

CURRENT AFFAIRS

December 2023



SC Judgement on
Article 370 Abrogation



Finance Commission



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1. POLITY AND GOVERNANCE

1.1. ALL INDIA JUDICIAL SERVICE (AIJS)

Context

On Constitution Day, President Draupadi Murmu spoke at the Supreme Court's inaugural ceremony and stressed the need to establish an All-India Judicial Service.

Historical background about AIJS

- **Law Commission's 14th Report (1958):** The concept of AIJS was initially introduced in the 14th report of the Law Commission in 1958.
- **Law Commission's support:** The Law Commission, in alignment with the need for AIJS, recommended its establishment to enhance the efficiency and independence of the judicial system.
- In 2006, the **Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice in its 15th Report backed the idea of a pan-Indian judicial service and also prepared a draft Bill.**

About All India Judicial Service (AIJS)

- Article 312 of the Indian Constitution provides for the establishment of All India Judicial Service (AIJS), which shall not include any post inferior to that of a District Judge.
- The 42nd Constitutional amendment in 1976 amended Article 312 (1) empowering Parliament to make laws for the creation of one or more All-India Services, including an AIJS, common to the Union and the States.

Arguments favor in AIJS

- **Judicial vacancies:** Law Commission reports, including the 1987 report, emphasized the need for an increased judge-to-population ratio (50 judges per million) compared to the existing ratio (20 judges per million).
- **Pendency reduction:** AIJS is seen as a solution to the issue of pending cases which contribute to a more expedited judiciary.
- **Transparency and efficiency:** The establishment of AIJS promises a transparent and efficient recruitment process for judicial officers.
- **Just and fair recruitment:** A competitive recruitment process under AIJS is expected to ensure a just and fair selection of the best talents across the nation.
- **Recruitment from merit basis:** There is a proposal for an All-India Judicial Service based on merit, competition, and transparency reflects a commitment to ensuring that the judiciary comprises individuals chosen for their capabilities and talents.

- **Social empowerment:** The suggestion to recruit judges from varied backgrounds and promote talent from lower levels to higher levels is a step towards empowering individuals.

Challenges in AIJS

- **Basic Structure and Federalism:** Various critics argued that AIJS is a challenge to federalism and basic structure doctrine, which is considered as encroachment on the state's powers given by the Constitution.
- **Dichotomy between Article 233 and 312:** It raises concerns about the potential conflict between Article 233 which grants the power to appoint district judges, and Article 312, for enables the creation of AIJS.
- **Impact on state quotas:** Communities (from state quotas) may lose reservation opportunities under the union government after the implementation of AIJS.
- **Parliamentary Consultative Committee (2017) and SC/STs Committee (2021):** It was deliberated in parliamentary meetings, indicating ongoing consideration.

Way forward

- **Systemic reforms:** States should focus on cleaning up systemic issues within their respective judicial systems, addressing concerns related to delegated authorities, and uniform exam conduct.
- **Ministerial Meetings (2017):** Points like eligibility, age, selection criteria, qualification, and reservations for AIJS were discussed in meetings chaired by the Minister of Law and Justice.
- **Accountability and Transparency:** Implementing accountable and transparent recruitment mechanisms, restructuring delegated authorities, and ensuring uniformity in the examination can restore faith in the lower judiciary.
- **AIJS localized entrance exams:** Address cultural and language concerns by conducting AIJS entrance exams at zonal levels, allowing judges to be placed near to their places of origin.
- **Reconsideration of centralization:** Reconsider the centralization of services, taking into account the recurring vacancies in various central services like IAS, IPS, and armed forces.

1.2. ARTICLE 370 ABROGATION

Context

A Constitution Bench, led by CJI DY Chandrachud, delivered the verdict on challenges to the abrogation of Article 370 by the Central government in 2019.

- The verdict addresses a historical and contentious issue related to the special status of Jammu and Kashmir, its accession to India, and the subsequent abrogation of Article 370.

Brief introduction about Article 370

- **Introduction (1949)**
 - **Temporary provision:** Added to the Indian constitution on October 17, 1949, as a temporary measure.
 - **Special status:** Granted Jammu & Kashmir the authority to draft its own Constitution, limiting the legislative powers of the Indian Parliament.
- **Scope and Powers**
 - **Constituent Assembly's role:** Empowered the J&K Constituent Assembly to decide which Indian Constitution articles would be applicable.
 - **Presidential power:** Article 370, clause 3, gave the President the authority to amend its provisions.
- **Article 35A (1954)**
 - **Presidential order:** Introduced through a Presidential Order in 1954, based on the J&K Constituent Assembly's recommendation.
 - **Special provisions:** Empowered the J&K legislature to define permanent residents and grant special rights and privileges.
- **Modification in 2019**
 - **Constitution (Application to Jammu and Kashmir) Order, 2019:** Issued by the President of India on August 5, 2019.
 - **Focused changes:** Modified Article 370 itself, not a revocation.
 - **Government action:** Empowered the Government of India to make specific adjustments in the application of Article 370.

Petitioners' arguments against Article 370 abrogation

- **Article 370 is permanent:** Became permanent after the Constituent Assembly dissolved in 1957 and cannot be repealed without its recommendation.
- **Colourable exercise of power:** Article 370 was repealed indirectly by amending Article 368, substituting 'Constituent Assembly' with 'Legislative Assembly.'
- **Implied restrictions during President's Rule:** Proclamation suspending the Legislative Assembly implies restrictions on Article 370(3).

Union Government arguments for Article 370 abrogation

- **No special status:** J&K had no special status from the beginning; the draft accession agreement was the same for all princely states.
- **Parliamentary role in President's Rule:** During President's rule, Parliament exercises the role of the state legislature, applicable to all states.
- **Temporary Union Territory status:** J&K as a Union Territory is temporary; statehood will be restored over time, while Ladakh remains a Union Territory.
- **End of integration purpose:** Article 370's purpose for national integration in J&K was over and making it permanent is unconstitutional.
- **Federalism and Basic Structure:** Federalism is part of the Constitution's basic structure, but Article 370 has no place, and making it permanent violates the Constitution.
- **Sovereignty with Union Government:** Legal sovereignty rests with the Union government and Article 370 can be removed without restrictions.

Key highlights of the Supreme Court's verdict

- **Sovereignty of Jammu and Kashmir**
 - The court ruled that J&K did not retain any sovereignty after accession to India in 1947.
 - CJI DY Chandrachud said that Jammu and Kashmir held no internal sovereignty after accession to India.
- **Temporary nature of Article 370:** The court held Article 370 as a temporary, transitional provision based on historical context and its placement in Part XXI of the Constitution.
- **Abrogation of Article 370:** Upheld both presidential proclamations of August 2019, justifying the abrogation to counter persistent challenges, particularly from Pakistan.
 - The court referred to the 1994 R Bommai v Union of India ruling to validate the President's actions during the President's rule.
- **Restoration of statehood:** The Centre was directed to restore statehood, and Legislative Assembly elections were recommended to be held.

Challenges in implementing the Supreme Court's verdict

- **Implementation hurdles:** Executing the restoration of statehood and organizing elections might face logistical and administrative challenges, requiring careful planning and execution.

- **Political and social reintegration:** Reintegrating Jammu and Kashmir politically and socially into the Union, post the Article 370 abrogation, may encounter resistance and necessitate comprehensive strategies for inclusion.

Recommendations of Article 370's Verdict

- **Restoration of statehood:** The Supreme Court directed the Centre to restore statehood to Jammu and Kashmir. This recommendation aims to reinstate the region as a full-fledged state.
- **Holding legislative assembly elections:** The court recommended holding Legislative Assembly elections in Jammu and Kashmir and conducting elections is a crucial step.
- **Truth and Reconciliation Commission:** Justice Kaul suggested the creation of a Truth and Reconciliation

Commission in Jammu and Kashmir.

- This commission aims to address and acknowledge alleged violations committed by the State and its actors, promoting transparency and accountability.

Way forward

- **Implementation roadmap:** Develop a comprehensive roadmap for the restoration of statehood and the conduct of Legislative Assembly elections in Jammu and Kashmir.
- **Stakeholder consultation:** Engage in meaningful consultations with various stakeholders, including political representatives, local communities, and civil society.
- **Electoral preparedness:** Work towards creating an environment conducive to free and fair Legislative Assembly elections.

1.3. THE CHIEF ELECTION COMMISSIONER AND OTHER ELECTION COMMISSIONER (APPOINTMENT, CONDITIONS OF SERVICE, AND TERM OF OFFICE) ACT, 2023

Context

Recently, the Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Bill, 2023 gave assent by the President.

About Chief Election Commissioner and Other Election Commissioner (Appointment, Conditions of Service and Term of Office) Bill, 2023

- It replaces the Election Commission (Conditions of Service of Election Commissioners and Transaction of Business) Act, 1991.

Key features of the Bill are

- **Composition of Selection Committee:** The Selection Committee will consist of (i) the Prime Minister as Chairperson, (ii) the Leader of Opposition in Lok Sabha as member, and (iii) a Union Cabinet Minister nominated by the Prime Minister as member.
- **Search Committee:** A Search Committee will prepare a panel of five persons for the consideration of the Selection Committee. The Search Committee will be headed by the Minister of Law and Justice, and have two Secretary-level members.

About the Election Commission of India

- **Creation and composition:** Article 324 provides for the creation of the Election Commission of India, consisting of the Chief Election Commissioner (CEC) and other Election Commissioners (EC) appointed by the President.
- **Independence safeguards:** The Chief Election Commissioner enjoys protection against arbitrary removal, similar to a Judge of the Supreme Court.
- **Multi-member commission:** The President enacted the Chief Election Commissioner and other Election Commissioners (Conditions of Service) Amendment Act in 1991, establishing a multi-member Election Commission.

- **Qualification of CEC and ECs:** Persons who hold or have held posts equivalent to the rank of Secretary to the central government will be eligible to be appointed as CEC and ECs.
- **Conditions of service:** The salary of the CEC will be equivalent to that of a Judge of the Supreme Court.

Current selection process

- **Appointment procedure:** As per the Supreme Court ruling in *Anoop Baranwal vs Union of India*, a three-member high-level committee advises the President on the appointment of the CEC and ECs.
- **Constitutional provision:** Governed by Article 324 (2), the President appoints the CEC and ECs until Parliament enacts a law specifying the criteria for selection, conditions of service, and tenure.

Issues in the bill

- **Selection committee dominated by the government:** The bill proposes the establishment of a committee comprising the Prime Minister (PM), the Leader of the Opposition in the Lok Sabha (LoP), and a cabinet minister nominated by the PM.
- **Supreme Court verdict (2023) overturned:** The bill aims to overturn the Supreme Court's verdict, which recommended a high-power committee involving the PM, LoP in Lok Sabha, and the Chief Justice of India.
- **Impact on independence:** The bill's opponents claim that it negatively affects the independent character of the Election Commission, as the appointment committee becomes an 'empty formality' with members nominated by the Prime Minister.
- **Validity of selection committee recommendations:** The bill upholds the Selection Committee's validity even in the case

of vacancies or defects, potentially resulting in a committee exclusively comprised of ruling party members.

Recommendations

- **Goswami Committee (1990)**
 - **For CEC:** Appointed by the President in consultation with the Chief Justice + Leader of Opposition of Lok Sabha (or leader of the largest party in Lok Sabha).
 - **For EC:** Appointed by the President in consultation with the Chief Justice + Leader of Opposition of Lok Sabha (or leader of the largest party in Lok Sabha) + CEC.
- **National Commission to Review the Working of the Constitution Report (2002):** Prime Minister + Leader of the Opposition in Lok Sabha + the Leader of the Opposition in Rajya Sabha + the Speaker of Lok Sabha + the Deputy Chairman of Rajya Sabha.
- **Law Commission (2015):** Prime Minister + the Leader of Opposition of Lok Sabha (or the leader of the largest opposition party in Lok Sabha) + the Chief Justice.
- **Supreme Court (2023):** Prime Minister + Leader of Opposition in Lok Sabha (or leader of the single largest opposition party in Lok Sabha) + Chief Justice.

International practices

- **United Kingdom**
 - The Speaker's Committee on the Electoral Commission with MPs as members, oversees the recruitment of electoral commissioners.
 - The candidates for these posts are then approved by the House of Commons and appointed by the British monarch.
- **United States of America:** The Commission is appointed by the President and confirmed by the Senate.
- **Canada:** Appointed by a resolution of the House of Commons.

Way forward

- **Refinement in the legislative process:** The proposed amendments will seek to retain the status of the ECs with the Supreme Court judge which is thoroughly discussed in both the Houses of Parliament.
- **Consultation and consensus:** Parliamentary committees can play a crucial role in facilitating discussions and arriving at a consensus on the amendments.

1.4. COMPTROLLER AND AUDITOR GENERAL (CAG)

Current Context

In the calendar year 2023, a noticeable decline in the number of audit reports on the Union government's accounts, prepared by the Comptroller and Auditor General (CAG), was observed.

About

- Only 18 reports were tabled in Parliament, a significant decrease from the average of 22 reports per year between 2019 and 2023.
- The trend highlights a consistent decrease in the number of audits, with 2015 marking a peak at 53 reports.

Recent concerns & challenges for CAG in India

- **Decline in audit reports (2019-2022):** In 2023, a significant drop in CAG audit reports, only 18 presented in Parliament with contrast to the average of 22 reports per year from 2019 to 2022.
- **Department-wise analysis**
 - Railways and Civil Departments: Railways Department reports decreased from 27 to 14 in the last five years. Civil Department audit reports were reduced from 42 to 34 during the same period.
- **Supreme Audit Institution of India (SAI):**
 - Staff Strength and Budget Allocation: Staff strength declined in the Audit and Accounts Department, from 48,253 in 2013-14 to 41,675 in 2021-22. IA&AS officers reduced from 789 (2014-15) to 553 (2021-22).

Constitutional provisions related to the Comptroller and Auditor General (CAG)

- **Article 148**
 - Appointment and Removal: The President appoints the CAG, and removal occurs similarly to a Supreme Court Judge.
 - Ineligibility for further government office after tenure. Conditions of service for audit department personnel prescribed by the President.
- **Article 149:** CAG performs duties and exercises powers, as prescribed by Parliament. Responsibilities include overseeing financial committees and ensuring compliance with legal procedures.
- **Article 150:** The President, advised by the CAG, prescribes the 'Form of Accounts' for the Union and States.
- **Article 279:** CAG certifies "net proceeds" of taxes after deducting collection costs.
 - Parliament or the President's order may specify procedures for calculating proceeds, payments, adjustments, etc.
- **Sixth Schedule:** CAG prescribes the form of accounts and audits of District and Regional Councils, with reports submitted to the Governor for presentation before the Council.

Challenges for CAG in India

- Audits are becoming more complex, involving public-private partnerships (PPPs).

Chart 1: The chart shows the year-wise number of Union audit reports tabled in Parliament

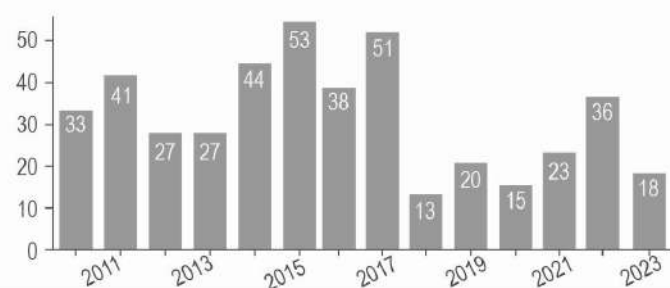


Chart 2: The chart shows the department-wise number of audit reports tabled in Parliament

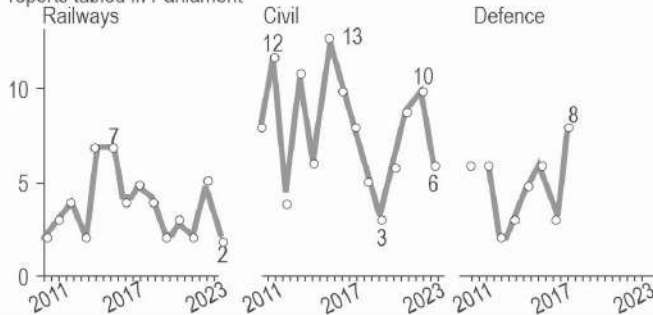


Chart 3: The chart shows the staff strength (left-axis) and staff strength as a % of sanctioned posts (right-axis) % of sanctioned employees Total employees

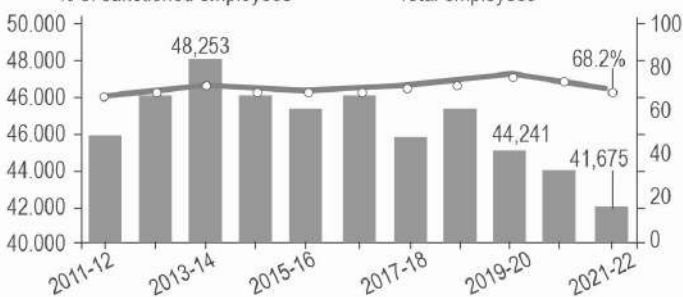
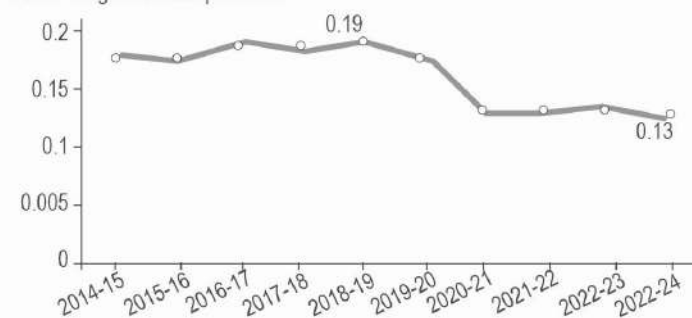


Chart 4: Year-wise amount spent by the IA & AD as a share of the Union Budget's total expenditure



Source: The Hindu

Significance of CAG in Indian democracy

- **Historical background:** Auditing's historical significance can be traced to ancient practices, with references in old treatises such as Kautilya's Artha Shastra.
 - The king's emphasis on transparent public audits conducted by honest officials.
- **Ambedkar's emphasis:** Dr. B. R. Ambedkar highlighted the paramount importance of the CAG, considering their duties even more critical than the judiciary. The CAG plays a pivotal role in upholding constitutional ideals and ensuring good governance.
- **CAG's contributions to good governance:** Notable instances include the scrutiny of the Ganga Action Plan 1979 and exposing financial discrepancies in Bihar in 2000-01.
 - High-profile cases such as the 2G scam and Commonwealth Games irregularities underscore the CAG's impact in uncovering lapses and ensuring accountability.

Role of CAG in Indian democracy:

- **Financial management oversight:** CAG ensures transparency and good governance by auditing government spending, verifying legal availability, and alignment with regulations.
- **Regulatory audit for revenue assurance:** Conducts regulatory audits to ensure revenue assessment, collection, and allocation align with established legal procedures.
- **Propriety audit for efficiency:** CAG has the authority to conduct propriety audits, scrutinizing government spending for wasteful or extravagant expenses.
- **Transparency and accountability:** Reports presented under Article 151 are crucial for parliamentary review, enhancing ethical standards, and ensuring accountability.

- No defined criteria for CAG appointment, relying on executive discretion.
- Shorter tenure due to age cap (65 years) affecting leadership continuity and expertise.
- Lack of statutory recognition for the Audit and Accounts Department's work in India compared to global counterparts.

partnerships (PPPs), government-funded societies, and Panchayati Raj Institutions under CAG's jurisdiction.

- **Amend CAG Act (1971):** To keep pace with evolving governance structures and align with contemporary challenges such as SDGs, climate change, etc.
- **Collegium Mechanism for CAG Appointment:** Establish a collegium-type mechanism for selecting the CAG, similar to the Chief Vigilance Commissioner (CVC) selection process.
- **Utilizing Technology in Audit:** Embrace technology in public audit by implementing Big Data management policies.

Way forward (Suggestion by Former CAG Vinod Rai Committee)

- **Expand CAG's jurisdiction:** Bring all public-private

- Establish centers, like the Centre for Data Management and Analytics, to leverage technology for effective audits.
- Global Collaboration: Foster partnerships and collaborations

with international counterparts through conferences and forums. Share best practices and enhance capacity development in areas like public and environmental audits.

1.5. FINANCE COMMISSION

Context

The Union Cabinet has given its approval for the Terms of Reference (ToR) of the Sixteenth Finance Commission.

- This commission is tasked with suggesting the formula for sharing revenues between the Central government and the States for the upcoming five-year period beginning on April 1, 2026.

rural roads), governance reforms, and a performance-based incentive system for the power sector.

Composition of Finance Commission

- Composition:** The Finance Commission consists of five members, including one Chairman and four other members.
- The President of India appoints all members, and their terms are determined by the President, with the possibility of reappointment as needed.
- Qualifications for four members:** The four members of the Commission are chosen from a pool with diverse expertise:
 - A high court judge or an individual qualified for such a position.
 - An expert in finance and government accounts.
 - Someone with varied experience in financial and administrative matters.
 - An individual with special knowledge of economics and related studies.

Terms of Reference (ToR)

- It outlines the **specific tasks and responsibilities** that the Commission is expected to fulfill.
- It provides a framework** for the distribution of revenues between the Union government and the state governments, as well as the principles governing the allocation of these revenues among the states.

The 15th FC's ToR included the following key aspects

- The 15th Finance Commission, **chaired by Mr. N. K. Singh**, is a constitutional body formed by the President of India.
- Vertical Devolution:** Recommended to maintain vertical devolution at 41%, consistent with the 14th Finance Commission's suggestion.
 - Remains at the same level of 42% of the divisible pool, with a 1% adjustment for the changed status of Jammu and Kashmir.
- Horizontal Devolution:** 12.5% for demographic performance, 45% for income, 15% each for population and area, 10% for forest and ecology, and 2.5% for tax and fiscal efforts.
- Revenue Deficit Grants to States: Revenue deficit grants address fiscal needs beyond states' resources.

- Fiscal Space for Centre:** Constitutes about 34% of estimated Gross Revenue Receipts to the Union.
- Grants to Local Governments**
 - Urban local bodies receive basic grants for cities/towns with a population of less than a million;
 - While million-Plus cities have performance-linked grants through the Million-Plus Cities Challenge Fund (MCF).

About Finance Commission

- The Finance Commission of India, under the provisions of Article 280 of the Indian Constitution, serves as a constitutional body.
- Established as a quasi-judicial body, its primary function is to determine methods and formulas for the equitable distribution of tax proceeds between the Central government and the states.
- Distribution of Tax Proceeds:** It is tasked with recommending the fair distribution of net proceeds of taxes between the Union and the states, as well as determining the inter-state distribution of these proceeds.

- Recommended post-devolution grants totalling around Rs. 3 trillion over five years (FY22 to FY26).
- States qualifying for grants decrease from 17 in FY22 to 6 in FY26.
- Performance-Based Incentives and Grants:** Focuses on the social sector (health, education), rural economy (agriculture,

Terms of Reference for the Sixteenth Finance Commission

- Distribution of Net Proceeds of Taxes:** Recommending how to divide the net proceeds of taxes between the Union and state governments.
- Principles for Grants-in-aid:** Establishing the principles that should govern grants-in-aid to the states under Article 275 of the Constitution.
- Augmenting Consolidated Fund of States:** Recommending measures to supplement the resources of the Panchayats and Municipalities in the states.
- Review of Disaster Management Financing:** Reviewing the current arrangements for financing disaster management initiatives.

