia, India and China in 2009, with South Africa added in 2010. (T/F)
- Philadelphi Corridor was originally established under the 1979 Israel-Egypt Peace Treaty. (T/F)
- The Z-Morh Tunnel is a four-lane tunnel that provides all-weather connectivity between Srinagar and Sonamarg. (T/F)
- The Anji Khad Bridge is India’s first cable-stayed road bridge, located in Jammu and Kashmir. (T/F)
- Pig-Butchering scam is a type of confidence and investment fraud in which the victim is lured into making large monetary contributions one time. (T/F)
- Pralay missile is Surface-to-surface short-range ballistic missile (SRBM). (T/F)
- Eurodrone programme is four-nation initiative involving Germany, France, Italy, and Spain. (T/F)
- Arunachal Pradesh has become the first state to adopt the concept of Green GDP. (T/F)
- The G7 countries, despite representing less than 10% of the world’s population, hold over 40% of the voting power in the IMF and World Bank. (T/F)
- Quantum teleportation allows the physical transfer of particles over long distances. (T/F)
- A scramjet engine generates thrust by pulling air in, violating Newton’s Third Law. (T/F)
- GM crops are developed by introducing foreign genes into plant DNA to enhance specific traits. (T/F)
- The Hatti tribe is often referred to as ‘Trans-Giri’ because they reside near the Giri and Tons rivers. (T/F)
- Major Dhyani Chand Award is the India’s highest honour for lifetime achievements in sports. (T/F)
- Sukanya Samridhi Yojana (SSY) was launched under the Pradhan Mantri Jan Dhan Yojana with the objective of financial inclusion for girls. (T/F)
- The primary objective of Beti Bachao Beti Padhao (BBBP) Scheme is to improve the Child Sex Ratio (CSR) and prevent gender-biased sex selection. (T/F)

12.3. Mains Practice Questions

- Discuss the major issues in the implementation of the Lokpal and Lokayukta Act, 2013. How can these be addressed to ensure better functioning of anti-corruption institutions in India? (10 marks/150 words)
- What are the major challenges faced by the Election Commission of India in conducting free and fair elections? Suggest measures to enhance its effectiveness. (10 marks/150 word)
- Discuss the impact of the United States’ protectionist stance on global trade, supply chains, and its relations with emerging economies like India. (10 marks, 150 words)

4. Discuss the significance of the internationalization of the Indian Rupee and the challenges associated with it. Also, suggest measures to enhance its global acceptability. (10 marks, 150 words)
5. Central Bank Digital Currencies (CBDCs) have the potential to revolutionize financial systems, but they also pose several challenges. Discuss the significance, risks, and necessary safeguards for successful implementation of CBDCs in India. (10 marks, 150 words)
6. What are the major challenges in international police cooperation, and how does INTERPOL address issues like legal disparities, resource limitations, and political barriers? (10 marks, 150 words)
7. The repeated extension of deadlines for thermal power plants to comply with Sulphur dioxide emission norms raises questions about India's commitment to air pollution control. Critically examine the challenges in implementing these norms and suggest measures to ensure compliance without compromising energy security." (10 marks, 150 words)
8. Discuss the role of neo-colonialism in perpetuating economic inequalities with examples. (10 marks, 150 words)
9. Discuss how digital tools like telemedicine and AI are shrinking India's urban-rural healthcare gap. What systemic barriers—beyond connectivity—must India overcome to ensure equity?
10. Despite the increasing number of Geographical Indication (GI) tags in India, their potential remains underutilized. Analyze the key challenges in GI implementation and suggest measures to maximize its benefits for local producers and the economy. (10 marks, 150 words)
11. "The success of India's cooperative movement is unevenly distributed across states." Analyze the reasons for this regional imbalance and suggest steps to promote cooperative development in underrepresented areas. (15 marks, 250 words)
12. "NITI Aayog has played a transformative role in India's policymaking, but its effectiveness is constrained by structural limitations." Discuss with relevant examples. (15 marks, 250 words)
13. What are the reasons behind the perceived failure of multilateralism in achieving global cooperation? How can minilateralism complement multilateral frameworks in overcoming these challenges? (15 marks, 250 words)
14. The digital economy is emerging as a key driver of India's economic growth. Discuss its significance, challenges, and measures needed to ensure its inclusive and sustainable development. (15 marks, 250 words)
15. Discuss the significance of the right to privacy as recognized by the Supreme Court in the K.S. Puttaswamy judgment (2017) and how the Digital Personal Data Protection Act, 2023 seeks to protect this fundamental right. (15 marks, 250 words)
16. The Indian Meteorological Department has completed 150 years of service to the nation. Discuss the evolution, achievements, and challenges of IMD in making India 'Weather-ready and Climate-smart.' Also suggest measures to strengthen its capabilities in the era of climate change. (15 marks, 250 words)
17. The Annual Ground Water Quality Report 2024 highlights various concerns regarding groundwater management in India. Examine the key findings of the report and suggest comprehensive measures for sustainable groundwater management while addressing quality concerns across different regions of India." (15 marks, 250 words)
18. Discuss the significance of the Genome India Project in mapping India's genetic diversity. Highlight its potential applications and the challenges associated with genome sequencing in India. (15 marks, 250 words)
19. Recent discoveries indicate that the Iron Age in India may have begun much earlier than previously believed. How does this challenge conventional historical narratives, and what implications does it have for understanding early technological advancements in the Indian subcontinent? (15 marks, 250 words)
20. The Indus Valley Script remains undeciphered, limiting our understanding of one of the world's earliest civilizations. Discuss the challenges in deciphering the script and the possible approaches that could lead to its successful interpretation. (15 marks, 250 words)