Challenges for the 16th Finance Commission

- Global macroeconomic uncertainty:** 15th FC recognition of the complications in fiscal management due to the pandemic, emphasizing the need for a fiscal stimulus and a credible exit plan.

- **growth assumption:** Proposing a mechanism to estimate growth for 2026-27 to 2030-31, considering economic uncertainty and fiscal prudence.
- **Framework for Fiscal Sustainability:** Emphasizing the importance of a credible and implementable fiscal restructuring plan considering the post-COVID fiscal landscape.
- **Off-Budget Borrowing and Fiscal Responsibility:** Cautioning against merging budget and off-budget borrowing without revising deficit targets appropriately.
- **Restructuring of Centrally Sponsored Schemes (CSS):** Highlighting the complexity of managing CSS and

suggesting greater state involvement in design, flexibility, and implementation.

Way forward

- **Advocating for strict fiscal deficit limits for states, incentivizing compliance** with fiscal performance criteria.
- **Proposing the establishment of a loan council, following the Twelfth Finance Commission's recommendation.**
- **Cess and Surcharges:** The decline in States' effective share in the Centre's gross tax revenues (GTR), attributed to a rise in non-shareable cesses and surcharges, requires attention.

1.6. AYUSHMAN AROGYA MANDIR

Context

Recently, the Union government has renamed the existing Ayushman Bharat Health and Wellness Centres (AB-HWCs) as 'Ayushman Arogya Mandir' with the tagline 'Arogyam Parmam Dhanam'.

About Ayushman Bharat

- The Ayushman Bharat scheme was inaugurated in alignment with the **recommendations set forth by the National Health Policy of 2017.**
- This visionary undertaking is meticulously designed to **realize the concept of Universal Health Coverage (UHC)**, thus aligning with the pursuit of **Sustainable Development Goals (SDGs).**
- The Ayushman Bharat initiative represents a conscientious endeavor to shift from a fragmented, **sector-based approach to dispensing healthcare services, to a holistic and demand-responsive model** of healthcare delivery.
- Ayushman Bharat seeks to revolutionize the healthcare system by introducing groundbreaking interventions via.
 - **Health and Wellness Centres (HWCs)** and the **Pradhan Mantri Jan Arogya Yojana (PM-JAY).**

Health and Wellness Centres (HWCs)

- The Union government set in motion the **establishment of an impressive network of 150,000 HWCs**, a feat achieved through the transformation of pre-existing sub-centers and primary health centers.
- The mandate of these centers extends to **delivering Comprehensive Primary Health Care (CPHC)**, thereby orchestrating the convergence of maternal and child health services with the management of non-communicable diseases.
- It contemplates **the provision of free essential medications and diagnostic services**, thus positioning healthcare accessibility at the doorstep of communities.

Pradhan Mantri-Jan Arogya Yojana (PM-JAY)

- This health assurance scheme **pledges a health coverage of INR 5 lakhs per family per annum**, earmarked for **secondary and tertiary care hospitalization.**
- The **selection of eligible households is rigorously**

predicated on the parameters of deprivation and occupation delineated in the **Socio-Economic Caste Census 2011 (SECC 2011)** for rural and urban areas respectively.

- It has evolved from its **erstwhile designation as the National Health Protection Scheme (NHPS)**, having subsumed the **Rashtriya Swasthya Bima Yojana (RSBY).**
- The scheme guarantees a **comprehensive cover for secondary and tertiary care hospitalization** across an expansive spectrum of **both public and private impaneled hospitals throughout India.**
- Conceived to eliminate **financial catastrophe arising from medical expenditure**, which annually precipitates nearly 60 million individuals into the abyss of poverty.

Concerns

- **Treatment of Deceased Patients**
 - Patients initially labeled as "dead" continued to receive treatment, with the highest cases in Chhattisgarh, Haryana, and Jharkhand, and the lowest in Andaman & Nicobar Islands, Assam, and Chandigarh.
- **Unrealistic Household Sizes:** Registered household sizes ranged from 11 to 201 members, indicating a lack of validation controls during beneficiary registration.
- **Pensioners Availing Benefits:** Pensioners in certain states possessed PMJAY cards, receiving treatment due to delayed actions in removing ineligible beneficiaries.
- **Bogus Mobile Numbers and Aadhaar:**
 - Some beneficiaries had a single bogus mobile number, compromising verification.
 - Aadhaar numbers linked to multiple beneficiaries raised concerns about proper verification.
- **Systemic Failures**
 - CAG's report uncovered systemic issues, including private hospitals handling public hospital-reserved procedures,

infrastructural inadequacies, equipment shortages, and medical malpractice.

Way forward

- The **proposition of incorporating health into the concurrent list of responsibilities** assumes significance, as the central government's involvement in health expenditure.
- A paramount objective remains the **equitable distribution**

of resources between affluent and less prosperous states, thereby ensuring that the advantages of PM-JAY are universally attainable.

- The principles of continuous quality enhancement and accreditation, as championed by entities like the **National Accreditation Board for Hospitals & Healthcare Providers (NABH)**, form a vital compass guiding the trajectory forward.

1.7. MGNREGA

Context

A recent CAG report highlighted that among the 34 States and Union Territories, only six completed social audits in over 50% of gram panchayats.

About MGNREGA

- The **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005**, also known as MGNREGS, is a **social welfare measure** that aims to **guarantee the 'right to work'**.
- It provides a **legal guarantee for one hundred days of employment** in every financial year to adult members of any rural household willing to do **public work-related unskilled manual work** at the statutory **minimum wage**.
- The **Ministry of Rural Development (MoRD)** is **monitoring the entire implementation** of this scheme in association with state governments.
- MoRD used **Socioeconomic caste census (SECC) 2011** data for the **identification of MGNREGA beneficiaries**.
- **Primary Objectives:**
 - **Creation of productive assets:** MGNREGA seeks to create productive assets of prescribed quality and durability through wage employment, contributing to economic development.
 - **Livelihood resource base:** The Act aims to strengthen the livelihood resource base of the rural poor, addressing poverty concerns.
 - **Social inclusion:** Proactive efforts are made to ensure social inclusion of women, Scheduled Castes (SCs), and Scheduled Tribes (STs), promoting equity.

Recent concerns about MGNREGS

- **Progress in social audit:** Only six out of all States and Union Territories completed social audits in over 50% of gram panchayats except Kerala.
- **Audit standards and funding:** Audit standards were issued by CAG on December 19, 2016. Social Audit Units are taken funds equivalent to 0.5% of the MGNREGA expenditure incurred by the state.
- **Challenge in low audit rates among the states:** Mizoram, Madhya Pradesh, Chhattisgarh, and low audit completion rates among poll-bound states. This social audit challenge persists irrespective of the political party across the country.

- **State concerns and centre's reminders:** States attribute to delay in audits to the Centre's failure to release funds for independent social audits. Various complaints about delayed salaries for village-level auditors are reported.

Suggestions for MGNREGA

- **MGNREGA will expand to urban areas:** One proposed reform for MGNREGA is the extension to urban areas. This expansion aims to combat urban unemployment & and create job opportunities for individuals.
- **Universal Basic Income (UBI) as an alternative:** Considering UBI as a substitute for MGNREGA. UBI is viewed as a more efficient and less leaky option compared to existing welfare schemes.
- **National Electronic Fund Management System (NeFMS):** NeFMS is in place to ensure timely payment of wages to MGNREGA workers. Efforts are made to pay wages on time, with 99.12% of pay orders generated within 15 days in FY 2023-24.
- **Benefits of Aadhaar Payments Bridge System:** Review of APBS progress, and the mixed route of wage payment (National Automated Clearing House-NACH and APBS) extended until December 31, 2023, or until further orders.
- **Convergence with other schemes:** There is a recommendation for the convergence of MGNREGA with other existing schemes.
- **Mandatory social audits:** A crucial reform proposal emphasizes the mandatory conduct of social audits every six months. This step is envisioned to enhance the implementation of MGNREGA by ensuring regular scrutiny and transparency.
- **Precise issuance of job cards:** The suggestion is to allocate job cards strictly to individuals eligible for MGNREGA employment, excluding elected PRI representatives and MGNREGA officials from this entitlement.
- **Enhanced social audits:** Regular and timely social audits need to be conducted in all States to ensure accountability and transparency. The Centre should release funds promptly to avoid delays in the audit process.

- **Nationwide adoption of Kerala's model:** States can learn from Kerala's approach and consider adopting periodic Social Audit Public Hearings at the panchayat level.
- **Empowerment of Gram Sabha:** There should be a concerted effort to empower the Gram Sabha in monitoring

the execution of works, as mandated by Section 17 of the MGNREGA.

- **Timely disbursement of salaries:** Timely disbursement is crucial for maintaining the motivation and efficiency of those involved in social audits.

1.8. MODEL PRISONS AND CORRECTIONAL SERVICES ACT, 2023

Context

Recently, a copy of the Model Prisoners and Correctional Services Act (2023) was for the first time published on the Union's Home Ministry website.

- **Status in India:** India has 1,319 prisons, comprising 564 sub-jails, 424 District Jails, 148 Central Jails, 88 Open Jails, 41 Special Jails, 32 Women Jails, 19 Borstal Schools, and 3 Other than the above Jails.
- **Prisoners:** As per NCRB data, as of December 2021, a total of 554034 prisoners were held across the country. The distribution includes 427165 undertrials, 122,852 convicts, and 3470 detainees, which consists of 77.1%, 22.2%, and 0.6% respectively.

reformatory and correctional institutions rather than places of deterrence.

- Aims to modernize and reform prison management to align with evolving perspectives on criminal justice.

Future Outlook

- Recognizes as Persons detained/Prisons under State List subject under 7th schedule of Constitution.
- Encourages State Governments to use the guidance from the Model Act to enact suitable legislation in their jurisdictions for improved prison management and administration.

Issues with Prisons in India

- **Overcrowding**
 - Latest data (till 2021) shows a 130% occupancy rate in prisons.
 - Number of prisoners expanded from approx. 3.72 lakhs in 2011 to 5.54 lakhs in 2021.
- **Mistreatment and Torture**
 - Forced hard labor without adequate compensation.
 - Instances of torture and increasing deaths in custody.
- **Shortage of Staff**
 - Approximately 33% of the total required jail authorities remain unfilled.
 - Staff-to-prisoner ratio is 1:7, leading to violence and illegal activities.
- **Poor Hygiene**
 - Most prisons lack hygiene, adequate medical facilities, and extreme weather accommodations.
 - Women inmates face additional challenges due to poor conditions.
- **Social Issues**
 - Prisoners lack regular interaction with families, leading to mental health issues.
 - Prolonged separation contributes to psychological challenges.

About Model Prisons and Correctional Services Act, 2023

- The Ministry of Home Affairs, in collaboration with stakeholders, introduced the 'Model Prisons and Correctional Services Act, 2023' on May 10, 2023.
- It addresses various aspects of prison management, emphasizing reformation, rehabilitation, and prisoner integration into society.
- Includes provisions for 'Welfare Programs for Prisoners' and 'After-Care and Rehabilitation Services.'

Key features of Model Prisons and Correctional Services Act, 2023

- Allows electronic tracking devices for prisoners on leave, with violations leading to leave cancellation.
- Mandates advanced security infrastructure for high-risk prisoner wards, along with independent court facilities.
- Requires the integration of technology like biometrics, CCTV, RFID, and digitization for effective prison management.
- Recommends the use of cellular jamming in jails and imposes a three-year imprisonment penalty for unauthorized cell phone use by inmates.
- Calls for a classification and security assessment committee to segregate prisoners based on various criteria.
- Advocates separate cells for different categories of prisoners, including considerations for age, gender, health, and criminal history.

Need for Model Prisons and Correctional Services Act

- Repeal colonial outdated legislation i.e., Prison Act 1894 and Prisoners Act 1900.
- Reflects a global shift in perspective, viewing prisons as

International measures related to Prisons

- **Universal Declaration of Human Rights (1948)**
 - Principles of administration of justice.
 - Right to be presumed innocent until proven guilty in a public trial with all necessary guarantees for defense.

POLITY AND GOVERNANCE

- **International Covenant on Civil and Political Rights (ICCPR)**
 - Core international treaty on the protection of prisoners' rights.
 - Ratified by India in 1979; provisions must be incorporated into domestic law and state practice.
- **Declaration on Protection from Torture (1975):** Acts in tandem with human rights principles to protect individuals from torture, inhuman, and cruel behavior.
- **General UN Directives**
 - Body of Principles for the Protection of All Persons under Any Form of Detention or Imprisonment (1988).
 - Basic Principles for the Treatment of Prisoners (1990)

Way forward

- **Justice Mulla Committee (1983)**
 - Creation of All India cadre for prison staff and placing prisons under the concurrent list.
 - Formulate of National Policy on Prisons.
- **Justice V.R. Krishna Iyer Committee (1987)**
 - Suggested a separate institute for women offenders.
 - Focused on provisions to preserve the dignity of women, even if convicted.
- **Justice Amitava Roy Panel on Prison Reforms (2018-2020)**
 - Proposed special fast-track courts for petty crimes.
 - Recommended maintaining a Lawyers-Prisoners Ratio, with at least one lawyer for every 30 prisoners.

1.10. ASPIRATIONAL BLOCKS PROGRAMME (ABP)

Context

Tiriyani Block of Kumuram Bheem Asifabad district, Telangana, and Kaushambi Block of Kaushambi District, Uttar Pradesh secured 1st and 2nd ranks respectively in the first delta ranking.

- Delta Ranking captures incremental change in blocks ranked based on Key Performance Indicators (KPIs) categorized into five themes.

About the Aspirational Blocks Programme (ABP)

- Launched in January 2023 by NITI Aayog, ABP is built on the success of the Aspirational Districts Programme (ADP).
- It focuses on improving governance to enhance the quality of life of citizens in the most difficult and relatively underdeveloped blocks of India.
- 500 blocks from 7 states and 4 UTs are part of the program.
- **Each block is expected to focus on monitoring key socio-economic indicators categorized under major themes:**
 - Health and Nutrition;

- Education;
- Agriculture and allied services;
- Basic infrastructure;
- Social development.

Programme strategy includes

- **Convergence** (of Central and state Schemes)
- **Collaboration** (between NITI Aayog, Central Ministries, State Departments, District and block Administration)
- **Competition** among blocks driven by a spirit of mass Movement
- Programme identifies block officials as '**leaders of change**', who work under the guidance of their respective state and district administrations to achieve their defined strategies and output.

1.11. PANCHAYAT DEVELOPMENT INDEX

Context

Recently, the Union Minister of State for Panchayati Raj informed Lok Sabha about the Panchayat Development Index.

About Panchayat Development Index

- It is a multi-sectoral index which used to assess the overall holistic performance, progress, and development of panchayats.
- It takes into account various economic & and social parameters and indicators to gauge the well-being and development status of the local communities.
- **Ranks:** This Index ranks panchayats based on scores, and categorizes them into four grades.
 - Scores under **40 percent fall in grade D, 40-60 percent in grade C, 60-75 percent in grade B, and 75 to 90 percent in category A, while those scoring above 90 percent will be categorized as A+.**

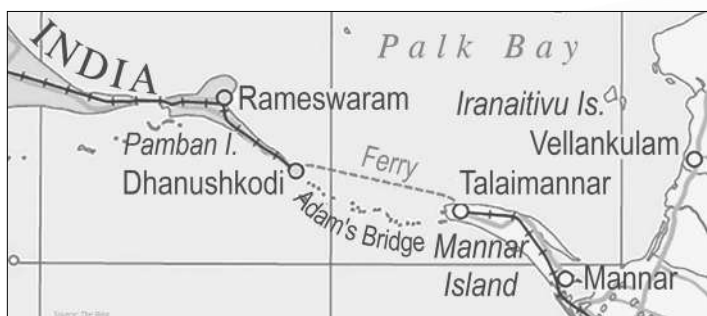
- **Under this, the Local Indicators Framework on nine themes**
 - **The nine themes:** Poverty-free and enhanced livelihood in the village, water-sufficient village, clean and green village, village with good governance, healthy village, child-friendly village, a village with self-sufficient infrastructure, socially just and socially secured villages and women-friendly village.
- **Significance**
 - It helps in identifying disparities, achievements of sustainable goals, and formulate targeted policies for rural communities.
 - It shall provide valuable insights into the areas that require attention for improvement within the rural areas.

2. INTERNATIONAL RELATIONS

2.1. INDIA-SRI LANKA

Context

Recently, Sri Lankan President Wickremesinghe revived the 20-year-old proposal to build a bridge between Rameswaram (India) and Talaimanar (Sri Lanka).



About

- This was part of his **larger vision** of regional economic integration, encompassing his **country and the southern States of India** and aimed at generating more opportunities for **economic growth**.
- Progress was stalled in **2015 despite India's willingness** to fund the bridge project.

India-Sri Lanka Relations

- **Political Relations**
 - India and Sri Lanka have cordial relations with regular high-level visits and dialogues.
 - In **March 2023**, Indian Prime Minister Narendra Modi visited Sri Lanka and held talks with President Ranil Wickremesinghe, **strengthening bilateral ties**.
- **Economic Relations**
 - India is Sri Lanka's **largest trading partner**, accounting for about **26% of its total imports** in 2023.
 - India provided a **\$400 million credit line to Sri Lanka** in 2023 to help its economic crisis.
 - India is also a major source of **foreign direct investment (FDI)** in Sri Lanka, particularly in sectors like tourism, infrastructure, and energy.
 - India gifted **150,000 metric tons of rice to Sri Lanka in 2023** to address food shortages.
- **Tourism and Cultural Exchange**
 - India is the largest source of tourists for Sri Lanka, with **over 1.2 million Indian tourists visiting the country in 2022**.
 - Millions of Sri Lankan pilgrims visit **Buddhist pilgrimage sites in India each year**, and India provides **scholarships to Sri Lankan students to study Buddhism** in India.
 - India is building a **Cultural Centre in Jaffna (the capital city of the northern province of Sri Lanka)** to promote cultural exchange.

• Infrastructure and Connectivity

- India is involved in **several infrastructure projects in Sri Lanka**, including the **Colombo-Galle highway** and the **Trincomalee Port development**.
- India and Sri Lanka are exploring the development of a **land bridge between Rameswaram and Talaimanar** and the **construction of a high-voltage direct current (HVDC) power transmission line**.
- Indian companies like **Tata Consultancy Services** and **Mahindra & Mahindra** have major operations in Sri Lanka.

• Security Cooperation

- They conduct joint naval exercises and collaborate on maritime domain awareness to **counter piracy, counter-terrorism, drug trafficking, and other maritime threats**.
- India played a significant role in the **Sri Lankan Civil War** by providing humanitarian assistance and mediating between the **government and the Tamil Tigers**.
- In 2023, India gifted a **Dornier maritime patrol aircraft to Sri Lanka** to enhance its maritime security capabilities.
- Bilateral Joint military exercise "**Mitra Shakti**" is being held regularly between both nations.

Certain issues associated with India-Sri Lanka relations

- **Chinese influence:** China's growing presence in Sri Lanka, through investments in infrastructure projects and its strategic "**Debt-Trap Diplomacy**".
- **Tamil issue:** The long-standing issue of Tamil grievances in Sri Lanka remains unresolved.
- **Fishing disputes:** Frequent incidents of Indian fishermen being arrested by Sri Lankan authorities for allegedly crossing **maritime boundaries** such as **disputes over Katchatheevu island**.
- **Environmental concerns:** Environmental concerns related to projects like the **Indian-funded East Container Terminal in Colombo** have sparked protests in Sri Lanka.
- **Regional geopolitics:** The increasing competition between **major powers in the Indo-Pacific** region can indirectly impact India-Sri Lanka relations.

Way Forward

- Building a stronger India-Sri Lanka relationship requires a **long-term commitment, proactive engagement, and a collaborative approach**.
- By addressing **historical issues, managing external**

influences, strengthening economic cooperation, and promoting people-to-people contact, both countries can build a future based on mutual respect, understanding, and

shared prosperity.

- India should follow the Gujral doctrine to deepen its relations with neighbouring countries.

2.2. INDIA-MALDIVES RELATIONS

Current Context

Recently, Maldives President Mohamed Muizzu has decided not to renew an important hydrographic survey agreement with India.



Operational Implementation

- Three joint hydrographic surveys conducted in 2021, 2022, and 2023 showcased the operationalization of the agreement.

Strength Bilateral Defence Engagement

- MNDF and Indian Navy's joint surveys emphasized the collaborative approach to ensuring maritime security.

Reasons behind the decision against renewal of agreement

National Security Concerns

- Cabinet decision aligned with the administration's commitment to terminate agreements deemed detrimental to Maldives' national security.
- Emphasizes the importance of safeguarding sovereignty.

Capacity Building Within Military

- Decision driven by the intent to enhance the Maldivian military's capability.
- Aims to entrust them with responsibilities for surveillance and policing of waters, reducing reliance on foreign participation.

Exclusion of Foreign Involvement

- Focus on excluding foreign parties from critical endeavours.
- A strategic move to ensure complete control over sensitive information related to national security.

Implementation of Election Pledges

- Reflects President Muizzu's commitment to fulfilling election promises.
- Part of a broader agenda, including the removal of Indian troops, aligning with the 'India Out' campaign.

Suggestions

- Quiet diplomacy to address the concerns of the present regime.
- Economic investment in Maldives to present India as an option beyond China to Maldives.
- Going for third-party cooperation with like-minded nations like Japan.
- Need to remain engaged politically, and institutionally and strengthen track-II diplomacy for addressing anti-India sentiments.
- Capacity building in the fields of climate change mitigation, local administration, employment generation, etc.

About Hydrographic Survey Agreement

- It was signed on June 8, 2019, during Prime Minister Narendra Modi's visit to the Maldives.
- Under the agreement, India was allowed to conduct a detailed study of the island nation's territorial waters, which includes reefs, lagoons, coastlines, ocean currents, and tide levels.
- The Joint hydrographic survey by the Indian Navy and the Maldives National Defence Force (MNDF) was carried out by an Indian Naval Ship Investigator.
- The Indian Navy ship surveyed Northern Maldives covering Ihavandhippolhu and Thiladhanmatee atolls and Gallandhu Kandu.

Significance of 2019 MoU

Political Commitment

- Resulted from a joint commitment by leaders for close cooperation in development, defence, and maritime security.
- Demonstrated collaboration between India and the Maldives.

Landmark Joint Commission Meeting

- Marked the initiation of the Joint Commission on Hydrography.

Importance of Maldives to India

- **Countering China:** India sees the Maldives as a way to limit China's influence in the Indian Ocean.
- **Soft power:** India utilizes cultural initiatives and development projects to solidify its relationship with the Maldives.
- Maldives is a key element in India's IOR strategy that includes strengthening its "Diamond Necklace" to counter

China's "String of Pearls" via:

- Keeping IOR sea lanes secure and open from threats like piracy.
- Working with Indo-Pacific partners including the US, Japan, Australia, France, the UK, and the EU.
- Several dialogues including the IORA, ION, India-SL-Maldives trilateral, etc.

2.3. INDIA-OMAN RELATIONS

Context

Recently, External Affairs Minister S. Jaishankar met Oman Sultan Haitham Bin Tarik to deepen the **strategic partnership between India and Oman**.

About

- Oman's **Sultan Haitham Bin Tarik is on his first State visit to India.**
- The visit **aims** to explore collaboration avenues for **regional stability, progress, and prosperity.**
- India extended a special invitation to **Oman to participate in the G20 Summit.**

India and Oman Bilateral Relations

- **Strategic Partnership and Regional Significance:**
 - Oman plays a crucial role in the Gulf Cooperation Council, Arab League, and Indian Ocean Rim Association.
- **Historic, and Cultural Ties:** Deep-rooted relations shaped by geography, history, and culture, spanning 5,000 years.
- **Political Relations and Strategic Evolution:**
 - **India's West Asia Policy:** Oman stands as a cornerstone of India's West Asia Policy and its oldest regional strategic partner in this region.
 - **Strategic Partnership Upgrade:** Historical ties transformed into a strategic partnership in November 2008.
- **High-Level Diplomacy and Global Engagement:**
 - **G20 Summit Participation:** The Sultanate of Oman was invited as a guest country during India's G20 Presidency, highlighting the special friendship.
 - **Exploration of Strategic Areas:** Ongoing discussions for collaboration in **Space, Rare Earth Minerals, and Cyber Security.**
- **Economic Engagement**
 - **Bilateral Trade Growth:** Robust economic ties reflected in the expansion of bilateral trade, reaching **USD 12.388 billion in 2022-2023.**
 - **Investment Flows:** Over **6000 joint ventures in Oman** with an estimated investment of **over USD 7.5 billion.**
 - **Oman-India Joint Investment Fund (OIJIF)** is a 50-50 Joint Venture.
- **Defense Cooperation and Maritime Security**
 - **Closest Defense Partner:** Oman holds a unique position as India's closest defence partner in the Gulf region.
 - **Joint Military Exercises:** Oman is the first Gulf country



with which **all three wings of India's defence forces hold joint exercises.**

1. Army exercise: **Al Najah**
 2. Air Force exercise: **Eastern Bridge**
 3. Naval Exercise: **Naseem Al Bah**
- In recent years, both countries have cooperated in the **first meeting of the Joint Maritime Committee constituted was held on 23 February 2022 virtually.**
 - **Cultural Ties and People-to-People Connections:**
 - On 16 February 2023 Embassy organized a **special Yoga Session for Oman's National Hockey Team and launched the 'Oman Yoga Yatra'.**
 - **Indian Community in Oman**

- **Size and Contributions:** A substantial Indian community of 684,771, contributing significantly to Oman's development.

Conclusion

- India and Oman lie in building on their existing strategic partnership, exploring new avenues of cooperation, and adapting to the changing regional and global dynamics.
- By leveraging their respective strengths and addressing potential challenges, they can solidify their relationship as a key pillar of stability and prosperity in the region.

2.4. INDIA-FRANCE RELATIONS

Context

French President Emmanuel Macron is set to be the **Chief Guest for India's 75th Republic Day.**

About

- This marks the sixth occasion of a French leader being the **Chief Guest at the Republic Day** celebrations in India.
- The selection of Macron aligns with **strategic and diplomatic imperatives**, emphasizing the strong convergence between India and France.

India-France Relations

- **Political and Strategic Cooperation**
 - Since 1948, India and France have fostered a **strong partnership**, elevated to a strategic level in 1998.
 - Joint initiatives like the **Raman-Charpak Fellowship** fostering doctoral student exchange.
- **Defense Cooperation**
 - Long-standing partnership with an agreement signed in **1982 and renewed in 2016.**
 - The **Defence Acquisition Council (DAC)** granted the Acceptance of Necessity (AoN) to the Navy for the acquisition of **36 Rafale Marines from France.**
- **Space Cooperation:**
 - Over 50 years of collaboration between **ISRO and CNES.**
 - France supports India's human spaceflight program, **Gaganyaan.**
- **Civil Nuclear Cooperation**
 - France was the **first country** to sign a civil nuclear cooperation agreement with India after the Nuclear Suppliers Group waiver.
 - India is a member of ITER, a multi-national consortium for experimental fusion research.
- **Economic Cooperation**
 - France is a major source of FDI (**USD 10.49 billion from April 2000 to December 2022**) for India.
 - The total trade for **FY 2022-23 has breached \$13 bn.** trademark for the first time.
 - India's exports to France have steadily increased in the



last 5 years **from \$5.23 bn. in 2018-19 to \$7.61 bn. in 2022-23.**

- **Digital Cooperation**
 - Roadmap on **Cybersecurity and Digital Technologies** signed in 2019.
 - French company Eviden wins a **\$100 million contract to build supercomputers** for weather and climate research in India.
- **Culture and Tourism Cooperation**
 - India was the **Country of Honour at the Cannes Film Festival in 2022.**
 - The government of India organized the **"Namaste France"** cultural festival in several cities of France.
- **Community in France**

- Estimated 109,000 Indian community members in France, with a significant presence in Reunion Island and other French Overseas Territories.
- **Migration and Mobility Partnership Agreement signed in 2018** to facilitate temporary circular migration.

Importance of France for India

- Support for UNSC Membership: France's advocacy strengthens India's bid for a permanent seat on the UN Security Council.
- **Counter-terrorism Cooperation:** Both countries actively condemn terrorism and collaborate on initiatives like the CCIT.
- **Defense Collaboration:** France is a **major supplier** of military equipment and solidifying their strategic partnership.
- **Indian Ocean Partnerships:** France's **membership in IORA** and support for India joining IOC strengthens regional engagement and maritime security cooperation.
- **Hafiz Saeed Listing:** France's **national and UN listings** of the Pakistani terrorist leader showcased their solidarity with India in the wake of the Pulwama attack.

Challenges associated with Indo-France relations

- **Geopolitics:** France's involvement in the Belt & Road Initiative and symbolic Indo-Pacific cooperation raise

France's interest in India

- Maintaining Indo-Pacific stability, countering China's influence, and collaborating on security.
- Accessing India's growing market, partnering on technology, and diversifying trade.
- Building on historical ties, leveraging India's soft power, and engaging the Indian diaspora.

concerns about strategic divergence.

- **Nuclear Cooperation:** The Jaitapur project's high cost, safety issues, and delays, coupled with India's nuclear liability law, cast doubt on future collaboration.
- **Defense Cooperation:** Rafael's deal controversies erode trust and transparency.

Way forward

- **25th Anniversary celebrations:** Capitalizing on the symbolic 25th anniversary of the **India-France Strategic Partnership**.
- India and France, united by **democratic values and shared interests**, can revitalize the multilateral system.
- By championing **LMICs in global health and Indo-Pacific security**, shaping the digital future, and collaborating on initiatives like Start-Up India, they can build a fairer and more secure world for all.

2.5. INDIA-ASEAN TRADE PACT

Context

Recently, India and ASEAN began negotiations to "modernize" their Free Trade Agreement (FTA).

About

- New elements like **product-specific rules and trade remedies** will be introduced to adapt to changes since the FTA was signed 15 years ago.
- The first round of negotiations for reviewing the FTA, officially known as the **ASEAN India Trade in Goods Agreement (AITGA)**, will be held on February 18-19, 2024 in New Delhi.

India and ASEAN Relations

- **Historical Foundations**
 - **Formal Dialogue Partnership:** Established in 1996, marking the official entry point for closer cooperation.
 - **Strategic Partnership:** Upgraded in 2012, signifying deeper engagement across various sectors.
- **Economic Cooperation**
 - **Growing trade figures:** Bilateral trade increased significantly, reaching over \$87 billion in 2022-23.
 - **Focus areas:** Collaboration in sectors like pharmaceuticals, chemicals, agriculture, and infrastructure. For Example: the ASEAN India Trade in Goods Agreement (AITGA).
- **Security and Defence**

- **Cybersecurity cooperation:** Addressing evolving cyber threats and promoting secure digital infrastructure.

Association of Southeast Asian Nations (ASEAN)

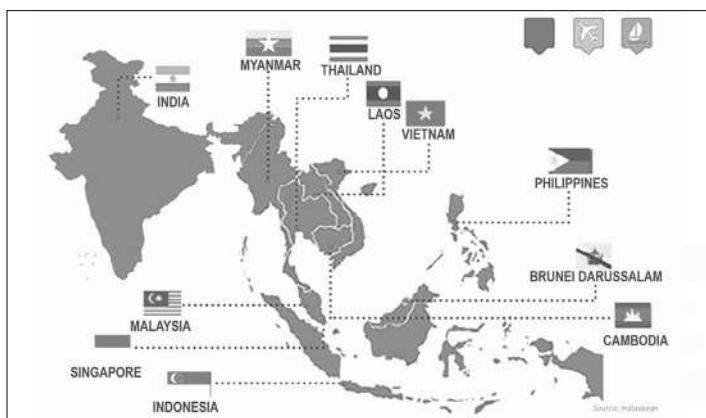
- It was established on 8 August 1967 in Bangkok, Thailand, with the signing of the ASEAN Declaration (Bangkok Declaration).
- **Founding Members of ASEAN:** Indonesia, Malaysia, Philippines, Singapore and Thailand.
- It is a regional grouping that aims to promote economic and security cooperation.
- **Ten members:** Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

Cultural and People-to-People Ties

- **Cultural exchange programs:** Promoting mutual understanding and appreciation through film festivals, art exhibitions, and educational exchanges.
- **Tourism:** Increasing tourist flows from both regions, fostering closer links between citizens.

Major concerns for India in the ASEAN FTA

- **Challenges of China's presence**
 - **Economic dominance:** China is **ASEAN's largest trading**



partner, with well-established supply chains and infrastructure in the region.

- **Political influence:** China has invested heavily in infrastructure projects and diplomatic relations with ASEAN countries.
- **Security concerns:** China's growing military presence in the South China Sea raises concerns for ASEAN countries.
- **Significant increase in trade deficit:** India's annual trade

deficit with ASEAN has jumped from \$7.5 billion to \$43.57 billion since the FTA implementation.

- **Key sectors impacted:** Chemicals and alloys, plastics and rubber, minerals, leather, textiles, gems, and jewellery are identified to be needing support.

Way forward

- By tackling the trade deficit, diversifying exports, and boosting competitiveness, India can reach its \$5 trillion economy goal.
- This will be key to realizing the full potential of India's 'Act East' policy, centered around boosting cooperation with the South-East-Asian bloc.
- India is actively working on enhancing regional connectivity with ASEAN nations via the India-Myanmar-Thailand (IMT) Trilateral Highway and the Kaladan Multimodal Transit Transport Project.
- India strategically places ASEAN at the center of its Indo-Pacific vision, known as Security and Growth for All in the Region (SAGAR).

2.6. ASIA-PACIFIC ECONOMIC COOPERATION (APEC)

Context

Recently the leaders of the Asia-Pacific Economic Cooperation (APEC) met in San Francisco USA.

About APEC

- **Foundation and purpose:** Established in 1989, the Asia-Pacific Economic Cooperation (APEC) serves as a regional economic forum.
- The primary goal is to enhance regional economic integration and foster prosperity across the Asia-Pacific region.
- **Member economies:** Comprising 21 economies, APEC includes nations like the United States, China, Japan, Russia, and others. Unique to APEC, Taiwan and Hong Kong participate as distinct entities, emphasizing its economic focus.
- **Advocacy of Free Trade:** It has championed free trade, tariff reduction, and economic liberalization. The Seoul Declaration (1991) highlighted the ambition to establish a liberalized free trade area around the Pacific Rim.
- **Economic impact:** Their initiatives contributed significantly to dynamic growth, fostering a growing middle class in the Asia-Pacific. APEC economies represent 60% of global GDP and 48% of global trade.

Highlight of APEC Summit 2023

- **Biden-Xi Meeting:** US President Joe Biden and China's President Xi Jinping's in-person meeting amid US-China tensions take center stage.
- **Focus on Trade Relations:** With US-China relations strained,

trade-related issues are major points of discussion, reflecting the prolonged tensions.

- **Indo-Pacific Economic Framework (IPEF):** President Biden aims to highlight progress on the IPEF, initiated after the US withdrawal from the Trans-Pacific Partnership.

India and APEC Membership

- **Membership request:** India formally requested APEC membership, garnering initial support from key economies like Japan, the United States, Papua New Guinea, and Australia.
- **Observer status:** Despite not securing full membership, India was granted observer status in 2020, marking its increased engagement with the forum.

Benefits for India: Joining APEC would offer India enhanced integration with the global economy, given APEC's status as a crucial trading bloc. It could empower India in negotiations and collaborations within the Asia-Pacific region.

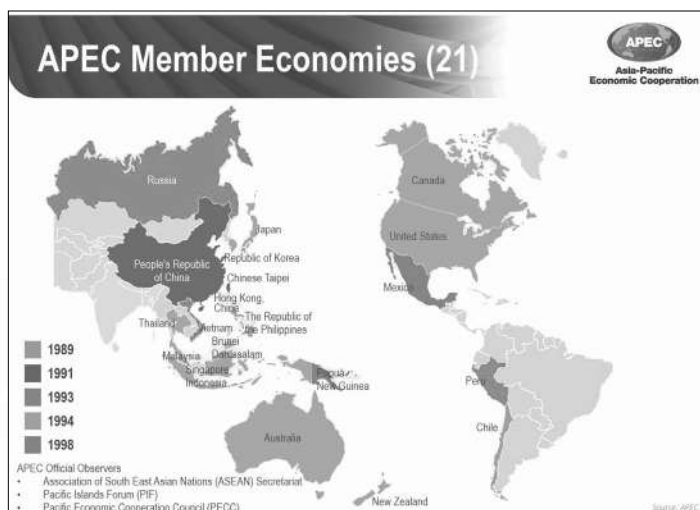
- **Potential benefits:** For India, APEC would gain access to a significant market for labor, consumers, and investments.
 - India's inclusion could provide a counterbalance to unilateral economic ambitions in the region and align APEC with the evolving concept of the 'Indo-Pacific.'

Way forward

- **Diplomatic engagement:** India should continue diplomatic

efforts to showcase the strategic and economic benefits of its APEC membership.

- **Regional collaboration:** Emphasizing the shared goals of regional stability, economic growth, and inclusive development can enhance India's appeal as a valuable partner within the APEC framework.
- **Customized cooperation:** Proposing specific areas of collaboration where India can contribute significantly to APEC objectives such as technology, innovation, and sustainable development, can make its inclusion more compelling.
- **Trade and economic reforms:** Undertaking internal reforms to align with APEC's principles of open and free trade can demonstrate India's commitment to the forum's core values, making it a more attractive candidate for membership.
- **Observer participation:** Actively participating as an observer, India can leverage this status to showcase its commitment to APEC's goals, build rapport with member economies, and gradually pave the way for full membership.



- **Strengthening Indo-Pacific Relations:** India should intensify efforts to align its foreign policy with the evolving dynamics, demonstrating how its inclusion in APEC contributes to the broader Indo-Pacific narrative.

2.7. VOICE OF GLOBAL SOUTH SUMMIT (VOGSS)

Context

Recently, India hosted the second Voice of Global South Summit (VOGSS).

About Voice of Global South Summit (VOGSS)

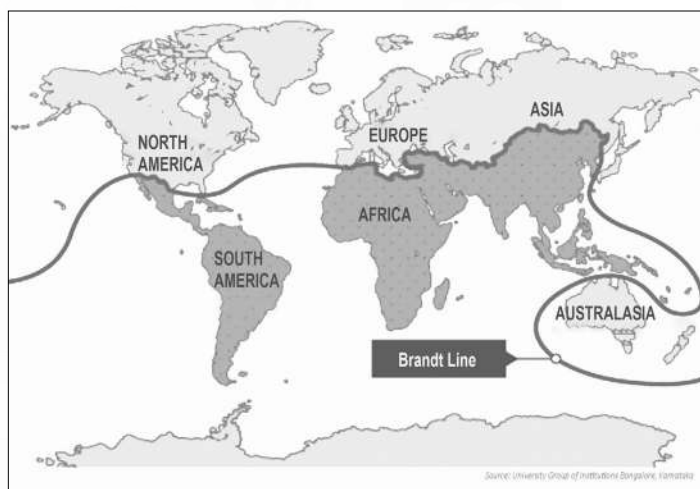
- It focused on ways to sustain the momentum generated toward a more inclusive, representative, and progressive world order.
- Indian PM unveils DAKSHIN (DAKSHIN is an acronym for Development Action for Knowledge, Science, Humanities, Innovation and Networking. It is a global centre for excellence for the Global South countries, inaugurated by Prime Minister Narendra Modi on 17 November 2023 Global South Centre of Excellence) and called for 5 'Cs' for the Global South viz. Consultation, Cooperation, Communication, Creativity, and Capacity building.
- India previously hosted the first VOGSS, where 125 Global South countries came together with the theme 'Unity of Voice, Unity of Purpose.'

About Global South

- The term 'Global South' refers to various countries often described as 'developing,' 'less developed' or 'underdeveloped.'
- The concept of the Global South can be traced to the Brandt report of 1980.

Need for South-South Cooperation

- To address the disproportionate impact of global challenges such as climate change.
- To improve representation in global forums such as the UN Security Council.



- To achieve food and energy security.
- To fulfil sustainable development goals.

India's Initiatives for South-South Cooperation

- Inducting African Union in G20 Grouping.
- Institutional initiatives such as the International Solar Alliance, Global Biofuel Alliance, Coalition for Disaster Resilient Infrastructure, etc.
- MAHARISHI for global food security: (kindly Provide brief info about it)
- G20 Digital Public Infrastructure Framework.
- Proposal for weather and climate monitoring satellite for Global South.

2.8. UNIVERSAL DECLARATION OF HUMAN RIGHTS (UDHR)

Context

10 December 2023 marks the 75th anniversary of the Universal Declaration of Human Rights (UDHR). The chosen theme for the 2023 celebrations is 'Freedom, Equality, and Justice for All'.

About the Universal Declaration of Human Rights (UDHR)

- It is a document that acts like a global road map for freedom and equality protecting the rights of every individual, everywhere.
- The declaration isn't a treaty and isn't legally binding in itself, but the principles it sets out have been incorporated into many countries' laws and it is viewed as the basis for international human rights law.
- It was the first time countries agreed on the freedoms and rights that deserve universal protection for every individual to live their lives freely, equally, and in dignity.
- The UN General Assembly in 1948 approved the UDHR at a meeting in Paris laying one of the foundation stones of the international order that emerged following the horrors of World War II.
- A formal drafting committee was chaired by Eleanor Roosevelt and consisted of members of the new Commission on Human Rights from eight countries, selected to reflect geographical distribution.
- The declaration consists of a preamble and 30 articles setting out fundamental rights and freedoms.
- The declaration says that 'all are equal before the law' and that everyone is entitled to a fair and public hearing by an independent and impartial tribunal. And it says that everyone has the right to seek and enjoy in other countries asylum from persecution.
- The declaration enshrines the rights to freedom of religion; freedom of opinion and expression; and freedom of peaceful assembly. And it says that everyone has the right to education.
- Fundamental Rights, Preamble, Directive Principles of State Policy, and Fundamental Duties of the Constitution of India reflect the principles and provisions of the UDHR.

3. ECONOMY

3.1. DOLLARIZATION

Context

Recently newly elected president of Argentina Javier Milei proposed dollarization of the economy by eliminating the Central Bank and slashing government spending.

- Argentina's electorate, facing high inflation and widespread poverty, has chosen to support Milei's radical policy promises.
- Milei has already begun to backtrack on some of his campaign promises, suggesting that **dollarization is a medium-term goal** and that currency controls will not be immediately lifted.

exchange risks for banks and providing a more stable monetary environment for financial intermediation.

- **Signalling Commitment to Economic Reforms:** Dollarization can be seen as a signal of a country's commitment to economic reforms and sound macroeconomic policies, potentially attracting foreign investment and improving the country's creditworthiness.

About Dollarization

- Dollarization is the process of **adopting a foreign currency as the official currency** of a country.
- In the context of India, dollarization would mean replacing **the Indian rupee with the US dollar as the country's legal tender**.

Potential impacts of dollarization in India

- **Economic stability:** Dollarization could potentially lead to greater economic stability in India by reducing exchange rate risk and inflation.
- **Increased trade and investment:** Dollarization could also make it easier for India to trade with other countries, particularly those that already use the US dollar.
- **Reduced reliance on the Reserve Bank of India (RBI):** Dollarization would reduce the RBI's role in setting monetary policy.

Countries adopt dollarization for various reasons

- **Economic Stability and Inflation Control:** Dollarization can effectively curb hyperinflation and stabilize prices by replacing a volatile domestic currency with the US dollar, a highly stable and globally recognized reserve currency.
- **Reduced Exchange Rate Risk:** Dollarization eliminates exchange rate risk, as the value of the domestic currency is pegged to the US dollar.
- **Integration with Global Markets:** Dollarization facilitates integration with the global economy by aligning the country's monetary system with that of the world's largest economy.
- **Improved Access to International Capital:** Dollarization can enhance a country's access to international capital markets, as investors perceive dollar-denominated assets as less risky.
- **Potential for Export Competitiveness:** Dollarization can potentially enhance export competitiveness in some cases by stabilizing the exchange rate and making exports more predictable for foreign buyers.

Hyperinflation

It is a very high rate of inflation, typically defined as 50% or more in a month. This means that prices are rising very quickly, and the value of the currency is rapidly decreasing.

- **Reduced Vulnerability to External Shocks:** Dollarization can reduce a country's vulnerability to external shocks, such as currency crises or fluctuations in global commodity prices, by pegging the currency to a stable reserve currency.
- **Potential for Banking Sector Stability:** Dollarization can contribute to banking sector stability by reducing foreign

Potential drawbacks of dollarization in India

- **Loss of monetary autonomy:** Dollarization would mean that India would lose control over its monetary policy. This could make it more difficult for the RBI to respond to economic shocks and crises.

Countries that have Adopted Dollarization

• Panama in 1904
• Namibia in 1993
• Micronesia in 1997
• Montenegro in 1999
• Ecuador in 2000

• El Salvador in 2001
• Guatemala in 2001
• Honduras in 2001
• Liberia in 2003
• Zimbabwe in 2009

- **Reduced seignories revenue:** Dollarization would eliminate seignorage (difference between the face value of money and the cost to produce it) revenue for the Indian government.
- **Increased dependence on the US economy:** Dollarization would make the Indian economy more dependent on the US economy. This could make India more vulnerable to economic shocks in the US.

Way Forward

- The decision of whether or not to dollarize is a **complex one, and there is no easy answer**. It is important to carefully weigh the potential benefits and drawbacks before making a decision.

ECONOMY

- Some experts believe that dollarization is a good option for India, as it could help to stabilize the economy and reduce inflation. However, others believe that

dollarization would be a mistake, as it would give up India's monetary autonomy and make the country more vulnerable to economic shocks in the US.

3.2. INDIA TOPS GLOBAL REMITTANCE CHARTS IN 2023: WORLD BANK REPORT

Context

According to a recent World Bank report remittances to India are estimated to rise over 11% to \$125 billion in 2023, helping it retain the top spot ahead of Mexico (\$67 billion) and China (\$50 billion).

About

- World Bank's latest migration showed that a strong base of skilled and unskilled workers in the US, the UK, Singapore and Gulf nations is expected to result in an 8% increase in flows to around \$135 billion in 2024.
- Remittances flows to South Asia are estimated to have grown 7.2% in 2023 to reach \$189 billion, tapering off from the over 12% increase in 2022.