12.4. Ethics Case Studies

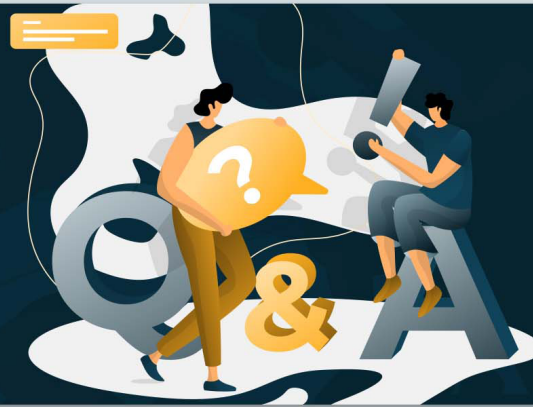
You are a senior officer in India's Ministry of External Affairs (MEA), overseeing India's foreign aid initiatives under ITEC and Development Partnership Administration (DPA). A developing country that has been receiving Indian aid for infrastructure, healthcare, and food security is now facing political turmoil, corruption allegations, and human rights violations by the local government.

Reports suggest that previous funds were misappropriated, raising concerns over transparency. It is also certain that suspending aid could worsen conditions for vulnerable populations. Finally, withdrawing aid may open space for China's growing influence through BRI loans.

Based on the above case study, answer the following questions:

1. What are the ethical principles involved in this case?
2. Who are the key stakeholders, and what are their concerns?
3. What mechanisms can ensure aid reaches beneficiaries without strengthening corrupt regimes?

ANSWERS AND EXPLANATION



13.1. MCQs Answer and Explanation

1. Answer: (c)

Explanation:

- ➔ NITI Aayog was established through a Union Cabinet resolution in 2015, replacing the Planning Commission. It functions as a policy think tank and advisory body to the government but does not have statutory or constitutional status. Unlike the Planning Commission, it does not have the authority to allocate financial resources to states.

2. Answer: (b)

Explanation:

- ➔ The Lokpal and Lokayuktas Act, 2013, provides that Lokpal consists of a Chairperson and up to 8 members, of which at least 50% must be judicial members. Additionally, at least 50% of the members must be from SCs, STs, OBCs, minorities, or women to ensure social inclusivity.

3. Answer: (c)

Explanation:

- ➔ Statement 1 is correct: WHO is a UN specialized agency focused on health.
- ➔ Statement 2 is correct: All UN member countries may become WHO members.