Remittances

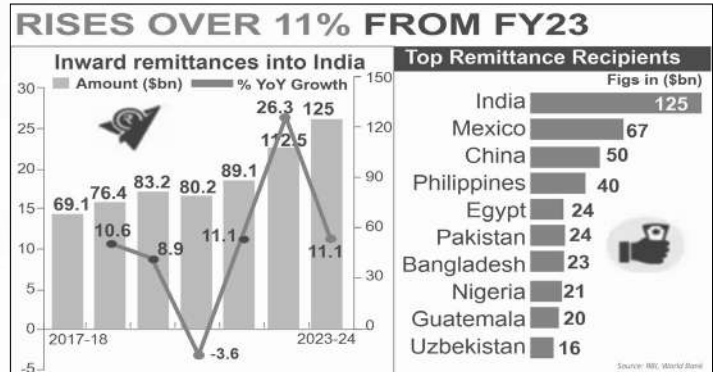
- Remittances are money transfers that migrants send to their families and friends in their home countries.
- They are an important source of income and foreign exchange for many developing countries, especially those in South Asia.

Importance of Remittance

- These flows are significant for a country like India as they help reduce the impact of falling foreign direct investment and higher trade deficit.
- Remittances increase the recipient country's foreign exchange reserves.
- Remittances support financial sector development through a strong and positive impact on bank deposits and credit to the private sector.
- Remittances are better targeted to the needs of the poor than are foreign aid or foreign direct investment.

Key drivers of remittance growth in 2023

- High employment growth in Europe reflecting extensive leveraging of worker retention programmes, and a dampening of inflation in high-income countries.



- the main contributing factors are declining inflation and strong labour markets in high-income source countries.
 - It boosted remittances from highly skilled Indians in the US, the UK, and Singapore, which collectively account for 36% of total remittance flows to India.
- Top remittance source nations include several countries of the Gulf Cooperation Council (GCC).
 - The remittance flows to India were also boosted by higher flows from the GCC, especially the UAE, which accounts for 18% of India's total remittances and is the second-largest source of them after the US.

Government Initiative

- Unified Payments Interface (UPI-Pay Now) linkage for cross-border remittances between India and Singapore.
- Remittance flows to India benefited particularly from its February 2023 agreement with the UAE for setting up a framework to promote the use of local currencies for cross-border transactions and cooperation for interlinking payment and messaging systems.

3.3. INDIA'S ECONOMY LIKELY TO GROW ABOVE 6%: IMF

Context

India's economy is expected to grow above 6% in the next five years, according to the International Monetary Fund (IMF).

Key Highlights of the Report

- Drivers of Growth:** Growth propelled by strong investment, ongoing private consumption growth, and productivity gains from digitalization.
- Article IV Consultation Report:** The IMF's report

underscores India's economic strength and outlines key factors influencing growth.

- Public Capex Agenda:** Robust public capital expenditure agenda highlighted to support India's extensive infrastructure needs.
- Impact on Growth (FY24 and FY25):** The public capex

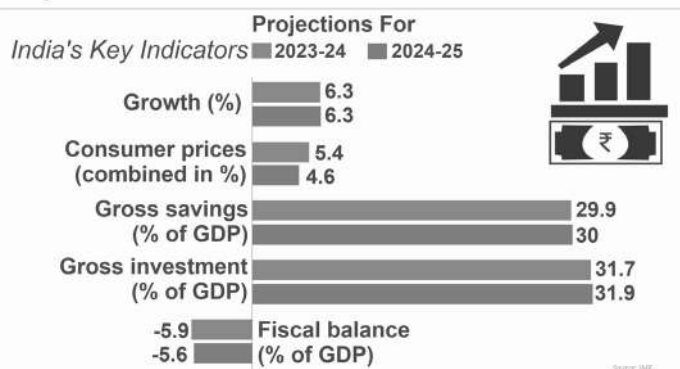
agenda is expected to boost growth, with a projected rate of 6.3% for both fiscal years 2024 and 2025.

- **Commendation for Macroeconomic Policies:** IMF commends Indian authorities for effective macroeconomic policies and reforms contributing to strong performance, resilience, and financial stability.
- **Global Economic Challenges:** Despite India's growth, the economy faces global headwinds, including a slowdown in global growth in an increasingly fragmented world.

IMF

- It promotes financial stability and monetary cooperation, which are essential to increase productivity, job creation, and economic well-being.
- It is governed by and accountable to 190 countries that make up its near-global membership.
- It was founded by 44 member countries that sought to build a framework for economic cooperation.
- It was established in 1944 in the aftermath of the Great Depression of the 1930s.
- **RBI's Monetary Policy Actions:** The report praises the Reserve Bank of India's (RBI) proactive monetary policy actions and commitment to price stability.
- **Neutral Monetary Policy Stance:** The current neutral monetary policy stance, based on a data-dependent approach, is considered appropriate and expected to

Optimism Amid Global Headwinds



gradually bring inflation back to the target.

- **India's Economic Performance:** India is recognized as the fastest-growing major economy, with various agencies and institutions raising economic growth projections.
- **Resilience and Progress:** India's economy showed robust growth, with resilient financial sectors and progress in formalization, despite global economic challenges.
- **RBI's Revised Growth Projection:** The Reserve Bank of India has raised its economic growth projection to 7% for the current fiscal year from the initial 6.5%.
- **IMF's Overall Assessment:** The IMF report provides an overall positive assessment of India's economic growth, inflation, employment, and financial sector resilience.

3.4. DEVELOPING CORPORATE BOND MARKET IN INDIA

Context

According to a recent CRISIL (Credit Rating Information Services of India Limited) report the corporate bond market growth is likely to more than double to over Rs 100 lakh crore by March 2030.

About

- In the last five years till March 2023, the corporate bond market **grew 9% per annum to Rs 43 lakh crore.**
- The corporate bond market is expected to **finance a sixth of the estimated capex.**
- **The credit risk profile** for infrastructure assets is getting stronger, with better recovery prospects and the ability to lend long-term, the agency said, noting that at present **only 15% of corporate bond issuances go to infrastructure.**

CRISIL

- It's an Indian analytical company providing ratings, research, and risk and policy advisory services. It is a subsidiary of the American company S&P Global.
- It was the first credit rating agency in India, introduced in 1988 by the ICICI and UTI jointly with share capital coming from SBI, LIC, and United India Insurance Company.

About bond

- A bond is a debt instrument that represents a loan made by an investor to a borrower (who is typically corporate or governmental).

- Governments (at all levels) and corporations commonly use bonds to borrow money.
- Governments need to fund roads, schools, dams, or other infrastructure. The sudden expense of war may also demand the need to raise funds.
- Similarly, corporations will often borrow to grow their business, buy property and equipment, undertake profitable projects, for research and development, or to hire employees.

Present status of the corporate bond market in India

- Corporate debt to GDP ratio in India stood at around 17% in 2017 as compared to 123% in the US and 19% in the case of China.
- The proportion of firms using banks as the primary source of working capital is higher than in most developing countries.
- This shows that the corporate bond market in India is underdeveloped.

Need for developing corporate bond market

- Meet investment needs: The Economic Survey

2018-19 has highlighted that India needs to shift gears from a consumption-driven economy to an investment-led economy wherein private sector investment has to become a key driver.

- **Reduce pressure on government and banks:** In the USA, the corporate bond market is well developed which enables companies to raise funds.
 - In India, given the absence of a well-functioning corporate bond market, the burden of financing infrastructure projects such as roads, ports, and airports is more on banks and the government.
- **Asset-Liability mismatch:** Banks use short-term deposits (3-5 years maturity period) to fund long-term infrastructure projects with long gestation periods leading to asset-liability mismatch.
- **Reduce foreign currency exposures:** The corporate bond market enables firms to borrow for longer maturity periods in local currency to meet their investment needs and avoid foreign currency exposures.

Reasons for an underdeveloped bond market in India

- **Narrow investor base:** Demand for corporate bonds as an investment is mostly confined to institutional investors with retail investors accounting for only 3% of outstanding issuances.
- **Dominance of government securities:** Central and state government securities constituted almost half of the total investment in the bond market.
- **Constraints on foreign investors:** The investment limit for FPIs in corporate bonds has been enhanced along with a reduction in the withholding tax. However, FPIs are not fully utilising enhanced limits due to limited liquidity in the market.
- **Absence of longer maturity bonds:** The corporate bond market is dominated by bonds with an average maturity

period of 2-5 years. This market has not been able to cater the long-term investors such as pension and insurance fund companies through the issuance of long-term maturity bonds.

- **Lack of risk management market:** Absence of interest rate/ credit derivatives which can efficiently transfer the risks arising out of interest rate movements.
- **Taxation Structure:** Stamp duties on corporate bonds across various states have not been standardised.

Way Forward

Several reports by expert committees on the development of corporate bond markets in India such as the **R. H. Patil Committee (2005)**, the **High Powered Committee on Making Mumbai an International Financial Centre in 2007 (Percy Mistry Committee)**, **H.R Khan Committee on Corporate Bond Market**. Important recommendations:

- **Easing the process of bond issuance:** To incentivise corporates to raise a part of their requirements through bonds, time and cost for public issuance and disclosure and listing requirements should be reduced and made simpler.
- **Enhancing Investor Base**
 - the scope of investment by provident/pension/ gratuity funds and insurance companies in corporate bonds should be enhanced.
 - Investment in corporate bonds should be considered as part of total bank credit while computing the credit deposit ratio by banks.
- **Bonds Primary Issuance Database:** A centralised database of all bonds issued by corporates; made available free of cost to all investors.
- **Municipal bond market:** Municipal bonds may be given some fiscal support in the form of bond insurance so that municipalities are encouraged to issue such bonds.

3.5. AGRI-FOOD SYSTEM IN INDIA

Context

A recent detailed report from the United Nations Food and Agriculture Organization (UN-FAO) has brought attention to the hidden costs within global agri-food systems.

About Agrifood Systems

- An agri-food system is a term that describes the whole process of producing, processing, distributing & consuming food and non-food agricultural products.
- It includes the activities and actors involved in agriculture, food supply chains, food transport networks, and household consumption.
- It also considers the socio-economic and environmental factors that influence food security, nutrition, and sustainability.

Key highlights of the Agri-Food System report

- **Staggering hidden costs:** The report highlights that the hidden costs of global agri-food systems surpass an astonishing \$10 trillion.
- **Impact on middle- & low-income countries:** In middle- & low-income countries, with a specific focus on India, the disclosed costs constitute nearly 11% of the GDP.
- **Attribution to unsustainable practices:** The report highlighted the escalating costs of 'unsustainable business-as-usual activities and practices' within agri-food systems.
- **Focus on transformation in Agri-Food Systems:** Recognizing

the urgent need for change, the report advocates for a transformative approach to agri-food systems.

- **Significance for sustainable agricultural practices:** The report underscores the critical importance of transitioning to sustainable agricultural practices.
 - It emphasizes the need for a holistic transformation to address the hidden costs associated with global agri-food systems effectively.

Challenges of the Agri-food system in India

- **Hidden costs in agricultural systems:** The FAO report highlights the staggering hidden costs of global agri-food systems, surpassing \$10 trillion, with India's share at \$1.1 trillion.
- **Open procurement policy bias:** The National Food Security Act's procurement policy, managed by FCI, heavily favours rice and wheat, neglecting coarse grains.
- **Food security impact:** The preference for water-intensive cash crops like sugarcane threatens food security which affects small and marginal farmers who are among the most food and nutrition.
- **Influence from global trade:** Historical trends show how global trade relations have shaped food production systems in the Global South.

Government measures

- **National Food Security Act (NFSA) 2013:** Ensure access to affordable and good-quality food by subsidizing food grains to those below the poverty line.
- **National Agriculture Market (e-NAM) platform:** Create an online marketplace for farmers to trade their products without geographical boundaries.
- **National Food Security Mission:** Increase food production and productivity through area expansion and productivity enhancement interventions in rice, wheat, pulses, oilseeds, etc.
- **National Food Processing Mission:** To promote agri-based industries for efficient use of farm produce and also reduce post-harvest losses.

- **One Nation, One Ration Card (ONORC):** Strengthen foodgrain distribution, allowing beneficiaries, especially migrant workers and marginalized communities, to easily procure food grains across the country.
- **PM Garib Kalyan Anna Yojana (PMGKAY):** Provide subsidized food grains to states, aiming to prevent hunger and malnutrition.

Way forward

- **Reduce input costs:** A key strategy involves the transition from chemical-intensive practices to less-pesticide management. Also, the adoption of natural farming practices can reduce input costs and promote sustainable agriculture.
- **Encourage for diversification for alternative income generation:** Encourage farmers to diversify income sources through value addition, such as incorporating livestock and poultry into their farming systems.
- **Focus on strategic land allocation:** Need to propose a visual representation of diversified farms, allocating for commercial crops (70%), food & fodder (20%), and environmental services (10%).
- **Emphasis on livestock integration:** Integrate livestock rearing as part of the diversified farming approach to enhance farm incomes.
- **Crop diversification:** Crop diversification, rooted in agroecology principles, is proposed as a solution to revitalize degraded soil and land.
 - Local efforts, such as 'Akkad small' in Karnataka, which involve intercropping to enhance biodiversity.
- **Nutrient-rich alternatives such as millets:** Millets are highlighted as a nutritious alternative, comparable in yield to rice and wheat, with the advantage of growing in semi-arid without burdening groundwater tables.
- **Transitioning for sustainability:** Shifting from chemical-intensive to non-pesticide management and adopting natural farming practices is advocated for reducing input costs.

3.6. FOOD SECURITY AND NUTRITION 2023

Context

More than 74% of Indians could not afford a healthy diet in 2021, according to a report released by the Food and Agriculture Organisation (FAO) of the United Nations.

About

- The FAO has launched the Regional Overview of Food Security and Nutrition 2023: Statistics and Trends.
- The report is a glimpse of the progress in meeting Sustainable Development Goals and World Health Assembly (WHA) global nutrition targets.
- In the Previous report which was released in 2020, the percentage was 76.2.

- The Global Hunger Index too had brought out similar figures earlier.
- The Centre had rubbished those data by claiming that the methodology was wrong.

Key findings in the report

Asia Pacific Region

- **The report said during the COVID-19 pandemic and the**

“5Fs” crisis – Food, Feed, Fuel, Fertilisers, and Finance – the region witnessed harrowing statistics.

- Even to date, the region is still suffering from some protracted effects.
- The latest statistics indicate that **the region, with 370.7 million undernourished people**, continues to **represent half of the global total**.
- **Similarly, Asia and the Pacific region account** for half of **the world’s severe food insecurity**, with more women than men being food insecure.
- **Prevalence rates of stunting, wasting, and overweight among children** under 5 years of age, as well as anaemia among women of reproductive age, are still off the mark in terms of World Health Assembly global nutrition targets.
- The region, according to the report, had a lower prevalence for both moderate or severe and severe food insecurity when compared with the world prevalence since 2015.

Food and Agriculture Organization (FAO)

- FAO is a specialized agency of the United Nations that leads international efforts to defeat hunger.
- With 195 members - 194 countries and the European Union - FAO works in over 130 countries worldwide.
- **Southern Asia** showed a higher prevalence of severe food insecurity compared with the other sub-regions, and it is in Eastern Asia where the lowest prevalence of severe food insecurity was observed.
 - **Compared with the world, Southern Asia** had higher percentages for both moderate or severe and severe food insecurity since 2015.

India

- According to the report, 16.6% of the country’s population is undernourished.
 - The impacts of undernourishment extend beyond health and nutritional well-being to include economic and social costs.
- **31.7% of children in the country** under five years of age suffered from **stunted growth**.
 - Stunted growth and development are the result of poor maternal health and nutrition, inadequate infant and young child feeding practices, and repeated infections interacting with a variety of other factors over a sustained period.
- **For wasting (low weight for height)**, India recorded the highest rate in the region with **18.7% of children under five years of age** facing this major health problem.
 - Reducing and maintaining childhood wasting to less than

5% is the WHA global nutrition target.

- **2.8% of the children below five years were overweight**, another health risk.
- **53% of the country’s women aged between 15 to 49 had anaemia**, which was the largest prevalence rate in the region in 2019.
 - Anaemia impairs health and well-being in women and increases the risk for adverse maternal and neonatal outcomes.
- 1.6% of the country’s adults are obese.
- On exclusive breastfeeding **among infants 0–5 months of age**, India has improved the prevalence with a percentage of 63.7%, which is higher than the world prevalence – 47.7%.

Neighbouring countries Performance

- In Pakistan, the figure is 82.2% and in Bangladesh, 66.1% of the population faced difficulties in finding healthy food.
- India has the **highest prevalence of low birth weight in the region (27.4%)**, followed by Bangladesh and Nepal.

Report warned

- Rising food costs, if not matched by rising income, will lead to more people unable to afford a healthy diet, the report warned.
 - If food costs rise at the same time incomes fall, a compounding effect occurs that can result in even more people unable to afford healthy diets.

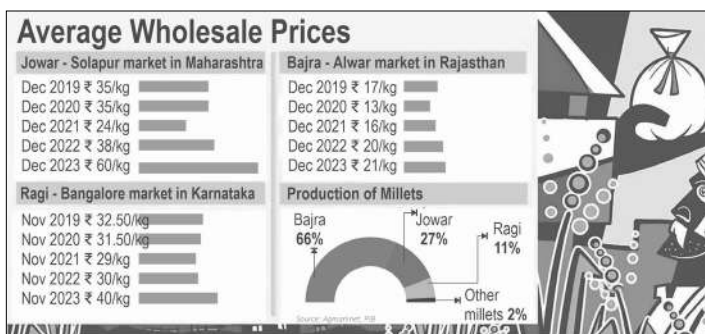
Government measures

- **National Food Security Act, 2013:** To ensure access to availability, accessibility, and affordability of food by subsidizing food grains to those below the poverty line.
- **National Food Security Mission:** To increase food production and productivity via area expansion and productivity enhancement interventions in wheat, rice, pulses, etc.
- **One Nation, One Ration Card (ONORC):** Strengthen foodgrain distribution, allowing beneficiaries, especially migrant workers and marginalized communities, to easily procure food grains across the country.
- **PM Garib Kalyan Anna Yojana (PMGKAY):** Provide subsidized food grains to states, aiming to prevent hunger and malnutrition.
- **Making India a global hub for ‘Shree Anna’:** The Indian Institute of Millets Research (IIMR), Hyderabad has been declared as the **Centre of Excellence** for sharing best practices, research and technologies at the national and international level.

3.7. MILLET (SHREE ANNA)

Context

Recently, the UN’s International Year of Millets (2023) envisaged that prices for all coarse grains, such as jowar, ragi, and bajra, to increase by between 40% and 100% in 2023.



About

- Top quality jowar and ragi have become 150% and 45% more expensive than wheat, respectively, making them unaffordable to many customers.
- Prices of millets see a jump of 15-20% every month and undergo a lot of fluctuations.

About Millets

- Millets are a group of **small-grained cereal food crops** that are **highly tolerant** to drought and other extreme weather conditions and are **grown with low chemical inputs** such as fertilizers and pesticides.
- Most millet crops are **native to India** and are popularly known as **Nutri-cereals** as they provide most of the nutrients required for the normal functioning of the human body.
- Millets are classified into **major millets and minor millets based on their grain size**.
 - **Major Millets:** Sorghum (Jowar), Pearl Millet (Bajra), and Finger Millet (Ragi/Mandua).
 - **Minor Millets:** Foxtail Millet (Kanngani/kakun), Proso Millet (Cheena), Kodo Millet (Kodo), Barnyard Millet (Sawa/Sanwa/Jhangora), Little Millet (Kutki) and Brown top millet.
 - **Pseudo millets:** Buck-wheat (Kuttu) and Amaranth (Chaulai) as "Nutri-Cereals" for production.
- In India, millets are **primarily a Kharif Crop, requiring less water** and agricultural inputs than other similar staples.
- Millets are important because of their **mammoth potential to generate livelihoods, increase farmers' income** and ensure food and nutritional security all over the world.

Kharif crops

- Also known as monsoon crops, they are sown in June or July and harvested in September.
- Examples include rice, maize, millet, sugarcane, ragi, pulses, soybean, groundnut, etc.

Importance of Millets

- Millets are **gluten-free and non-allergenic**.
- Millet consumption **decreases triglycerides and C-reactive protein**, thereby preventing cardiovascular disease.
- All millets are **rich in dietary fibre**. Dietary fibre has water-absorbing and bulking properties.

- It **increases the transit time of food in the gut** which helps in reducing the risk of inflammatory bowel disease and acts as a detoxifying agent in the body.
- The government prioritised millet recognizing its enormous potential, which also aligns with several **UN Sustainable Development Goals (SDGs)**.

International Year of the Millet

The year 2023 has been declared by the United Nations as the International Year of the Millet, following a proposal by India, which wants to position itself as a global hub for millets.

Global Production

- **India, Nigeria and China are the largest producers of millets in the world**, accounting for more than 55% of the global production. For many years, India was a major producer of millet.
- The global millets market is projected to register a **CAGR of 4.5 per cent between 2021-2026**.

National Food Security Mission (NFSM)

- Centrally Sponsored Scheme launched in 2007 based on the recommendations of the agriculture sub-committee of National Development Council (NDC).
- Improved agricultural extension services, technology transfer and decentralized planning are the main focus areas of NFSM.

India's Initiatives to Promote Millets (Shree Anna)

- The formation of **Farmer Producer Organizations (FPOs) for Shree Anna**: Involves setting up **Centers of Excellence (CoE)** and **Seed Hubs for Shree Anna** have also been supported under the **National Food Security Mission (NFSM)**.
- **States Initiative:** States such as Assam, Bihar, Chhattisgarh, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Tamil Nadu, Uttarakhand and Uttar Pradesh have **initiated Millet Missions** to promote Shree Anna.
- **India Millet Initiative:** Bringing efficiency in the **entire millet supply chain for better millet production, processing and distribution**.
- **Ministry of Food Processing Industries (MoFPI):** It has implemented the **Production Linked Incentive Scheme for the Food Processing Industry for Millet-based products (PLISMBP)** from 2022-23 to 2026-27 with an outlay of Rs. 800 crores.
- **Making India a global hub for 'Shree Anna':** The **Indian Institute of Millets Research (IIMR)**, Hyderabad has been declared as the **Centre of Excellence** for sharing best practices, research and technologies at the national and international level.

3.8. HIGH FAT SUGAR SALT (HFSS) FOODS

Context

According to a World Bank report of 2019, The consumption of High Fat Sugar Salt (HFSS) Foods is one of the major risk factors for a host of health issues.

About

- The **Non-Communicable Diseases (NCDs)** burden in India surged from **38% in 1990 to 65% in 2019**.

World Bank

- A global institution that provides financial and knowledge assistance to developing countries.
- Established in 1944, it aims to **end extreme poverty and promote development amidst the poorer countries**.
- It publishes a variety of reports:
 - World Development Report (WDR).
 - Global Economic Prospects.
 - Country Reports etc.

- The Global Burden of Diseases study reveals that annually, **1.2 million deaths in India** can be attributed to **dietary risks alone**.
- The economic impact of obesity and overweight in India was estimated at **\$23 billion in 2017**, with projections indicating a potential rise to **\$480 billion by 2060** if unaddressed.

Non-Communicable Diseases (NCDs)

- Group of conditions that are not caused by an acute infection, but result in long-term health consequences with a need for long-term treatment and care.
- These conditions include **cancers, cardiovascular disease, diabetes and chronic lung illnesses**.

International Situation

- Global Fiscal Measures Against Obesity:** Sugar-sweetened beverages (SSBs) are widely taxed in over 60 countries, while taxation on HFSS foods is increasing.
- International Examples of HFSS Taxation:** Countries like Denmark, France, the United Kingdom, and the United States have implemented dedicated taxes on HFSS foods. Colombia's "junk food law" serves as a recent model.

annual growth rate of **13.4% from 2011 to 2021**.

- Dominance in Sugar Production and Consumption:** India, being the world's largest consumer and producer of sugar in 2022, has witnessed a significant increase in consumption.

Overweight and obesity

- Defined as **abnormal or excessive fat accumulation** that presents a risk to health.
- A Body Mass Index (BMI) over 25 is considered overweight, and over 30 is obese.
- Processed Food Industry's Impact:** Approximately **50%-60% of edible sugar, salt, and fat** produced in India is consumed by the processed food industry.
- Surge in Soft Drink and Snack Sales:** Over the past decade, sales have **tripled**, surpassing **\$30 billion last year**.

HFSS Tax

- Market Failures and Negative Externalities:** The case for **taxing HFSS foods** arises from significant market failures linked to **their consumption, leading to negative externalities and internalities**.

Policy and Regulatory Measures in India

- Fat Tax:** In 2017, India introduced a 12% "fat tax" on aerated sugary beverages (ASBs) exceeding a specific sugar content.
- Front-of-Package Labelling (FOPL):** In 2019, India proposed a FOPL system with red warning symbols on packaged foods high in fat, sugar, and salt.
- Advertising Restrictions:** Regulations restrict the marketing of unhealthy food products to children, particularly around schools and during television programs aimed at young audiences.

High Fat Sugar Salt (HFSS) Foods

- Any food or drink, packaged or non-packaged, which contains **low amounts of proteins, vitamins, phytochemicals, minerals and dietary fibre** but is **rich in fat** (saturated fatty acids), **salt and sugar and high in energy** (calories) that are known to hurt health if consumed unregularly/high amounts.
- Examples of HFSS foods include**
 - Processed meats
 - Sugary drinks
 - Fried foods
 - Pastries and baked goods
 - Packaged snacks

India's situation

- Ultra-Processed Food Growth in India:** Compounded

- For example**, the escalation of diabetes and obesity due to increased HFSS consumption leads to external costs imposed on society, necessitating substantial healthcare expenditures, borne through elevated taxes to finance public health insurance such as the **Ayushman Bharat Yojana**.
- Internalities and Limited Consumer Understanding:** Influenced by aggressive marketing, it leads purchases to inadvertent harm.
- Reducing Unhealthy Items:** Implementing HFSS taxes has shown promise in various countries, demonstrating a reduction in the purchase of unhealthy items.
- HFSS Tax as a Fiscal Tool for Reformulation:** Unlike taxing sin goods like **tobacco and alcohol** for revenue, HFSS taxation incentivizes industry reformulation towards healthier alternatives.

- **Non-Regressive and Fiscally Neutral Approach:** Properly designed HFSS food taxes can be **non-regressive and fiscally neutral**.
- A recent study on **South Africa's Health Promotion Levy** showed that there were larger relative reductions in purchases of taxable beverages among **lower socio-economic status (SES) households** compared with reductions observed in higher SES households.
- **Differentiated Tax Rates Based on Nutritional Quality:** To incentivize reformulations.

- For instance, a **GST system** could place HFSS foods in the **highest rate structure, while healthier alternatives have minimal or zero tax rates**.

Way Forward

- Combined with other measures such as **promoting nutrition literacy and effective food labelling**, HFSS taxation becomes a more **potent tool to combat the rising epidemic of overweight and obesity**, creating a **sustainable and equitable food system**.

3.9. LOGISTICS EASE ACROSS DIFFERENT STATES (LEADS) REPORT 2023

Context

Recently Logistics Ease Across Different States (LEADS) report 2023 has been published by the Department for Promotion of Industry and Internal Trade (DPIIT) under the Ministry of Commerce and Industry.

Performance of landlocked states

- The government's perception survey based on responses from **7,321 respondents** said that average scores across parameters such as:
 - quality of roads, terminals, cost of logistics and availability of skilled workforce have improved in landlocked states as compared to 2019.
- Official data shows that only five states namely Gujarat, Tamil Nadu, Karnataka, Maharashtra and Telangana continue to make up for 70 per cent of exports.
- Over the years this has caused a widening gap in income and job generation between the landlocked states and coastal states.
- **State's Performance on the quality of roads and terminals:** Bihar, Himachal Pradesh, Jharkhand, and Chhattisgarh have received low perception scores on these counts while user satisfaction in Telangana, Uttar Pradesh, and Punjab improved.
- Jharkhand saw below-average scores across all indicators, encompassing infrastructure, services, and operating and regulatory categories.

LEADS

- It is an indigenous data-driven index to assess logistics infrastructure, human resources, and services across all 36 States and UTs.
- The index is an indicator of the efficiency of logistical services necessary for promoting exports and economic growth.
- The index aims at enhancing the focus on improving logistics performance across states which is essential for improving the country's trade and reducing transaction costs.
- It was conceived on the lines of the Logistics Performance Index (World Bank) and has evolved.

Performance of North-east Group states

- The North Eastern states that have seen considerable social unrest during the last year contribute **barely 2.8 per cent towards India's GDP and require the maximum**

logistics-related upliftment.

- The survey said that there has been a **marked improvement in all parameters compared to the 2019 survey**.

Objectives of LEADS 2023

- The 5th edition of the LEADS report provides insights for improvement of logistics performance at the State/UT level.
- It highlights an enhanced overall stakeholder perception and impact of various reforms, across States and UTs.
- This report, signaling a positive shift in States' performance across the key pillars— Logistics Infrastructure, Logistics Services and Operating and Regulatory Environment, empowers the State/UT Governments by providing region-specific insights for informed decision-making and comprehensive growth.

- In Manipur, the survey said that user satisfaction levels for the state are **generally lower than the average of the North-East Group for all indicators across pillars**.
- The data indicated relatively high stress in the 'ease of entry' category.
- While **Assam performed better than average on most counts**, the user performance assessment was also below the average of North-East Group in the case of Meghalaya.

Performance of Coastal States

- Indian coastal states including Andhra Pradesh, Goa, Gujarat, Karnataka, Kerala, Maharashtra, Odisha, Tamil Nadu and West Bengal account for 75 per cent of total exports from the country and have fared well in logistics historically.
- Gujarat accounts for 33 per cent followed by Maharashtra with 16 per cent and Tamil Nadu with 9 per cent share.
- However, the survey showed that Goa, Odisha and West Bengal continue to perform below the average among coastal states.
- In the case of Odisha, the survey said that there has been an improvement in the overall perception of the state's logistics ecosystem since 2019.

3.10. DIGITAL PUBLIC INFRASTRUCTURE (DPI)

Context

Recently, the Reserve Bank of India (RBI) has been working on establishing a cloud facility for the financial sector in India as a part of Digital Public Infrastructure (DPI).

About

- The service, which will be developed by a subsidiary of the central bank, will directly compete with similar services offered by American companies like Amazon, Google and Microsoft.
- The regulator is taking the same approach as the government has done with setting up 'Digital Public Infrastructure' (DPI). The biometric identity programme Aadhaar and United Payments Interface (UPI) are key examples of DPI.

About Digital Public Infrastructure (DPI)

- DPI is a digital network that enables countries to safely and efficiently deliver economic opportunities and social services to all residents.
- DPI was first introduced in India in 2009 with the launch of Aadhaar.
- It includes digital methods of identification and verification, civil registration, digital transactions, money transfers, data exchange, and information systems.

India's Digital Public Infrastructure

- **Digital Public Goods (DPGs)**
 - Examples include digital verification (e-KYC), digital signatures, Digital Repository (Digilocker), Digital Payments (UPI), etc.
 - These have resulted in greater financial inclusion, access to credit, increased economic growth, access to e-commerce markets, etc.
- **JAM (Jan Dhan, Aadhaar, and Mobile):**
 - Aadhaar provided the first identity document for 65-70 million individuals.
 - It has furthered financial inclusion, with the percentage of the population having bank accounts increasing from 53% in 2015-16 to 78% in 2019-21.
 - Additionally, direct benefit transfer of subsidies has helped the government reduce its overall subsidy expenditure by plugging the leakages.
- **Unified Digital Interfaces for Simplified Governance:**
 - Examples are the National Single Window System for business approvals, the JanSamarth portal for credit-linked Central Government schemes, the UMANG app for access to government services, and PM Gatishakti.

Digital Finance Architecture

- Include the digitalized GST system, digital identities (Aadhaar, eShram Portal, SVANidhi, Udayam Portal), and UPI.

Challenges

- **Insufficient accessibility in infrastructure:** Many regions, particularly rural and remote areas, face issues related to unreliable internet access and a lack of digital infrastructure.
- **Privacy and security concerns:** Concerns about privacy breaches and data security issues can discourage individuals from adopting digital technologies, especially when dealing with sensitive personal information.
- **Inaccessibility for Persons with Disabilities:** They may encounter difficulties in accessing and using digital technologies due to limited accessibility features and design considerations in digital platforms.
- **Language & content barriers:** The prevalence of content in a few dominant languages can exclude non-English speakers or those not proficient in the primary language.
- **Issues in affordability:** Even the cost of internet access and digital devices can be a significant barrier for numerous individuals and families, especially in low-income communities.

Way forward

- **Invest in Digital Infrastructure,** particularly in rural and remote areas, to enhance internet connectivity and access to digital services.
- **Regulatory mechanism:** Regulatory frameworks should ensure data protection, privacy, and equitable access to digital services.
- **Targeted usage of services:** For instance, digital healthcare solutions, agricultural advisories, and digital education platforms can benefit rural populations.
- **Localised content:** Digital content in regional languages should be encouraged for diverse linguistic communities, ensuring that information and services are accessible to a broader audience.

3.11. PURCHASING MANAGERS INDEX (PMI)

Context

Recently the S&P Global India Manufacturing Purchasing Managers' Index (PMI) increased to 56, indicating expansion of the manufacturing sector in India.

Understanding of PMI

- **Definition:** The PMI serves as a monthly report reflecting the growing economic trends in both manufacturing and service sectors in the country.
 - It operates as a diffusion index which provides insights into the market conditions that are expanding, contracting, or remaining stable, as managed by purchasing managers.
- **Objective:** To furnish timely about current & future business conditions.
- **Interpretation:** The PMI is a number from 0 to 100. A PMI above 50 indicates an expansion compared to the previous month.

India's recent manufacturing sector performance

- **PMI increase:** The PMI rose from October's 55.5 to 56 in November, indicating expansion, as any value above 50 signifies growth.
- **Eased in price pressures:** A noticeable feature was a significant easing of price pressures.
- **Growth in output production:** The manufacturing industry showcased robust performance, with output regaining growth momentum.
 - The growth of output gathered pace in November, driven by strengthening client demand and favourable input supply conditions.
- **Recruitment in new business:** Firms' ability to secure new business, both domestically and internationally, remained pivotal.
 - Sustained growth in new orders brought positive implications for the labour market.

Importance of recent growth

- **Improve in economic health:** The expanded capacities and the necessity to replenish finished goods stocks perform a strong signal of a robust state for India's manufacturing economy. Expectations for a strong performance continue into 2024.
- **Pressure on inflationary price:** Inflationary pressures saw a retreat, marked by the weakest rise in purchase costs since August 2020.
 - The majority of firms opted to maintain their fees unchanged since October which contributes to a stabilized economic environment.
 - **Dynamics in demand in supply:** Despite the rise in prices for raw materials and components in November, improved availability at suppliers and subdued global demand resulted in a significant retreat in cost pressures.

Advantages of PMI

- **Real-time insights of economic activities:** The PMI is a monthly release that provides real-time insights into the economic activity of the manufacturing or services sector.

This timeliness enables swift assessments by policymakers, analysts, and investors.

- **Leading indicator:** Emphasised as a leading indicator, the PMI offers an early indication of economic trends, often preceding changes seen in other indicators such as GDP growth and employment numbers.
- **Comprehensive insight:** By capturing information from various sub-components such as new orders, production, and inventories, the PMI offers a comprehensive view of economic activity.
 - **Comparative analysis:** Its standardized scale facilitates interpretation, and the availability of PMI data for numerous countries globally allows for meaningful comparative analysis.

Limitations of PMI

- **Bias in sample size:** The PMI relies on surveys from a limited sample of companies, potentially introducing sample bias. The surveyed companies may not fully represent the diversity of the entire sector or economy, leading to skewed insights.
- **Lack of industry details:** The index might not offer detailed information on which industries are the primary drivers of growth or contraction.
- **Subjectivity in survey responses:** As the PMI relies on subjective survey responses from purchasing managers, individual perceptions, biases, and temporary fluctuations in business conditions can impact the accuracy of the data.
- **Volatility and revisions:** Monthly readings of PMI can be volatile due to various factors such as seasonal variations, supply chain disruptions, or shifts in market sentiment.
 - Additionally, initial readings may be subject to revisions based on more accurate information, potentially altering the original interpretation.

Way forward

- **Adjustments in strategic policy:** Policymakers should assess the PMI trends and consider making strategic adjustments in economic policies.
- **Promotion in investment:** A positive PMI reflects growth opportunities. India can use this momentum to attract investments by showcasing a vibrant and expanding manufacturing sector.
- **Skill development initiatives:** As the manufacturing sector expands, investing in skill development programs becomes crucial.
 - Ensuring the workforce is equipped with the necessary skills can enhance productivity.
- **Opportunities in global trade:** Strengthening manufacturing capabilities can position India favourably in global trade.

3.12. SOLAR MINI-GRIDS

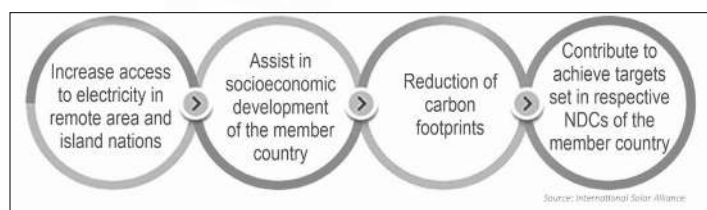
Context

According to the World Bank, private sector-owned and operated solar mini-grids are the most cost-effective and sustainable way to bring electricity for the first time to 75 per cent of the 675 million people worldwide, most of them in Sub-Saharan Africa.

About Solar Mini Grid

- A mini-grid, also called as a 'microgrid or isolated grid', can be defined as a set of electricity generators and energy storage systems interconnected to a distribution network that supplies electricity to a localized group of customers.
- They involve small-scale electricity generation (10 kW to 10MW) which acts for a limited number of consumers via a distribution grid that can operate in isolation from national electricity transmission networks.
- Mini Grid can be modular and scalable so that additional generation capacity may be added in future to meet the growing electrical loads.

Objective



Need

- Approx. 90% of people around the world have access to electricity, while the remaining 10% of the total do not have access to electricity.
- According to the United Nations Industrial Development Organization (UNIDO), around 180,000 Mini-Grids would need to supply electricity to those lacking electricity access.
- The World Bank estimates that 140,000 of these are needed in Africa.

About Global Solar Facility (GSF)

- It is a payment guarantee fund formed by the International Solar Alliance to stimulate investments in solar power projects.
- It is needed for both 'quality' (deepen the reach to low-income countries) and 'quantity' (multiply the global investments) of solar investments.
- It aims to help alleviate the constraints of contractual and financial uncertainty for solar energy.
- GSF with a fund of \$100 million, aims to enable \$ 10 billion in investment, providing clean energy access for 35-40 million African households by 2030.
- The Solar Facility would be operationalised to crowd in investments from various donors across the globe.

Benefits

- **Reduction in polluting fuels such as biomass and kerosene:** Reduce air pollution and associated health issues.
- **Increases employment opportunities and productivity:** Provide energy needs during the day as well as meet lighting requirements to carry out chores during the night hours.
 - With an increase in productivity with reliable power, local businesses can remain open for longer hours creating more opportunities for economic growth.
 - Employment opportunities can be generated for the local population by providing them with training in operations.
- **Quality of life improves:** Access to electricity improves children's education and assists health workers in effectively managing and effectively addressing critical life-threatening medical conditions.
- **Commitment to fulfilment of the country's NDC targets:** Being a clean energy source, it helps in achieving NDC targets and enhances to combat of global climate change.

3.13. WTO GOODS TRADE BAROMETER REPORT

Context

Recently, the Goods Trade Barometer Report was published by the World Trade Organization.

About

- The latest quarterly report indicates that the **volume of global merchandise trade is recovering after its recent slump**, with automobile sales and production, and electronic components trade driving the recovery.
- However, **mixed economic results** coupled with increasing **geopolitical tensions** make the near-term outlook highly uncertain.

About WTO Goods Trade Barometer Report

- It's a composite leading indicator for world trade, providing

real-time information on the trajectory of merchandise trade relative to recent trends.

- Barometer values **greater than 100** are associated with above-trend trade volumes.
- Barometer values **less than 100** suggest that goods trade has either fallen below trend or will do so shortly.

Key Observations

- **The current reading of 100.7** for the barometer index is above the **previous reading of 99.1 (August)**.
- This suggests that merchandise trade volume will

World Trade Organization (WTO)

• It's the successor to the General Agreement on Tariffs and Trade (GATT), which was created in 1947.

• The Uruguay Round (1986-94) of the GATT led to the WTO's creation.

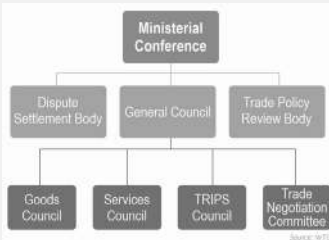
• The Marrakesh Agreement established the WTO after being signed in 1994.

• WTO is an international organization dealing with the rules based, equitable and liberalized trade between nations.

• Headquarters: Geneva, Switzerland.

• Members: 164 members (including European Union) and 23 observer governments (like Iran, Iraq, Bhutan, Libya etc).

• India is a founding member of the 1947 GATT and its successor, the WTO.



gradually revert towards its medium-term trend in the second half of 2023, although uncertainty remains high.

• **World merchandise trade volume was flat in the second quarter of 2023**, up 0.2% compared to the previous quarter but still down 0.5% year-on-year.

• **Trade statistics for the third quarter should come in slightly stronger** thanks to accelerating GDP growth in the United States and China, even as a stagnant European Union economy continued to weigh on global demand.

• **Year-on-year trade growth is likely to be strong in Q4** in any case due to the reduced amount of trade in the same period last year as **high energy prices, rising interest rates and pandemic-related disruptions** weighed on economic growth in leading economies.

• These developments are **consistent with the WTO's forecast** which predicted an 0.8% increase in global trade volume in 2023.

• While the **forecast remains unchanged**, risks to the trade outlook have shifted towards the downside in light of recent developments in the Middle East.

• The barometer's component indices are mixed, with some rising firmly above trend and others remaining on or below trend.

• **The biggest gains** were seen in the indices for **automobile sales and production** (110.0) and **electronic components trade** (109.8).

• The indices for **air freight** (100.3), **export orders** (99.4) and **container shipping** (98.0) finished on or slightly below trend, while the **raw materials index** (95.6) sank below trend.

• The strength of the automotive products and electronic components indices may be explained by **surging global demand for electric vehicles**, while the weak result for raw materials may be partly due to weakening property markets as interest rates remain elevated.

3.14. GREY MARKET AND GREY MARKET PREMIUM (GMP)

Context

Tata Technologies is expected to make a bumper listing on November 30 as the grey market premium (GMP) spiked 83 per cent over the IPO price to Rs 415.

About Grey Market

- The grey market is an **unofficial and unregulated market** where shares are **traded even before they are listed on the main exchanges**.
- In this market, **transactions happen in person**, unlike exchange trades that see no human intervention.
- Though such trades happen **outside the regulatory purview**, they are **not considered illegal**.

How can you buy and sell shares in the grey market?

- To buy shares in an IPO, buyers approach **grey market brokers** and offer to buy at a price or premium. Brokers then approach potential sellers, who had applied in the IPO.
- An individual would sell if he or she is **not sure at what levels the stock would list** and does not want to take the risk of holding it till listing.

- It must be noted that **no physical transfer of shares takes place** in the grey market. Once the shares are allocated to the seller, the seller transfers the shares to the buyers through the brokers.

• These transactions are settled through cash.

About 'IPO'

- Initial public offering (IPO) is the process by which a private company can go public by sale of its stocks to the general public.
- It could be a new, young company or an old company that decides to be listed on an exchange and hence goes public.
- Companies can raise equity capital with the help of an IPO by issuing new shares to the public or the existing shareholders can sell their shares to the public without raising any fresh capital.

4. HISTORY, ART AND CULTURE

4.1. SANT MEERABAI

Context

Recently The Prime Minister (PM) participated in the 525th birth anniversary celebration of Sant Meerabai in Mathura, Uttar Pradesh.

About Meerabai (1498-1546)

- Meera Bai is one of the great saint poets of the Bhakti movement.
- She was a **Saguna Bhakt** and held a deep devotion to Lord Krishna, whom she considered her husband.

Early life and marriage

- She was born to Rajput King **Ratan Singh** in Jodhpur, Rajasthan.
- In 1516, she was married to **Bhoj Raj** (son of Rana Sanga and prince of Mewar) who died in 1521.

Devotion to Lord Krishna

- She refused to be a part of the royal household and moved to Brindavan in pursuit of her devotion.

- She is believed to have spent her last years in Dwarka.

Composition

- She composed her poems in the Rajasthani and Braj dialect of Hindi.
- 'Mere to Giridhar Gopal', and 'Paayoji Maine Ram Ratan Dhan Paayo' are her most famous poems.
- Robert Bly and Jane Hirshfield in 'Meerabai: Ecstatic Poems' rendered some of her poems into English.

Social reformer

- She was a disciple of **Saint Ravidas** who hailed from a caste considered 'untouchable'.
- Her religious pursuits challenged societal norms for princesses and widows.

4.2. RABINDRANATH TAGORE

Context

Recently the town of Santiniketan, founded by Devendranath Tagore and popularised by Ravindranath Tagore accorded the Heritage status in the UNESCO World Heritage List.

- Located in West Bengal's Birbhum district, Santiniketan, which translates to 'abode of peace,' began its journey in 1863 and stands as the very place where Tagore laid the foundations of Visva-Bharati University.

About Rabindranath Tagore

- Within literary circles, he was celebrated under the titles 'Bhanu Singha Thakur,' 'Gurudev,' 'Kabiguru,' and 'Vishwakavi.'
- In his historic achievement, Tagore became the first non-European laureate of the Nobel Prize in Literature for his literary work 'Gitanjali' in 1913.

Educational Vision

- **Holistic development:** Tagore believed that education should nurture the emotional, spiritual, and artistic aspects of the individual, as well as the intellectual. He wanted to foster creativity, curiosity, and free thought among students, rather than rote learning and memorization.
- **Harmony with nature:** Tagore emphasized the importance of learning from nature, which he considered a powerful teacher. He designed his educational institutions to be

situated in natural surroundings, where students could interact with the environment and develop a sense of respect and responsibility for it.

- **Intercultural cooperation:** Tagore envisioned an education system that would promote international understanding and create global citizens. He founded Visva-Bharati University as a centre for art and education that would integrate the best of Eastern and Western cultures and traditions. He also advocated for the exchange of ideas and knowledge among scholars from different countries and backgrounds.
- **Social reform:** Tagore was aware of the social and economic problems that plagued India under colonial rule. He sought to create an education system that would empower the masses and uplift the marginalized sections of society.

Economic Endeavours

- **Sriniketan:** In 1922, Tagore founded the Institute of Rural Reconstruction at Sriniketan, near Santiniketan, with the help of Leonard Elmhirst, an English agronomist. The institute aimed to improve the lives of the villagers through education, health, agriculture, handicrafts, and

cooperative movements. Tagore believed that the rural people had the potential to be self-reliant and creative, and he wanted to revive their traditional skills and culture.