4. Answer: (b)

Explanation:

- ➔ Statement 1 is incorrect: India has unrestricted use of water from the Ravi, Beas and Sutlej.
- ➔ Statement 2 is correct: The treaty was signed in 1960 between India and Pakistan, mediated by the World Bank.
- ➔ Statement 3 is correct: The Permanent Indus Commission (PIC) is established to address issues regarding the treaty.
- ➔ Statement 4 is incorrect: Western rivers (Indus, Jhelum, Chenab) are allocated to Pakistan.

5. Answer: (a)

Explanation:

- ➔ Statement 1 is Incorrect: The Wholesale Price Index (WPI) measures wholesale-level price changes and does not include services. It mainly covers manufactured products, fuel, and primary articles.
- ➔ Statement 2 is Incorrect: Although Producer Price

Index (PPI) is used globally, India has not yet officially implemented it. Currently, WPI and CPI are the primary inflation indices in India.

- ➔ Statement 3 is Correct: The Consumer Price Index (CPI) includes indirect taxes, as it measures retail prices paid by consumers. However, WPI excludes indirect taxes as it captures wholesale prices before goods reach consumers.

6. Answer: (b)

Explanation:

- ➔ Statement 1 is Incorrect: Treasury Bills (T-Bills) are issued only by the Central Government, not by State Governments. States can issue only long-term State Development Loans (SDLs).
- ➔ Statement 2 is Correct: T-Bills are zero-coupon securities, meaning they do not pay interest. Instead, they are issued at a discount and redeemed at face value upon maturity.
- ➔ Statement 3 is Correct: State Development Loans (SDLs) are issued by State Governments and carry half-yearly interest payments like dated G-Secs.
- ➔ Statement 4 is Incorrect: Cash Management Bills (CMBs) are short-term securities (maturity of less than 91 days) issued by the Central Government to manage temporary cash mismatches, not long-term instruments.

7. Answer: (c)

Explanation:

- ➔ Statement 1 is correct: Only a Joint Secretary or higher rank official can authorize interception orders.
- ➔ Statement 2 is correct: The Central Government may authorize agencies to intercept messages in cases of public emergency or safety concerns.

8. Answer: (d)

Explanation:

- ➔ Statement 1 is correct: Red Notice seeks location and arrest of wanted persons.
- ➔ Statement 2 is correct: Blue Notice collects identity, location, or activity information.
- ➔ Statement 3 is correct: Green Notice warns of a person's criminal activities.
- ➔ Statement 4 is correct: Purple Notice seeks information on criminal methods or modus operandi.

9. Answer: (c)

Explanation:

- ➔ The Indian Cybercrime Coordination Centre operates under the Ministry of Home Affairs.

10. Answer: (a)

Explanation:

- ➔ Ministry of Jal Shakti released the Annual Ground Water Quality Report for 2024.
- ➔ India has the largest groundwater user globally.
- ➔ Groundwater is over-Exploited in the states of Punjab, Rajasthan, Dadra & Nagar Haveli, Daman & Diu, Haryana, Delhi

11. Answer: (d)

Explanation:

- ➔ Only four countries (Germany (1st), France, Sweden, and China) in the world have hydrogen-powered trains, capable of producing around 500 to 600 horsepower.
- ➔ All hydrogen powered rail vehicles, whether large or small, are categorized as 'hyd rail,' whether the fuel is used for the traction motors, auxiliary systems, or both.
- ➔ They are considered less expensive than electric trains.

12. Answer: (c)

Explanation:

- ➔ Turmeric is considered as rhizome, often referred to as the "Golden Spice". It is a natural indicator that changes color depending on the pH of a solution.

13. Answer: (b)

Explanation:

- ➔ The Oxfam report identifies modern-day colonialism (neo-colonialism) as a phenomenon where **rich countries of the Global North maintain power over the Global South through indirect means**, rather than formal colonial rule.
 - ◊ **Example: Digital colonialism**, where Big Tech corporations (mostly based in the Global North) dominate the digital ecosystem, giving these corporations **significant influence over political, economic, and cultural aspects** of life in the Global South.

14. Answer: (b)

Explanation:

- ➔ WEF praises India's digital health for its unique blend of robust digital public infrastructure (DPI)—like the Ayushman Bharat Digital Mission and CoWIN—and innovative private sector contributions. This combination enables scalable, adaptable healthcare solutions, positioning India as a global leader.