- **Santiniketan:** Tagore's vision of Santiniketan was not only an educational institution but also a cultural and economic hub. He encouraged the students and teachers to participate in various activities, such as gardening, pottery, weaving, painting, and music, to develop their aesthetic sense and practical skills.
- He also initiated several festivals and fairs, such as Poush Mela, Basanta Utsav, and Magh Mela, to showcase the local products and talents, and to attract visitors and tourists.

Influence on the Freedom Struggle

- The Swadeshi movement, which gained momentum as a reaction to Lord Curzon's decision to divide Bengal along communal lines in 1905, saw Tagore as a leading figure against the division.
- In this phase of tumult, where Tagore envisioned change would come with unity and education, he wrote songs

of patriotism such as Banglar Maati Banglar Jol (Earth of Bengal, Water of Bengal) that bolstered the movements and also epitomized Hindu-Muslim unity.

- Moreover, he started the Rakhi Utsav (a festival) where individuals from Hindu and Muslim communities exchanged colorful threads as a symbol of unity.
- Rabindranath Tagore received the Knighthood Award in 1915. He received that award for his contribution to literature. In 1919, following the Jallianwala Bagh massacre, he renounced his Knighthood.

Vision of Nationalism

- He held a skeptical view that the term 'Nationalism' was tied to the concept of the nation-state, which was essentially an embodiment of Western ideals rooted in mechanization and capitalism.
- According to Tagore, these ideals fundamentally clashed with Indian traditions such as pluralism, religious tolerance, and self-autonomy.
- In the national anthem, he aimed to focus on the ultimate sovereignty based on the people of India, as symbolized by 'Jan Gana Man'.

4.3. 'GARBA' IN UNESCO'S LIST OF INTANGIBLE CULTURAL HERITAGE

Context

Recently, UNESCO recognized Gujarat's 'Garba' as an Intangible Cultural Heritage.

Intangible Cultural Heritage (ICH)

- Intangible Cultural Heritage (ICH) is the term used by UNESCO to describe the practices, expressions, knowledge, and skills that communities, groups, and individuals recognize as part of their cultural heritage.
- ICH is also called living cultural heritage because it is constantly recreated and transmitted from generation to generation.
- Some examples of ICH are oral traditions, performing arts, social practices, rituals, festive events, knowledge and practices concerning nature and the universe, and traditional craftsmanship.

About

- Garba is the **15th cultural item** from India to make it to the **UNESCO list**.
- The inclusion has been made under the **provisions of the 2003 Convention for the Safeguarding of Intangible Cultural Heritage**.
- **Some of the new inscriptions include:**
 - Rickshaws and Rickshaw painting from Bangladesh;
 - Songkran (Thai New Year festival) in Thailand;
 - Hiragasy, a performing art of the Madagascar;
 - Junkanoo from the Bahamas, and
 - The Procession and celebrations of Prophet Mohammed's birthday in Sudan.

Existing 14 other elements recognized by UNESCO from India:

- Ramlila
- Yoga
- Vedic chanting
- Koodiyattam (Kerala)
- Ramman and ritual theatre (Garhwal Himalayas)
- Mudi yettu (Kerala)
- Kalbelia (Rajasthan)
- Chhau dance (Eastern India)
- Buddhist chanting (Ladakh)
- Sankirtana (Manipur)
- Thatheras of Jandiala Guru (Punjab)
- Nowruz
- Kumbh Mela
- Durga Puja in Kolkata

About Garba

- Garba is celebrated for nine days during the **festival of Navaratri**.
- The festival is dedicated to the **worship of the feminine energy or Shakti**.
- The performative and visual celebration of Garba takes place within homes and temple courtyards, public spaces in villages, urban squares, streets, and large open grounds.
- Garba thus becomes an **all-encompassing participatory community event**.

HISTORY, ART AND CULTURE

- In addition to being a religious ritual, Garba fosters **social equality** by **diluting socio-economic, gender, and rigid sect structures**.
- It continues to be **inclusive and participative** by

diverse and marginalized communities, strengthening community bonds.

4.4. GURU M. L. KOSER FESTIVAL OF MUSIC AND DANCE

Context

Recently, Pracheen Kala Kendra is presenting the 11th Guru M. L. Koser Festival of Music and Dance at New Delhi.

About Guru M.L. Koser Festival:

- Guru M.L. Koser Festival is an annual festival of music and dance organized by Pracheen Kala Kendra, an institution dedicated to the promotion and preservation of Indian classical arts.
- The festival is held in memory of Guru M.L. Koser, the founder of the Kendra and a renowned exponent of Kathak dance.
- The festival showcases eminent artists from various genres of classical music and dance, such as vocal, sitar, flute, Bharatnatyam, Odissi, and violin.
- The festival aims to celebrate the rich and diverse cultural heritage of India.

Guru Madan Lal Koser

- He was a **great exponent of Indian dance** and a brilliant

scholar of classical literature.

- He was awarded **the title of “DWITYA TANDU”**, the **second Shiva**, a **rare distinction from Manipur**, the traditional home of Indian classical dancing.

Pracheen Kala Kendra

- Late Guru M.L. Koser founded **Pracheen Kala Kendra in 1956** and is one of the **oldest, premier, and most prestigious organizations** in the country dedicated to the **promotion, preservation, and dissemination of Indian Classical arts**.
- Under ancient Gurukul-Parampara, it provides quality education in Indian **classical music, including Carnatic music, classical dances, and fine arts**, and also conducts examinations.

4.5. KHIRKI MASJID

Context

Recently, the Archaeological Survey of India (ASI) is set to begin restoration work on nine majestic domes located on the northeast corner of the grand 14th-century Khirki Masjid.

Introduction

- The Khirki Masjid is located in the settlement of the **southern periphery of the village of Khirki, Delhi**.
- It was built by **Khan-I Jahan Junan Shah**, the **Prime Minister of Firoz Shah Tughluq** of the **Tughluq Dynasty** of the **Delhi Sultanate** around the **mid-14th century**.
- The mosque is located close to the **Satpula**, a seven-arched bridge on the edge of the southern wall of **Jahapanah** (the **fourth city of Delhi**).
- In 2018, the **Archaeological Survey of India** discovered a hoard of **254 Copper Coins** on the premises of Khirki Mosque during the conservation of the monument.

Main Features

- Named after the **perforated windows**, or **Khirkis**, that decorate the upper floors, the mosque has **four open courtyards** that provide **light and ventilation** to the internal prayer spaces.
- Occupying an area of 87 square meters, it is built on a **raised platform** with **arched recessed openings (taikhana)** that is 3 meters in height.
 - Unlike an open courtyard (hypostyle) congregational mosque, the Khirki Masjid is **square in plan, subdivided into quarters**;



each quarter has its inner courtyard.

- **The Masjid belongs to the Indo-Islamic style of Architecture.**
 - **Blending between the Hindu and Muslim architectural styles** has given rise to this new style of architecture.
 - The presence of several **domes on the roof** covering the mosque and the **lattice-work (Jali) on the windows** are suggestive of the **Islamic style of Architecture**.
 - The **pillars and brackets** within this structure show local **Hindu influence**.
 - The mosque contains around **85 domes, semi-circular in section inside, but pointed on the outside**.

4.6. DOGRI LANGUAGE

Context

Recently, Delhi University, Ambedkar University, and Guru Gobind Singh Indraprastha University (GGSIPU) will soon offer Kashmiri & Dogri language classes.

About Dogri language

- Dogri, the **language of the Dogras**, belongs to the **Indo-Aryan group** and is the **first major language of the multi-lingual region** i.e. Jammu of the Jammu & Kashmir state.
- It derives its name **from 'Duggar', the ancient title of this region.**
- Script: Dogri had its own script namely **"Dogare Akkhar"** or **"Dogare"** based on the **Takri script** which is closely related to the **Sharada script** employed by the **Kashmiri language.**
- This script was the **official language script during the regime of Maharaja Ranbir Singh (1857-1885 AD).**
- The **Dogri folk music and world-famous Basohli miniature paintings** constitute the proud cultural heritage of India.
- **Constitution status:** Dogri language was enshrined in the **8th Schedule of the Constitution through the 92nd Amendment Act in 2003.**

4.7. SAHITYA AKADEMI AWARD 2023

Context

Recently, Sahitya Akademi announced its annual Sahitya Akademi Award 2023.

About

- The Sahitya Akademi 2023 Award for the **Hindi language** has been given to **Sanjeev** for his novel **'Mujhe Pehchano'**.
- Neelam Sharan Gaur's novel 'Requiem in Raag Janaki' will be awarded in English language and Sadiqa Nawab Sahar's novel 'Rajdev Ki Amrai' will be given in Urdu language.

Award winners

Sahitya Akademi Award

- It is an **autonomous body under the Ministry of Culture** and is dedicated to the promotion of literature in Indian languages.
- The award, in the form of a **casket containing an engraved copper plaque, a shawl, and ₹1,00,000.**
- The awards recommended by distinguished **jury members in 24 languages (22 languages of 8th schedule and English plus Rajsthani)**, were approved by the Executive Board of the Sahitya Akademi.

About Eighth Schedule

- The Eighth Schedule entails the official languages of the Republic of India.
- Part XVII of the Indian Constitution deals with official languages in Articles 343 to 351.
- The Constitutional provisions relating to the **Eighth Schedule** occur in **articles 344(1) and 351** of the Constitution.
- **Article 344(1):** It provides for the constitution of the Commission by the President, which shall consist of a Chairman and such other members representing the different languages to make recommendations to the President.
- **Article 351:** It shall be the duty of the Union to promote the spread of the Hindi language, and to develop it so that it may serve as a medium of expression for all the elements.
- **Criteria for eligibility**
 - Indian Nationality.
 - Work/Book must be excellent contribution to the

Category	Awardees
Poetry	Vijay Verma (Dogri), Vinod Joshi (Gujarati), Manshoor Banihali (Kashmiri), Sorokkhaibam Gambhini (Manipuri), Ashutosh Parida (Odia), Swarnjit Savi (Punjabi), Gaje Singh Rajpurohit (Rajasthani), Arun Ranjan Mishra (Sanskrit) and Vinod Asudani (Sindhi)
Novel	Swapnamay Chakrabarti (Bengali), Neelum Saran Gour (English), Sanjeev (Hindi), Krushnat Khot (Marathi), Rajasekaran (Devibharathi) (Tamil) and Sadiqua Nawab Saher (Urdu)
Short stories	Pranavjyoti Deka (Assamese), Nandeswar Daimari (Bodo), Prakash S. Parienkar (Konkani), Taraceen Baskey (Turia Chand Baskey) (Santali) and T. Patanjali Sastry (Telugu)
Essays	Lakshmisha Tolpadi (Kannada), Basukinath Jha (Maithili) and Judhabir Rana (Nepali)
Literary Study	E.V. Ramakrishnan (Malayalam)

5. ENVIRONMENT

5.1. UNFCCC CONFERENCE OF PARTIES 28 (COP 28)

Context

Recently, the Conference of Parties 28 (COP 28) to the United Nations Framework Convention on Climate Change (UNFCCC) was concluded in Dubai, UAE.

About COP

- It stands for **Conference of the Parties**. It's a series of meetings **held yearly** under the **United Nations Framework Convention on Climate Change (UNFCCC)**.
- The purpose of these meetings is **to bring together all the countries** that have signed the UNFCCC **to discuss and take action on climate change**.

Key outcomes of COP28

- **Transitioning Away from Fossil Fuels:**
 - COP28 calls for transitioning away from fossil fuels in energy systems, in a **just, orderly, and equitable manner**, to achieve **net zero by 2050**.
- **Global Renewables and Energy Efficiency Pledge:**
 - Signatory countries to work together to **triple the world's installed renewable energy** generation capacity to at least 11,000 GW by 2030.
 - It also calls for collectively **doubling the global average annual rate of energy efficiency improvements** from **around 2% to over 4% every year until 2030**.
- **Operationalization of 'Loss and Damage' Fund:**
 - **'Loss and damage'** refer to impacts of climate change that cannot be avoided either by mitigation or adaptation.
 - **Loss and Damage Fund** is a financial assistance programme aimed at providing support to the most vulnerable and impacted nations by the effects of climate change.

About UNFCCC

- It is a global agreement to address climate change by reducing greenhouse gas emissions.
- Adopted in 1992 at the Earth Summit in Rio de Janeiro, Brazil.
- Currently has 197 Parties, which include 196 countries and the European Union.
- Provides a framework for international cooperation on climate change through regular meetings and conferences, like the annual Conference of the Parties (COP).
- It was established at the UNFCCC CoP 27 in the year of 2022.
- Member countries reached an agreement to **operationalize the Loss and Damage (L&D) Fund under the World Bank**.
- Global Goal on Adaptation (GGA):
 - Positively, an explicit 2030 date has been integrated into the text for targets on **water security, ecosystem**

restoration, and health.

• The Global Cooling Pledge

- 66 national government signatories committed to working together **to reduce cooling-related emissions** across all sectors **by at least 68% globally relative to 2022 levels by 2050**.

India's stand at COP-28

- India welcomed the operationalization of the Loss and Damage Fund and establishment of the UAE Climate Investment Fund at COP-28 and called for the COP-28 to deliver on the following issues related to Climate Finance :
 - Progree in new collective quantified goal on climate finance
 - Replenishment of green climate fund and adaptation fund
 - Affordable finance to be made available by Multilateral Development Banks for Climate Action
 - Developed countries must eliminate their carbon footprint before 2050
- **India's initiatives at CoP28**
 - India has co-launched Phase II of the Leadership Group for Industry Transition (LeadIT 2.0) for the period 2024-26, at COP-28 in Dubai.
 - India and Sweden also launched the Industry Transition Platform, which will connect the governments, industries, technology providers, researchers, and think tanks of the two countries.
 - India co-hosted the High-level event on the 'Green Credits Programme' with UAE. The Green Credit Initiative aims to facilitate global collaboration, cooperation, and partnership through the exchange of knowledge, experiences, and best practices in planning, implementation, and monitoring of environment-positive actions through programs/mechanisms like Green Credits.
 - The Ministry of Environment, Forest and Climate Change, Government of India organized a side event under the Climate Ambition Pillar of the Quad Climate Working Group (QCWG) on "Localising Climate Action".

Shortcomings of COP 28

- **No Specific Timelines for Fossil Fuel Phase-out.**
- **Lack of Ambitious Climate Action:** Despite the various

pledges, no binding ambitious climate action was launched.

- **Issues with the Renewable Energy Pledge:** Under the pledge, a tripling of global renewable energy has been made a global target. However, there is **no clarity as to how this would be achieved as no binding individual targets were made.**
- **Concerns over Methane Emission Cuts:** Several countries, including India, are extremely opposed to any binding commitment to cut methane emissions.

Way Forward

- **Establishment of a financial mechanism** to raise \$500 billion as presented by the UNCTAD report which was submitted earlier.
- Efforts must be taken to make **the renewable energy pledges binding on all the member countries.**
- Invest in **capacity building at local, national, and international levels** to enhance the ability to implement climate actions effectively.

5.2. OECD REPORT ON CLIMATE FINANCE

Context

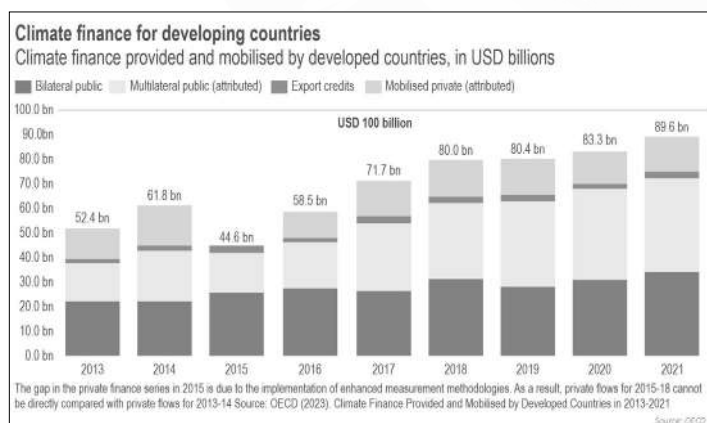
Recently the OECD report revealed developed countries' failure to meet the \$100 billion/year climate finance promise in 2021.

About the OECD report on Climate Finance

- **Releasing authority:** The report was released by the OECD Secretary-General.
- **Objective and scope:** The report aims to present aggregate trends in annual climate finance provided and mobilized by developed countries for developing nations from 2013 to 2021.

Key findings of the report

- **Total climate finance increase:** In 2021, developed countries provided and mobilized USD 89.6 billion for climate finance in developing nations, reflecting a notable 7.6% increase from the previous year.
- **Dominance of public climate finance:** Public climate finance, encompassing bilateral and multilateral sources, nearly doubled from USD 38 billion in 2013 to USD 73.1 billion in 2021.



- **Adaptation finance decline:** Adaptation finance experienced a decline of USD 4 billion (-14%) in 2021, resulting in a reduced share of adaptation finance in total climate finance from 34% to 27%.

- **Rise in cross-cutting finance:** Cross-cutting finance, addressing multiple climate-related aspects, witnessed a noteworthy increase from USD 6 billion in 2020 to USD 11.2 billion in 2021.

Significance of OECD report on climate finance

- **Insight into rich countries' approach:** The report provides valuable insight into the perspectives and strategies of wealthy nations, including the U.S., U.K., Germany, France, Switzerland, and Canada, regarding climate finance.
- **Preparation for COP28 talks:** The release of the report precedes the COP28 climate talks scheduled in the United Arab Emirates (UAE). It offers a preview of developed countries' positions on climate finance, setting the stage for discussions at the upcoming summit.
- **Evaluation of COP26 pledge:** Against the backdrop of the COP26 talks in Glasgow (2020), where developed nations pledged to double adaptation finance, the report evaluates the progress made.
- **Highlights Impact on developing countries:** the report highlights the impact of The failure to mobilize sufficient climate finance on developing countries.

Suggestions

- **Inadequacy of \$100 Billion goal:** The report highlights that this figure is inadequate because it lacks a robust foundation, emerging without a comprehensive assessment of the actual climate investment needs of developing countries and it recommends 1 trillion.
- **Transparent assessment:** Conduct a transparent and comprehensive assessment of the actual climate investment needs of developing countries. This should form the basis for setting realistic and impactful financial goals.

5.3. UN TREATY TO END PLASTIC POLLUTION

Context

To craft an international legally binding instrument by 2025 to combat plastic pollution globally the Intergovernmental Negotiating Committee (INC), operating under the United Nations Environment Programme (UNEP), recently convened in Nairobi.

Key highlights from the INC-3 meeting

- **Treaty modifications:** INC-3 focused on developing a global plastics treaty to combat pollution, following UN Environment Assembly Resolution 5/14.
 - Negotiations centered around the **'zero draft' text**, with discussions on core obligations and control measures.
- **Controversial treaty elements:** Disagreement among member states which included core obligations on chemicals, plastics, trade, primary polymer production, and financial mechanisms.
- **Production reduction & industry influence:** Controversy on reducing primary polymer reduction which led to various implications for the industries.
- **Trade restrictions:** Disagreements on trade restrictions led to influence on zero draft financial mechanism which infringes on the national sovereignty of various countries.
- **Setbacks and stalling:** Stalling in discussions led to the failure to adopt the mandate for the zero-draft. The meeting on intercessional work resulted in less consensus, causing setback before INC-4

About United Nations Environment Assembly (UNEA)

- **Formation and purpose:** The United Nations Environment Assembly (UNEA) was established in 2012 for global environmental governance. INC, led by UN member states, is tasked with negotiating a global treaty on plastic pollution.
- **UNEA meetings and resolutions:** UNEA meets every two years to set global environmental priorities.

About Plastic Pollution

- **Definition of plastic pollution:** Plastic, a **synthetic organic polymer derived from petroleum**, finds wide applications in various fields.
 - **Non-biodegradable** viz. it persists in the environment for hundreds or even thousands of years.
- **Causes of plastic pollution:** Plastic pollution results from single-use packaging, the fishing industry (nets) naval operations and aquaculture, electronics and electronic equipment, transport sectors etc.
- **Scale of plastic production and waste:** According to UN report an annual global plastic production exceeds 300 million tons. India generates 46 million tonnes of plastic waste each year, with 40% remaining uncollected.
- **Usage of plastic waste:** About 43% of India's plastic waste is utilized for packaging, mainly single-use plastic.

End Plastic Pollution: Looking forward



Impact of plastic pollution

- **Environmental degradation:** Plastic being a non-biodegradable can persist for centuries and causing environmental degradation. Marine litter and adverse effects of plastic pollution span from ecosystems to human health.
- **Harm to marine life:** Plastics break down into microplastics, posing physical and chemical harm to marine life. Sea turtles, seabirds, and marine mammals suffer, mistaking plastics for food or getting trapped.
- **Human health risks:** Microplastics' pervasiveness raises concerns about human health risks through inhalation, ingestion, and absorption. Chemicals in plastics, like methylmercury and flame retardants, are linked to health issues.

Government measures

- **'Clean and Green' Campaign:** The Ministry of Housing and Urban Affairs launched a nationwide awareness campaign to discourage single-use plastics.
- **Plastic Waste Management Rules (2022):** The Union Environment Ministry introduced rules, including the **phase-out of some single-use plastics and an increase in plastic carry bag thickness** to combat plastic pollution.
- **India Plastic Pact:** It aims to transform India's linear plastics economy into a circular one, reducing problematic plastics and creating job opportunities.
- **Targets by 2030:** The Union Environment Minister introduced the **National Dashboard, Extended Producer Responsibility Portal, a grievance redress app**, and a monitoring module for Single-Use Plastic (SUP) elimination and plastic waste management.
- **Innovative Solutions:** Khadi and Village Industries Commission (KVIC) patented plastic-mixed handmade paper as part of **Project REPLAN, reducing plastic waste**.

- **Thiagarajar College of Engineering** secured a patent for **plastone blocks and tiles made from recycled plastics**.

Way forward

- **Circular economy practices:** Promote sustainable consumption and production across the plastic value chain, encouraging the use of recycled materials.

- **Consumer education and engagement:** Launch awareness campaigns to educate consumers about the environmental impact of plastic pollution and inspire responsible choices.
- **Global collaboration and agreements:** Actively participate in global agreements and conventions related to marine pollution such as **MARPOL, Global Tourism Plastics Initiative, etc.**

5.4. MANGROVES

Context

Recently Purbasha Rural Child Education Centre's unique approach of community-led efforts to mangrove conservation has drawn attention

About Mangrove

- **Definition:** Mangroves are a salt-tolerant plant community found in tropical and sub-tropical intertidal regions globally.
- **Mangrove Around the World**
 - They thrive in areas with rainfall between 1,000 to 3,000 mm and temperatures ranging from 26- 35°C.
- **Adaptations:** to sustain life in waterlogged soils with high salinity under the influence of storms and tidal surges the mangrove plants have to develop some adaptation techniques like pneumatophores, buttress roots, stilt roots, vivipary, etc.

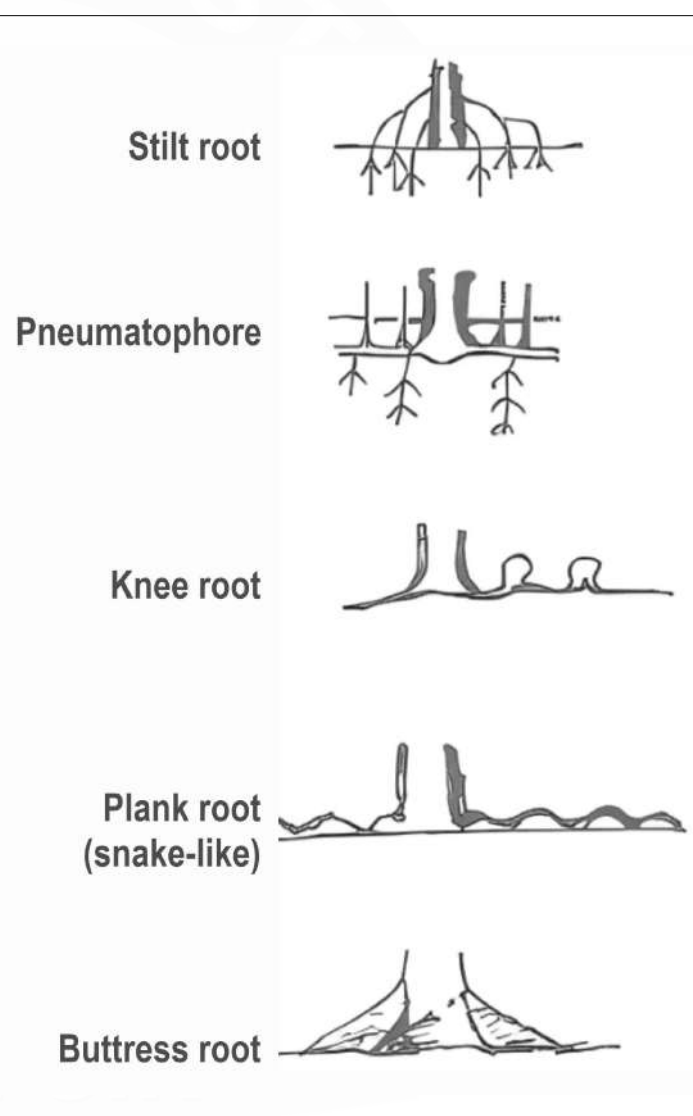
Various types of roots of Mangrove

Status of Mangrove Cover

- **Global Mangrove Status:** 50% decline in world mangrove forests in the last 50 years due to coastal developments and climate change.
- **Indian Mangrove Scenario:** Mangroves cover an area of 4,628 sq km in India, representing nearly 3% of the world's mangroves, housing 43-45 mangrove species. (Source: DTE).
- Sundarbans, covering 60% of Bangladesh and the rest in West Bengal, are the world's largest mangrove tracts.

Significance of Mangrove forests

- **Medicinal importance**
 - **Traditional Medicine:** Mangroves are used in traditional medicine for diseases like leprosy and malaria.
- **Ecological importance**
 - Mangroves act as a crucial defense during cyclones, absorbing CO₂ and preventing coastal erosion.
 - **Carbon Sequestration:** Mangroves are vital carbon sinks; aboveground and below-ground biomass calculations are essential.
- **Mangroves in Wetland Ecosystems**
 - **Sea Level Rise Impact:** Alters productivity and nutrient flows in mangrove ecosystems.
 - **Vegetative Production:** Affects organic sedimentation and litter fall rates.



- **Role of Mangroves in Wetland Ecosystems:**
 - **Structural Framework:** Mangroves as systems with distinct functions and stability.
 - **Long-Term Viability:** Achievable by considering ecological, economic, and sociocultural functions.
 - **Quantifying Role:** Requires interdisciplinary cooperation and integration of research findings.

Challenges in Mangrove Conservation

- Plastic waste accumulation threatens mangrove roots, affecting their sustainability.
- **Emerging Issues with Tiger Widows' Participation**
 - **Tiger Widows' participation:** The participation of tiger widows in mangrove afforestation events encounters recent challenges.
 - **Education as a conservation tool:** Integration of education into the conservation model faces emerging challenges, emphasizing the role of Purbasha Primary School.

Government's initiative for the conservation of Mangroves

- **MISHTI (Mangrove Initiative for Shoreline Habitats & Tangible Incomes):** Aimed at promoting mangrove conservation and providing tangible economic benefits to shoreline communities.

- **Sustainable Aquaculture In Mangrove Ecosystem (SAIME):** Focuses on sustainable aquaculture practices within mangrove ecosystems, ensuring the balance between conservation and economic activities.

Way forward

- **Collaborations and plans:** Collaborations with institutes for educational tours and upcoming events, such as mangrove planting with tiger widows, face evolving dynamics.
- **Sustainable development focus:** The emphasis on sustainable development intertwining conservation and community well-being encounters evolving challenges.
- **Inspiration for climate action:** A beacon of hope showcasing local communities' resilience and effective climate change mitigation efforts amidst evolving circumstances.

5.5. FOREST CONSERVATION (AMENDMENT) ACT, 2023

Context

Recently passed the Forest Conservation Amendment Act of 2023 has garnered attention due to its far-reaching implications on forest governance, indigenous rights, and environmental sustainability.

- The purpose of the Forest Conservation (Amendment) Act, of 2023 is to clarify and enhance the Forest Conservation Act, of 1980, which requires prior approval of the central government for using forest land for non-forest purposes.
- The amendment also aims to align with India's commitments to mitigate climate change, expand forest cover, and facilitate development projects, especially near the borders.

Surveys and investigations in forest areas are not considered non-forestry activities.

- **Assignment/Leasing:** Requires prior central government approval for state governments to assign forest land to any entity.
- **Permitted activities:** Restricts de-reservation of forests and non-forest use, with central government approval for lifting such restrictions.
 - Specifies excluded activities for non-forest purposes, including conservation, management, and development of forest and wildlife.
- **New additions to excluded activities:** zoos, safaris, ecotourism facilities, silvicultural operations, and other purposes specified by the central government.
 - Central government may set terms & conditions to exclude some surveys from non-forest purposes.

Key Provisions of the Forest (Conservation) Amendment Act, 2023

- **Applicability clarity:** The following land shall be covered under the provisions of this Act, namely:— (a) the land that has been declared or notified as a forest by the provisions of the Indian Forest Act, 1927 or under any other law for the time being in force; (b) the land that has been recorded in Government record as forest, as on or after the 25th October 1980.
- "Government record" means record held by the Revenue Department or Forest Department or any authority.
- **Exemptions for afforestation: Proposed exemptions to boost afforestation and plantation outside forests.**
 - It excludes forests converted for non-forest use after December 12, 1996 and land within 100 kilometres of the China and Pakistan border for central government projects.
 - Includes exemptions for strategic projects, security infrastructure, connectivity, and public utility projects.
 - Exempts forest land along rail lines, up to 0.10 hectares.
- **New forestry activities:** Addition of activities like frontline forest staff infrastructure, ecotourism, zoo, and safari.

Key issues in Forest Conservation (Amendment) Act, 2023

- It may lead to loss of forest cover and biodiversity, especially in the northeastern states, where most of the forests are unclassified or community-owned.
- It may violate the Supreme Court's order of 1996, which defined forest land based on its ecological and biological characteristics, not on legal or historical records.
- It may undermine the Forest Rights Act, of 2006, which recognizes the rights of indigenous and other forest-dwelling communities over forest resources and land.
- It may create conflicts between the central and state governments, as well as between the forest department and

the local communities, over the control and management of forest land.

- It may reduce the scope of public consultation and environmental impact assessment for forest land diversion, especially for strategic and border projects.

Way forward

- **Impact assessment:** Conduct a comprehensive impact assessment to understand the potential consequences

on biodiversity, forest cover, and the livelihoods of local communities.

- **Refinement of exemptions:** Review and refine the exemptions provided, particularly in border areas, considering the ecological significance of the regions involved.
- **Balancing economic and environmental goals:** Establish a balance between economic development goals and environmental conservation, ensuring that exemptions do not compromise long-term sustainability.

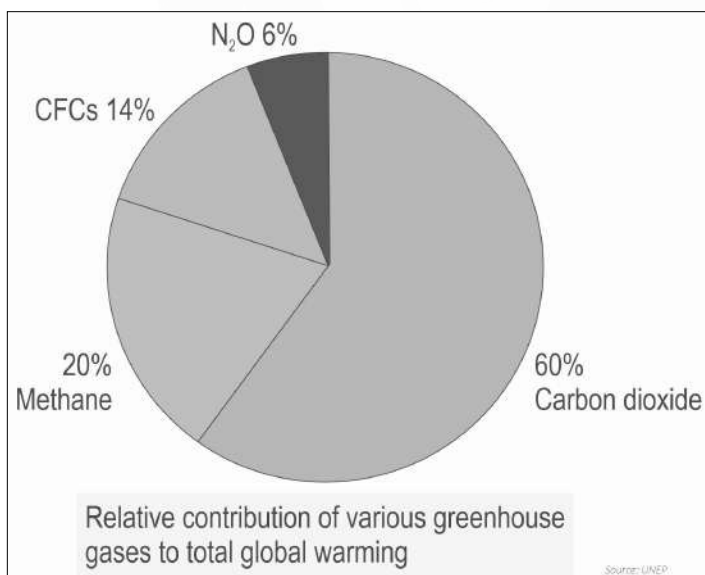
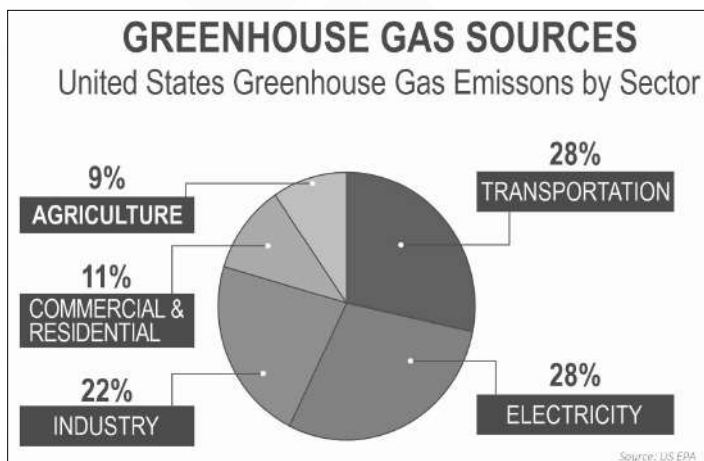
5.6. EMISSION GAP REPORT (2023)

Context

Recently, the UN Environment Programme (UNEP) released Emission Gap Report 2023

About Emission Gap Report (2023) by UNEP

- This is the 14th Emission Gap Report which tracks our progress in limiting global warming well below 2°C and pursuing 1.5°C in line with the Paris Agreement.
- **Emissions gap is the difference between**
 - The emissions gap is the difference between the actual global greenhouse gas (GHG) emissions and the emissions that are needed to limit global warming to a certain level, such as 1.5°C or 2°C above pre-industrial levels.
 - The emissions gap shows how much more action is required to achieve the goals of the Paris Agreement, which aims to keep the global temperature rise well below 2°C and pursue efforts to limit it to 1.5°C.

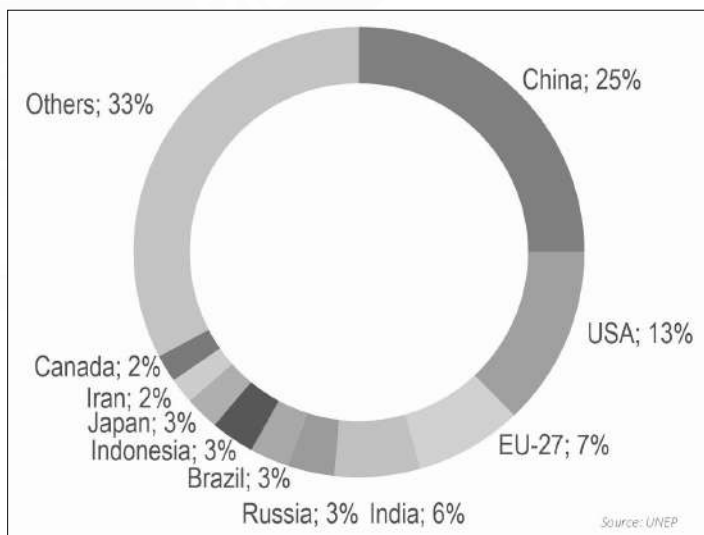


globally the 10% of the population with the highest income account for around 48% of emissions.

- Global warming is to be limited to 3 degrees Celsius if the current policies continue.

India related findings

- GHG emissions across the G20 group increased by 1.2% in 2022, with an increase in India, China, the USA, and



Key highlights

- 86 days have been recorded with temperatures exceeding 1.5°C above pre-industrial levels this year.
- Global GHG emissions increased by 1.2 % from 2021 to 2022 with fossil fuel combustion and industrial processes being main contributors.
- **Unequal distribution of current & past emissions:** Currently,

ENVIRONMENT

- Indonesia but decreases in the EU, Brazil, and Russia.
- India has only contributed 5% of global warming.
- India has an 8% implementation gap between NDC pledges and current policies.

United Nations Environment Programme (UNEP)

- Genesis:** Founded in 1972 under a UN General Assembly resolution shortly after the Stockholm Conference on Human Environment.
- Objective:** To help humanity foster climate stability, live in harmony with nature, and forge a pollution-free future, in

line with the 2030 Agenda for Sustainable Development.

- Composition:** The UN Environment Assembly is the governing body with universal membership encompassing all 193 UN Member States.
- It is **part of the UN Secretariat and responds to the UN General Assembly.**
- India is a member.
- Other reports released by UNEP:**
 - Adaptation Gap report,
 - Global Environment Outlook, etc.

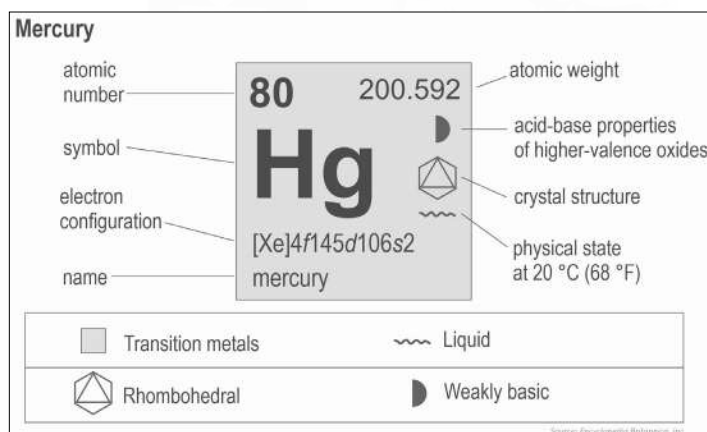
5.7. MINAMATA CONVENTION

Context

Recently, the fifth meeting of the Conference of Parties (COP 5) to the Minamata Convention was held in Geneva.

About Minamata Convention

- The Minamata Convention on mercury, adopted in 2013, is the **first global legally binding treaty** to protect human health and the environment from the adverse effects of mercury.
- It came into force in 2017 and India ratified it in 2018.
- Mercury may have toxic effects on the nervous system, thyroid, kidneys, lungs, immune system, eyes, skin etc.



sources and trade by strengthening capacities at the national level and developing studies on global supply, trade, production and use of mercury compounds.

- Implementation of projects and programmes undertaken under the Convention with the participation of indigenous peoples and local communities.
- A limit of 15 mg/kg concentration of mercury is set as the threshold for wastes contaminated with mercury or mercury compounds.**
- Amend Annex A of the Convention to list phaseout dates for certain types of batteries, switches and relays, fluorescent lamps, and cosmetics.
- Amend Annex B of the Convention to mandate the phaseout of mercury in polyurethane production by 2025.

Various annexes of the convention:

- Annex A:** It contains Mercury-added products. E.g., Batteries, compact fluorescent lamps, pesticides, biocides etc.
- Annex B:** It contains Manufacturing processes in which mercury or mercury compounds are used. E.g., Production of polyurethane using mercury catalysts.
- Annex C:** It contains Artisanal and small-scale gold mining.
- Annex D:** It contains a List of point sources of emissions of mercury and mercury compounds to the atmosphere.
- Annex E:** It contains arbitration and conciliation procedures.

Key decisions adopted at COP 5

- For the first time, COP pushed to reduce mercury supply

5.8. CLIMATE CHANGE PERFORMANCE INDEX (CCPI)

Context

Recently, India has ascended to the 7th position in this year's CCPI ranking.

About Climate Change Performance Index (CCPI)

- It is published by German-Watch, the New Climate Institute, and the Climate Action Network annually.
- It uses a standardized framework to compare the climate performance of 63 countries and the EU, which hold together for over 90% of global GHG emissions.

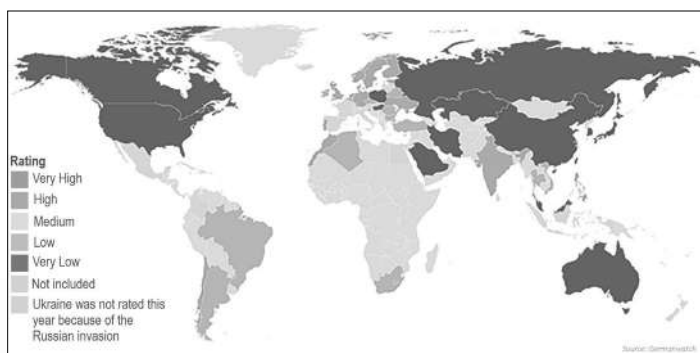
- It was first published in 2005.

About CCPI 2023

- It is assessed in four areas: **GHG emissions; Renewable energy; Energy use, and Climate policy.**

Key highlights of the report

- Denmark retains the top spot with a 75.5 percent score. At the same time, Estonia and the Philippines occupied the 2nd and 3rd ranks with 72 and 70 percent respectively.
- Saudi Arabia was at the bottom i.e., 67th rank, where the United Arab Emirates occupied the 65th rank.
- India gains a high ranking in the GHG emissions and Energy Use categories, but a medium in Climate policy and Renewable energy from the previous year.
- India is focussing on meeting its NDC targets, with clear long-term policies in place that promote renewable energy and provide financial support for domestic manufacturing.



- India has relatively high taxes on petrol and diesel, which are deemed to act as carbon taxes.

5.9. INDIAN FOREST AND WOOD CERTIFICATION SCHEME (IFWCS)

Context

Recently, the Union government launched the Indian Forest and Wood Certification Scheme (IFWCS) in response to global concerns about deforestation and illicit timber trade.

Indian Forest and Wood Certification Scheme (IFWCS)

- **Objective**
 - IFWCS aims to provide a credible alternative to private foreign certification agencies, ensuring transparency, credibility, and integrity in certifying sustainable forest management products.
- **Certification Scope**
 - The scheme covers three key areas viz. **sustainable forest management, sustainable management of trees outside forests** (e.g., plantations), and **chain of custody for traceability in the supply chain**.
- **Market Incentives**
 - IFWCS aims to provide **market incentives** to entities practicing responsible forest management and agroforestry.
 - This includes **state forest departments, individual farmers, Farmer Producer Organizations, and wood-based industries**.
- **Forest Management Certification Standards**
 - Based on the Indian Forest Management Standard, comprising **8 criteria, 69 indicators, and 254 verifiers**. Integrated into the **National Working Plan Code 2023**.
- **Oversight and Advisory Body**
 - The **Indian Forest and Wood Certification Council** will oversee the scheme, acting as a multistakeholder advisory body.
- **Scheme Operating Agency**
 - The **Indian Institute of Forest Management (Bhopal)** serves as the nodal agency and is responsible for the overall management of IFWCS.
- **Accreditation of Certification Bodies**
 - The **National Accreditation Board for Certification Bodies** (under Quality Council of India) will accredit certification bodies.
- **Global Context**
 - Syn with global efforts to combat deforestation, focus the commitment made by over 100 countries at the Glasgow Climate Change Conference (2021) and to halt deforestation by 2030.

5.10. SEAGULLS

Recently Seagulls have been seen flying over the Yamuna on a smoggy winter's day in New Delhi.

About Seagulls

- Seagulls are seabirds, typically medium to large in size, usually grey or white, often with black markings on the head or wings.
- Seagulls nest in large, densely packed, noisy colonies.
- The Seagulls have a worldwide cosmopolitan distribution. They breed on every continent, including the margins of Antarctica, and are found in the high Arctic as well.
- There is no marked dimorphism among male and female seagulls.
- Seagulls are resourceful, inquisitive, and intelligent, the larger species in particular, demonstrating complex methods of communication and a highly developed social structure.
- Commonly feeds in fields, where its chief food is insects.
- Seagulls are migratory birds that can be spotted in the Krishna Wildlife Sanctuary of Andhra Pradesh. The mangrove wetland also known as Krishna mangroves is famous for Seagulls in India.
- Seagulls can drink both fresh and salt water.

5.11. GREEN TURTLE

- Recently Rising global temperatures could expand the nesting range of green turtles in the Mediterranean Sea, with a potential increase of over 60% points.
- A study in Scientific Reports suggests that, under the worst-case climate scenario, nesting areas may extend westward, covering much of the North African, Italian, and Greek coastlines.
- **Size and herbivorous diet:** Green turtles are one of the largest sea turtles and are unique as herbivores among various species.
- **nomenclature:** Named for the greenish hue of their cartilage and fat, not their shells. In the Eastern Pacific, those with darker shells are locally referred to as black turtles.
- **Habitat:** Primarily inhabit tropical and subtropical waters.
- **Migration patterns:** Like other sea turtles, green turtles migrate extensively, travelling long distances between feeding grounds and their hatching beaches.
- **Conservation status (IUCN Status):** Classified as **Endangered** due to various threats.
- **Threats**
 - **Overharvesting of Eggs:** Eggs are targeted and collected excessively.
 - **Adult Hunting:** Adults are hunted.
 - **Fishing Gear Incidents:** Often caught unintentionally in fishing gear.
 - **Loss of Nesting Sit:** Threatened by the diminishing availability of nesting beach sites.

5.12. CHINSTRAP PENGUINS

- Recently a study on sleeping patterns of chinstrap penguins in their natural habitat based on was Published.
- **Appearance:** Medium-sized with a black head, and white face. Distinguished by a black stripe under the chin.
- **Reproduction**
 - **Incubation:** 33-35 days.
 - After hatching, parents brood chicks for an additional 20–30 days.
- **Life Span:** 15-20 years.
- **Range and Habitat:** Circumpolar in subantarctic and Antarctic waters. Avoids pack ice and continental coasts, and stays near breeding islands.
- **IUCN:** Least Concern
- **Features**
 - Nesting penguins protecting eggs take over 10,000 micro naps daily.
 - Short naps average four seconds each, accumulating to more than 11 hours of sleep daily.
 - Similar to some other birds, penguins exhibit half-brain sleep.
 - Allows for certain brain functions to stay active while resting.

5.13. DOUBLE HUMPED CAMELS

- The Army recently deployed double-humped camels for logistical support to the troops in eastern Ladakh.
- The Double Humped Camels have two humps on their backs where they store fat.
- **Lifespan:** 50 years
- **Diet:** They are omnivores but are primarily herbivores (graze on grasses).
- **Conservation Status:** IUCN Red List: **Critically Endangered**.
- Their fur color varies from beige to dark brown.

Features

- They are slenderer and smaller than one-humped camels found in Africa and the Middle East.
- They typically live in herds of around 6-20 members, although they can occasionally be solitary/ in groups of up to 30 individuals.
- They have thick, woolly coats that provide warmth during cold months and insulation from the desert heat, and they shed during summer months.

Distribution

- They occupy habitats in Central Asia from Afghanistan to China, primarily in Mongolian steppes and the Gobi Desert.
- A small population of Bactrian camels exists in Nubra Valley (Ladakh).
- They are native to arid and harsh regions to Central Asia.