15. Answer: (b)

Explanation:

About Quantum Teleportation

- ➔ **Process:** Transfers quantum information using **entangled states** while preserving identity.
- ➔ **Entanglement:** Instant correlation between two particles, regardless of distance.
- ➔ **Significance:** Key for **quantum internet**, enabling **faster encryption, improved sensing, and global quantum computing connectivity.**

16. Answer: (d)

Explanation:

About Nano Bubble Technology

- ➔ **Nanobubbles:** 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.

17. Answer: (b)

- ➔ Explanation: Pongal is a Tamil Nadu festival, not Karnataka. It is a four-day event dedicated to the Sun God, marking the sun's northward journey (Uttarayan).

18. Answer: (d)

Explanation:

- ➔ **Kumbh Mela is held every 12 years in four locations** (Prayagraj, Haridwar, Ujjain, Nashik), but **Ardh Kumbh** happens every **6 years** and **Maha Kumbh** every **12 years**. The statement does not specify Maha Kumbh or Ardh Kumbh, **it is considered correct.**
- ➔ **UNESCO recognized Kumbh Mela as an Intangible Cultural Heritage in 2017. Hence, Statement 2 is correct.**
- ➔ **Hiuen Tsang**, a Chinese traveler, mentioned the festival during the reign of **Harshavardhana** in the 7th century CE. **Hence, Statement 3 is correct.**

19. Answer: (a)

Explanation:

- ➔ **Statement 1 is correct** – PMFBY covers prevented sowing due to adverse weather, providing **25% of the insured sum** as compensation.
- ➔ **Statement 2 is incorrect** – PMFBY was **mandatory** for crop loan beneficiaries earlier, but since **Kharif 2020**, it is optional for all farmers.

20. Answer: (c)

Explanation:

- Beti Bachao Beti Padhao (BBBP) Scheme : Key Initiatives –
- ➔ **Digital Guddi-Gudda Board** – Tracks **gender disparity & schemes.**
 - ➔ **Udaan** – Allows girls to **shadow professionals.**
 - ➔ **My Aim My Target** – Recognizes **top girl students.**
 - ➔ **Aao School Chalein** – **100% school enrolment** drive.
 - ➔ **Bal Cabinet** – **Simulated governance & leadership** training for girls

13.2. True/False Answers

Answers

- | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|
| 1. F | 2. F | 3. F | 4. F | 5. T | 6. T | 7. F |
| 8. F | 9. F | 10. T | 11. T | 12. F | 13. T | 14. F |
| 15. F | 16. T | 17. T | 18. T | 19. F | 20. T | |

13.3. Approach to the Mains Practice Questions

1. **Introduction:** Introduce the Lokpal and Lokayukta Act, 2013, and its intended role in anti-corruption mechanisms.
Body:
 - ➔ **Implementation challenges:** Discuss issues such as delays in appointments, jurisdictional constraints, lack of independent investigation mechanisms, and political interference.
 - ➔ **Solutions:** Suggest measures like institutional strengthening, better coordination with investigative agencies, transparency in appointments, and public accountability mechanisms.**Conclusion:** Highlight the need for a robust anti-corruption framework to enhance institutional credibility and governance.
2. **Introduction:** Provide a brief overview of the Election Commission of India (ECI) and its constitutional mandate to conduct free and fair elections.
Body:
 - ➔ **Challenges:** Discuss issues like money power, muscle power, misuse of social media, electoral violence, and lack of transparency in electoral funding.
 - ➔ **Reforms needed:** Suggest measures such as state funding of elections, stricter regulations on social media campaigns, electoral bond transparency, and strengthening the independence of ECI.**Conclusion:** Emphasize the need for electoral reforms to uphold democratic integrity and public trust.
3. **Introduction:** The U.S.'s protectionist stance, rooted in its 'America First Policy,' impacts global trade, supply chains, and relations with emerging economies like India.
Body:
 - ➔ **Global Impact:** Weakens multilateralism, disrupts supply chains, and reduces funding for global institutions like WHO.
 - ➔ **India-U.S. Relations:** Positive aspects include India as a manufacturing alternative and tech collaboration; negatives include trade deficits, H1-B visa curbs, and competition with China.**Conclusion:** The U.S.'s protectionism reshapes global trade dynamics, offering opportunities and challenges for India.
4. **Introduction:** Define the internationalization of the rupee and its importance
Body: Explain Significance of Internationalization of Rupee, challenges, measures to enhance its global acceptability.
Conclusion: Briefly highlight the way forward along with steps taken by India.
5. **Introduction:** Define Central Bank Digital Currency (CBDC) and mention India's Digital Rupee.
Body: Explain Significance of CBDCs, challenges, measures to be taken.
Conclusion: Briefly highlight the way forward along with steps taken by India.
6. **Introduction:** Highlight the need for international police cooperation and its challenges.
Body: Discuss legal disparities, resource limitations, and political barriers, and how INTERPOL addresses them.
Conclusion: Summarize how INTERPOL facilitates global cooperation through standardized frameworks, resources, and neutral platforms.
7. **Introduction:** Provide the context of the given question related to emission norms.
Body: Explain the issues behind multiple extension of compliance deadlines along with its critical analysis.
Conclusion: Suggest how balance between energy production and environmental protection can be made in conclusion.
8. **Introduction:** Define neo-colonialism briefly and link it to economic inequalities.
Body: Explain mechanisms of neo-colonialism with specific examples; highlight their impact on wealth gaps using data or trends.
Conclusion: Summarize the perpetuation of disparities and suggest a way forward.
9. **Introduction:** Introduce digital tools and their role in reducing healthcare disparities.
Body: Discuss how telemedicine and AI address the gap with examples; identify systemic barriers and explain their significance.
Conclusion: Emphasize addressing barriers for equitable healthcare.
10. **Introduction:** Define GI tags and mention their role in protecting cultural and economic heritage.
Body: Discuss the current status of GI tags in India and compare it with other countries. List the challenges. Suggest solutions.
Conclusion: Stress the need for a stronger GI ecosystem to ensure economic and social benefits for artisans and farmers.
11. **Introduction:** Briefly mention the uneven distribution of successful cooperatives across states.
Body: Give reasons for regional imbalance and suggest steps to promote cooperative development.
Conclusion: Emphasize the need for a balanced cooperative model to enhance inclusive growth and regional equity.
12. **Introduction:** Briefly introduce NITI Aayog, its mandate, and its role in policy formulation
Body:
 - ➔ Mention its transformative contributions while acknowledging the structural challenges.
 - ➔ **Transformative role:** Highlight initiatives like cooperative federalism, policy think-tank functions, and economic planning reforms with examples.
 - ➔ **Structural limitations:** Discuss issues such as lack of financial autonomy, dependence on states' cooperation, and implementation challenges.

Way forward: Suggest institutional reforms to enhance NITI Aayog's effectiveness.

- 13. Introduction:** Multilateralism struggles due to nationalism, great power rivalry, and economic inequalities, leading to the rise of minilateralism.

Body: Minilateralism offers flexibility and quick decision-making, complementing multilateralism by acting as a catalyst for negotiations, e.g., UN Cybercrime Treaty. It fills gaps in global cooperation on issues like climate change.

Conclusion: Minilateralism and multilateralism can co-exist, with minilateralism streamlining negotiations and driving progress in multilateral frameworks.

- 14. Introduction:** Define the digital economy and its components, India's size.

Body: Explain Significance of Digital economy, challenges, measures to enhance its global acceptability.

Conclusion: Briefly highlight the way forward along with steps taken by India.

- 15. Introduction:** The K.S. Puttaswamy judgment (2017) recognized the right to privacy as a fundamental right under Article 21. The Digital Personal Data Protection Act, 2023 seeks to protect this right through a comprehensive data protection framework.

Body: The DPDP Act, 2023 outlines obligations for data fiduciaries, protects digital personal data, and establishes penalties for breaches. However, challenges include concerns over state exemptions and cross-border data transfer, which need careful regulation.

Conclusion: The DPDP Act, 2023 aligns with the Supreme Court's vision, but requires continuous updates and international cooperation to address evolving privacy and data security issues.

- 16. Introduction:** Start by talking about the historical evolution of IMD since its genesis.

Body: Discuss major achievements in weather forecasting, disaster management, and technological advancements

Conclusion: Then talk about current challenges and conclude with future prospects.

- 17. Introduction:** Start by mentioning about the report and who releases it.

Body: Mention important points from the report, and provide its analysis, along with it address the concerns associated with it.

Conclusion: Mention the government initiatives taken, and also propose multidimensional way forward.

- 18. Introduction:** Define the Genome India Project (GIP) and its role in mapping India's genetic diversity.

Body

➤ **Significance of GIP:** Enhances precision medicine, disease diagnostics, public health, and genomic research while strengthening India's data sovereignty.

➤ **Applications:** Supports healthcare (genetic disorders, precision medicine), agriculture (crop improvement), public health (pathogen tracking, vaccine development), and biodiversity conservation.

➤ **Challenges:** Data security concerns, ethical risks (genetic discrimination, informed consent), high costs, and lack of a unified regulatory framework.

Conclusion: Emphasize technology upgrades, ethical safeguards, and policy reforms to maximize GIP's benefits.

- 19. Introduction:** Mention the previous timeline of the Iron Age in India (1st millennium BCE, then revised to 2nd millennium BCE) and the new evidence from Tamil Nadu (3345 BCE).

Body: Discuss the key sites and dating techniques used. Explain how the conventional view (Hittite supremacy in iron) is being challenged. Analyze the impact on Indian society, including metallurgy, economy, and warfare.

Conclusion: Discuss how these findings suggest that technological progress is region-specific and nonlinear in human history.

- 20. Introduction:** Describe the Indus Valley Script (3500+ specimens, pictographic, boustrophedon style).

Body: Discuss Challenges like No bilingual texts, short inscriptions, unknown phonetic values, Approaches like Comparative linguistics (matching symbols with Brahmi, Akkadian, or Mesopotamian scripts) and Recent Developments.

Conclusion: Highlight the importance of deciphering the script to better understand the Indus Civilization's governance, trade, and language.

13.4. Approach to Case Studies

Introduction: Start with brief about foreign aid dynamics.

Body: Mention the key ethical principles involved.

Mention stakeholders and their concerns.

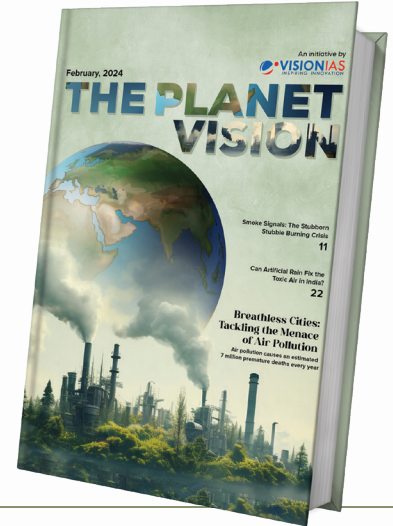
Discuss key mechanisms that can be used to reach beneficiaries.

Conclude with way forward.

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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.



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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.

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“

Look deep into nature, and then you will understand everything better. ”

—Albert Einstein



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14. Self-Evaluation



Progress Tracking Table

Activity Type	Total Questions	Correct Answers	Attempted	Score/Percentage
MCQ's				
True/False Statements				



Monthly Learning Summary

Top 3 Learnings/Insights

1.

2.

3.



Progress Comparison

Previous Month's Score

Current Month's Score

Areas of Improvement



Reflection Section

Strengths

Areas for Improvement

Goals for Next Month









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1
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Aditya Srivastava

16

in TOP 20 Selections in CSE 2023

from various programs of Vision IAS



2
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5
AIR

Ruhani



6
AIR

Srishti Dabas



7
AIR

Anmol



9
AIR

Nausheen



10
AIR

Aishwaryam Prajapati

39

Selections

in TOP 50

in CSE 20 22



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2
AIR

Garima Lohia



3
AIR

Uma Harathi N

1
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Classroom & Enquiry Office,
above Gate No. 2, GTB Nagar
Metro Building, Delhi - 110009

FOR DETAILED ENQUIRY

Please Call:
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