5.14. AXOLOTL (WATER MONSTER)

- Recently, ecologists from Mexico's National Autonomous University have relaunched a fundraising campaign to bolster conservation efforts for **Axolotls, a fish-like type of salamander**.

- The campaign, called **“Adoptaxolotl,”**
- It is a species of salamander (lizard-like amphibians) originally found in **Lake Xochimilco**, near Mexico City.
- **It is also known as a Mexican salamander or walking fish**
 - However, this ‘walking fish’ is not a fish but **an amphibian**.
 - Axolotls can be found in a variety of colours, including black, grey, golden, albino, white with black eyes, and many more.
 - Known locally as **“Water Monsters”**, axolotls have a love-them-or-leave-them appearance.

- Axolotls, like humans, contain **two copies of every gene** – **one inherited from the father and the other from the mother**.
- **Habitat:** It is found in **Xochimilco**, but other species can be found across the country, from tiny streams in the **valley of Mexico to the northern Sonora desert**.
- Scientists think this healing power could hold the secret to tissue repair and even cancer recovery.
- Conservation IUCN status: Critically Endangered.

5.15. HONEYGUIDE BIRDS

- Recently, a study published showing that **honeyguide birds** understand and respond to the culturally distinct bird calls made by human hunters in **different parts of Africa**.
- They are the **largest bird of the Indicatoridae family** and are usually around **20 centimetres in body length**.
- Adult males have distinctive **pink bills, black throats, and golden feathers**.
- Females are **uniformly greyish brown**. Juveniles have a unique **yellow-gold, taupe, and olive-brown plumage**.
- They are widely distributed in **sub-Saharan Africa, excluding Namibia, Botswana, and part of South Africa**.
- They prefer large open areas like **savannas, shrublands, and forest edges**.
- Breeding occurs **between September and October**. Females lay eggs in **other species’ nests, parasitizing them**.
- **Behaviour:** **Diurnal and solitary**, they have a unique behaviour of guiding other species, including **humans and**

honey badgers, to insect hives by calling and flaring their tail feathers.

- **Communication and Perception:** **Males use vocal calls for mating, while females mimic male calls**.
 - They communicate **visually and acoustically**. They guide honey-gathering mammals to hives through distinct calls.
- **Food Habits:** They have a **wax-based diet**, requiring **enzymes** for digestion. They feed on **grubs, larvae, and occasionally fruit**.
- **Lifespan/Longevity:** Can live **up to 12 years**.
- **Ecosystem Roles:** They have a **mutualistic relationship** with honey badgers, guiding them to hives.
- **Conservation Status:** **Least Concern** on the IUCN Red List.
- **Economic Importance:** Positive economic importance in folklore, but a negative impact on farmed beehives due to their diet and potential spread of blight.

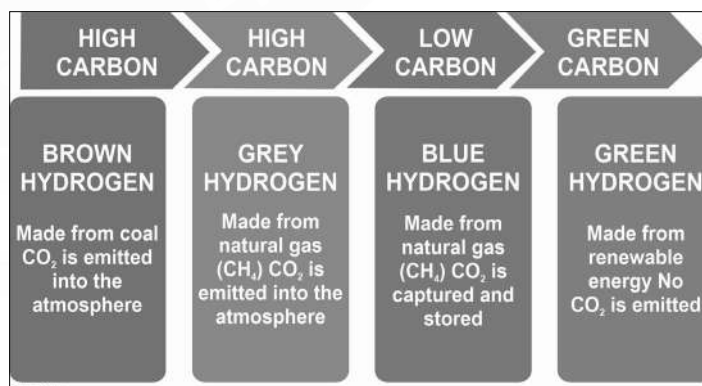
5.16. WHITE HYDROGEN

Context

Recently, scientists have been looking for fossil fuels beneath the ground of Northeast France and have discovered reservoirs of White Hydrogen.

About White Hydrogen

- White hydrogen, also known as natural hydrogen, is hydrogen gas that is naturally generated within the Earth’s crust through water-rock reactions.
- This process involves interactions between water molecules and iron-rich minerals, such as olivine, at high temperatures and pressures.
- White hydrogen is considered a clean and renewable energy source, as it does not produce carbon dioxide or other harmful emissions when used as a fuel.
- White hydrogen has various potential applications, such as powering vehicles, industries, and residential use.
- However, its commercial scalability and availability are still under question, as white hydrogen is difficult to locate and extract from underground reservoirs.
- White hydrogen has **several advantages, including zero CO₂**



emissions which used as fuel, compatibility with existing hydrogen infrastructure and technologies, cost-efficiency compared to steam reforming/ electrolysis, abundance in nature, and deposits across the world.

6. GEOGRAPHY AND DISASTER MANAGEMENT

6.1. CYCLONE MICHAUNG

Context

Recently in the southwestern part of the Bay of Bengal, cyclone 'Michong' struck Andhra Pradesh, Tamil Nadu, and Kerala.

About

- The name **Michaung** was suggested by **Myanmar**. It means 'strength' or 'resilience'.
- Cyclone 'Michaung' intensified due to the **MJO wave**.

Madden-Julian Oscillation (MJO) wave

- It is eastward propagation of coupled patterns of tropical convection and atmospheric circulation.
- It is the dominant mode of tropical intra-seasonal variability, with a period of about 30 to 60 days.
- The MJO is associated with a range of weather phenomena, including tropical cyclones, heavy rainfall, and droughts.

About Cyclone

- Cyclones may be defined as any large system of winds that circulates a **center of low atmospheric pressure** in a **counter-clockwise direction north of the Equator** and in a **clockwise direction to the south**.

Conditions for Tropical cyclone formation:

- SST higher than 27 degree C;
- Presence of Coriolis Force;
- Small variations in vertical wind;
- Presence of low pressure;
- Upper-level Divergence

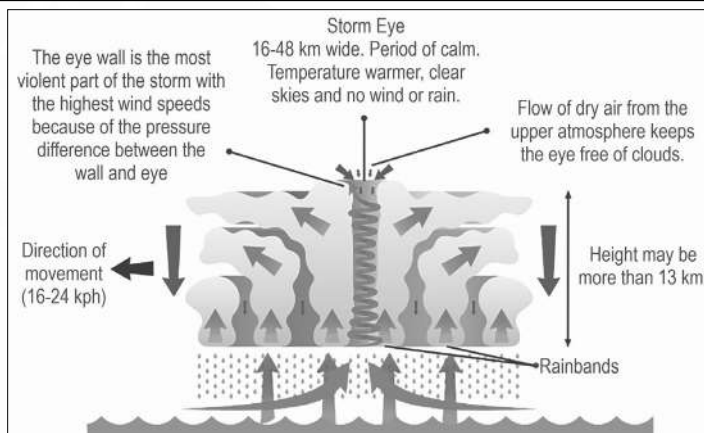
Impact of cyclones

- **Widespread flooding:** Heavy rains cause flooding, both inland and along the coast, damaging homes, businesses, and infrastructure.
- **High winds:** Strong winds can also damage homes, businesses, and infrastructure and uproot trees, power lines, and other objects.

Types of cyclones

- **Tropical cyclones:** They are the most common type, forming over warm tropical waters.
- **Extratropical cyclones:** Forming in the mid-latitudes, they are typically larger and less intense than tropical cyclones.
- **Subtropical cyclones:** They are a hybrid of tropical and extratropical cyclones, forming in the subtropics, between the tropics and the mid-latitudes.

- **Storm surges:** The rise in sea level that occurs when a cyclone makes landfall, inundating coastal areas to cause



widespread damage.

- **Loss of life:** They cause loss of life due to drowning, injuries from flying debris, and other causes.
- The most devastating cyclone in Indian history was the **1970 Bhola cyclone**, which killed around **500,000 people** in Bangladesh and India.

Government measures to mitigate the impact of cyclones

- **NDMA Guidelines for the Management of Tropical Cyclones:**
 - They were developed by the **National Disaster Management Authority (NDMA)** in collaboration with other relevant agencies.
 - They provide a framework for effective cyclone management at the **national, state, and district levels**.
 - **Key aspects** of the NDMA guidelines include:
 - Early warning systems
 - Preparedness
 - Response
 - Recovery
- **National Cyclone Risk Mitigation Project (NCRMP):** A **World Bank-funded** project aiming to reduce the vulnerability of coastal communities by constructing cyclone shelters, providing early warning systems, and improving building codes.
- **Cyclone Warning Centers (CWCs):** CWCs in India are responsible for issuing cyclone **warnings and advisories** for specific coastal areas. They are located in Chennai, Mumbai, Kolkata, Thiruvananthapuram, Visakhapatnam,

Ahmedabad, and Bhubaneswar.

- **National Disaster Response Force (NDRF):** A Specialized Force of the Central Government trained and equipped to respond to disasters, including cyclones.
- **State Disaster Response Forces (SDRFs):** Specialized Forces of the State Governments trained and equipped to respond

to disasters, including cyclones.

- **Community-based disaster management (CBDM):** An approach that emphasizes the involvement of communities in disaster management, including community-based early warning systems, preparedness plans, disaster response teams, etc.

6.2. RAT-HOLE MINING

Context

Recently, 41 men were rescued from a partially collapsed tunnel at Silkyara-Barkot in Uttarakhand by a team of rat-hole miners.

Rat-hole Mining

- It is a process of **extracting coal** from horizontal, narrow, and **prevalent in Meghalaya**.
- It refers to the **narrow pits dug into the ground**, which are typically just large enough for one person and extract coal.
- Once the pits are dug, miners descend using ropes or bamboo ladders to reach the coal seams.
- The coal is then **manually extracted using primitive tools** such as pickaxes, shovels, and baskets.

working conditions, numerous accidents, and environmental damage leading to fatalities and injuries.

Why is it banned in India?

- The **National Green Tribunal (NGT)** banned the practice in 2015.
- The NGT observed, "It is also informed that there **is umpteen number of cases** where by rathole mining, during the rainy season, **water flooded into the mining areas** resulting in the death of many individuals including employees/workers."
- The order was **connected with Meghalaya**, which remained a prevalent procedure for coal mining.



Environmental concerns

- These mines typically lack safety measures and unregulated, or inappropriate safety gear for the workers.
- It can cause land degradation, water pollution, and deforestation.
- They have faced severe criticism due to their hazardous

6.3. INDIAN MONSOON

Context

According to a recent Advancing Earth and Space Sciences study, the Indian Monsoon has undergone significant alterations due to Global Warming.

Monsoon Effected by Global Warming

- Researchers found that every aspect of the Indian monsoon's well-known features such as the onset, the withdrawal, the active and break periods, and low-pressure systems (or monsoon depressions) has been affected by global warming.
- The monsoon onset has **been delayed of late as** well as being affected by cyclones.
- Its withdrawal has been affected by Arctic warming.
- **The total seasonal rainfall has also trended downwards for more than seven decades, due to the differential heating of the land versus the ocean due to global warming.**
 - However, this trend has been **distributed unevenly** through the monsoon season – as manifested in the longer duration but lower intensity of dry spells and the greater intensity of wet spells.

Wet spells

- Some researchers have argued that the intense wet spells

Indian Monsoon

- Indian monsoon is a seasonal change in the direction of the prevailing, or strongest, winds of a region.
- India gets southwest monsoon winds in the summers (formation of an intense low-pressure system over the Tibetan Plateau) and northeast monsoons during the winters (due to the high-pressure cells that are formed over the Siberian and Tibetan plateaus).

have become larger in scale, over Central India in particular.

- The influence of the Arabian Sea and the Bay of Bengal combine to produce dynamic conditions for generating large-scale extreme rainfall events.

Monsoon dependency

- India's monsoon forecasts rely heavily on **its relation to the El Niño and the La Niña** phenomena, although this relation holds only about 60% of the time.

Stationary element exists

- Despite the dynamism in various aspects of the monsoon, an element of stability can also be seen in its pattern, such as extremely heavy rainfall events are seen only in a certain area, especially around a corridor extending from Bengal to Gujarat. The new finding is that this corridor has remained unchanged from 1901 to 2019.

Monsoon stability

- Traditional statistical methods tend to **miss the complex relations between multiple nodes of rainfall centers**.
- The study revealed that the most active nodes have followed this 'highway' for more than a century.
- The **link lengths between nodes**, or the scales of

synchronicity, have remained nearly constant, at an **average value of about 200 km**.

Significance of the study

- **According to the researchers, stationary elements no longer exist in climate systems because of global warming.**
- The Indian monsoon continues to produce surprises in the way it can synchronize heavy rain events as well as stick to the 'highway' for such a long time.
- Trapping the extreme events to a relatively narrow corridor is good news for potential improvements in process understanding, and that is bound to lead to better predictions of these synchronized extreme rainfall events.

6.4. INDIA'S FIRST WINTER OF ARCTIC RESEARCH

Context

As per a recent update, Himadri, India's Arctic Research Station will now remain operational throughout the year at Svalbard (Norway) in the Arctic Ocean.

About

- India sent off its first winter expedition, **comprising four scientists from four different institutions (Indian Institute of Tropical Meteorology, Pune, IIT-Mandi, Raman Research Institute, Bengaluru, and National Centre for Polar and Ocean Research, Goa)** to Himadri.
- The Svalbard group of islands is the **closest human habitation to the North Pole**.
- At least 10 countries have set up permanent facilities at the **International Arctic Research base in Svalbard**, a small town above the North Pole.

India's Presence in the Arctic

- India signed the **Svalbard Treaty in Paris in 1920**.
- India is one of the **very few countries** to set up a permanent station in the Arctic for scientific research
- But it took until 2007 for the first Indian expedition comprising five scientists to visit the **International Arctic Research Facilities at Ny-Ålesund** to initiate **studies in Arctic microbiology, atmospheric sciences, and geology**.
- India's permanent research station, Himadri, began

operations in July 2008 which is currently manned for about 180 days every year, has so far hosted more than 400 Indian researchers who have made a total of about 200 visits to Svalbard.

- The research areas will include atmospheric sciences, astronomy, astrophysics, and climate studies.
- **Scientists will study** lightning over the Arctic in winter, the role of precipitation in climate change, characterization of radio frequency environment, and the role of aerosols on climate change.
- Himadri has been equipped for observations **during polar nights (that last longer than 24 hours)**, and supplied with **special winter gear, transport, and logistics support from Norwegian agencies**.

Presence of Antarctica

- **Dakshin Gangotri in Antarctica was set up much earlier in 1983, two years after India's first expedition there.**
- Dakshin Gangotri is now submerged under ice, but India's two other stations, Maitri and Bharti, are in use.

6.5. ARCTIC AMPLIFICATION

Context

According to a Recent National Oceanic and Atmospheric Administration (NOAA) report, 2023 is the sixth-warmest year in Arctic history.

A key finding of the report

- 2023 marked the warmest summer in the Arctic, with **temperatures rising nearly four times faster than the**

global average since 1979.

- This **warming trend is a result of climate change**, emphasizing the urgency of addressing environmental concerns.

- The past year ranked as **the sixth-warmest in Arctic history**, based on **reliable records dating back to 1900**.
- The report was a collaborative effort involving **82 scientists from 13 countries**, emphasizing the **global significance of Arctic climate monitoring**.
- **Increased temperatures** in the northern polar region contributed to a series of severe consequences, including **unprecedented wildfires, community evacuations, decline in sea ice, devastating floods, food insecurity, and rising sea levels**.

Arctic amplification

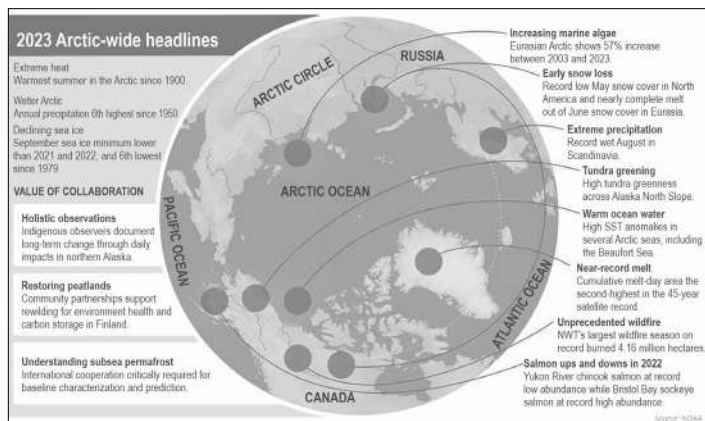
- Arctic Amplification is the phenomenon of faster warming in the Arctic region compared to the rest of the world. It is caused by various feedback mechanisms that amplify the effects of greenhouse gases, such as the melting of sea ice, the decrease of albedo, and the increase of water vapor.
- Consequences of Soaring Temperatures
- **Thawing Subsea Permafrost:**
 - Frozen soil beneath the **Arctic seabed, permafrost, holds vast amounts of organic matter**.
 - This not only worsens global warming but also **fuels ocean acidification, harming marine life**.

National Oceanic and Atmospheric Administration (NOAA)

- It is to provide daily weather forecasts, severe storm warnings, climate monitoring to fisheries management, coastal restoration, and the supporting of marine commerce.
- Arctic report card (ARC):
 - Issued annually since 2006, It is a timely and peer-reviewed source for clear, reliable and concise environmental information on the current state of different components of the Arctic environmental system relative to historical records.
 - ARC2023 is organized into three sections: Vital Signs, Other Indicators, and Frostbites.

- **Food Insecurity**
 - Rising temperatures disrupt **freshwater ecosystems and marine life, impacting food security for Arctic communities**.

- Salmon populations in Alaska have plummeted, with Chinook and chum salmon down by **81% and 92% below average**.
- This has led to **fishery closures and cultural and food insecurity** for Indigenous communities.



- **Raging Wildfires**
 - Canada witnessed its worst **wildfire season ever in 2023, with fires burning over 10 million acres in the Northwest Territories**.
 - **High temperatures, dry vegetation, and low rainfall** created perfect conditions for infernos, forcing evacuations for two-thirds of the territory's population.
- **Severe Flooding:**
 - The **Mendenhall Glacier in Alaska** is rapidly **melting, causing annual floods** in the region.
 - In August 2023, a glacial lake burst through its ice dam, leading to unprecedented flooding and property damage in Juneau.
 - This highlights the dangers of **glacial meltwater and the increasing risk of floods across the Arctic**.
- **Greenland Ice Sheet Melting:**
 - Greenland's ice sheet, the **second-largest contributor** to global sea-level rise, continues to melt at an alarming rate.
 - This melting contributes to rising sea levels, **threatening coastal communities worldwide**.

6.6. DYNAMIC GROUND WATER RESOURCES REPORT, 2023

Context

Recently, the Ministry of Jal Shakti released the Dynamic Ground Water Resource Assessment Report, in 2023.

Key Points:

- The total **Annual Groundwater Recharge** for the entire country is **449.08 billion cubic meters (BCM)**, an increase of **11.48 BCM compared to the previous year (2022)**.
- The **annual groundwater extraction** for the entire country is **241.34 BCM**.
- The stage of groundwater extraction stands at **59.23%**.
- Out of the **total 6553 assessment** units in the country, 4793 units are categorized as **'Safe'**.
- The **increase in groundwater recharge is attributed to factors such as**
 - Increased canal seepage,

- Return flow of irrigation water,
- Recharges from water bodies/tanks and water conservation structures.

Central Ground Water Board (CGWB)

- It is a statutory organization under the Ministry of Jal Shakti.
- It is responsible for the development and management of groundwater resources in the country.
- Established in 1972 with the enactment of the Water (Prevention and Control of Pollution) Act, 1974.
- The CGWB's authority is derived from the following:
 - The Water (Prevention and Control of Pollution) Act, 1974.
 - The Environment (Protection) Act, 1986.

- Improvement in groundwater conditions has been observed in **226 assessment units compared to 2022 data**.
- **An overall decrease** in the number of over-exploited units and a **decrease in the stage of groundwater extraction level** has also been observed.

Groundwater Recharge

- It is a crucial process that **replenishes aquifers**, the underground layers of rock that store freshwater.
- It occurs when water from various sources, **such as precipitation, surface water infiltration, and artificial recharge techniques**, percolates down through the soil and unsaturated zone to reach the aquifer.

Sources of Groundwater Recharge

- **Precipitation:** Rainfall, snowfall, and other forms of precipitation are the primary sources.
- **Surface Water Infiltration:** Surface water bodies like lakes, rivers, and streams can also contribute.
- **Artificial Recharge Techniques:** In some areas where natural recharge is insufficient, artificial recharge techniques are employed to augment groundwater supplies. These techniques include:
 - **Ponding:** Water is stored in ponds or basins, allowing it to infiltrate the ground over time.
 - **Injection Wells:** Water is injected directly into aquifers through wells, bypassing the natural infiltration process.
 - **Recharge Basins:** Excavated basins are filled with water, promoting infiltration.

Importance of Groundwater Recharge

- **Sustainable Water Resource Management:** By replenishing aquifers, long-term water scarcity can be prevented.
- **Water Quality Protection:** It can help improve water quality by diluting contaminants and reducing the concentration of pollutants in aquifers.

- **Ecosystem Support:** Groundwater provides essential water for plant growth and supports various ecosystems, including wetlands, forests, and riparian areas.
- **Economic Benefits:** Groundwater is a vital source of water for agriculture, industry, and domestic use.

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Major causes of Groundwater Depletion in India

- **Expansion of irrigated area:** The Green Revolution has led to a rapid increase in the demand for groundwater.
- **High-yielding variety (HYV) crops:** HYV crops require more water than traditional crops.
- **Subsidies on electricity and diesel:** Makes it cheaper to pump groundwater, which can lead to overexploitation.
- **Groundwater pollution:** Pollution from agricultural runoff, industrial effluents, and sewage can contaminate groundwater and make it unusable.
- **Natural factors causing groundwater depletion in India: Climatic variability (uneven rainfall and droughts) and deforestation.** For example,
 - **The Marathwada region of Maharashtra** is prone to droughts, which can lead to a decline in groundwater levels.

Government Initiatives

- **Groundwater Regulation Guidelines:** Regulates extraction through 'No Objection Certificates' (NOCs).
- **Jal Shakti Abhiyan (JSA):** Harvests monsoon rainfall, creates recharge structures, and promotes watershed management.
- **Amrit Sarovar Mission:** Develop and rejuvenate 75 water bodies in each district.
- **Atal Bhujal Yojana:** Improves groundwater management in select water-stressed areas.

Various state initiatives

- Mukhyamantri Jal Swavlamban Abhiyan: Rajasthan.
- Jalyukt Shivar: Maharashtra.
- Sujalam Sufalam Abhiyan: Gujarat.
- Mission Kakatiya: Telangana.
- Neeru Chettu : Andhra Pradesh.
- Kudimaramath Scheme: Tamil Nadu.

6.7. INDONESIA'S MOUNT MERAPI ERUPTS

Context

Recently, Mount Merapi on the island of Java erupted, spewing an ash tower 3,000 meters into the sky.

About

- Indonesia has nearly 130 active volcanoes.

When the pressure becomes too great, the magma erupts through the crust, forming a volcano.

Volcanoes

- It is an **opening or rupture in the Earth's crust** from which hot molten rock, ash, and gas escape.
- Volcanoes are formed** when magma, the molten rock beneath the Earth's surface, rises towards the surface.

Raining Ash

- It is a common occurrence during volcanic eruptions.
- Ash can be carried by the wind for long distances and can fall to the ground as rain.
- It can be a nuisance because it can make it difficult to see and breathe. It can also damage crops and livestock.



Volcanoes

- There are over 70 extinct volcanoes in India, most of which are found in the western part of the country.
- There are also a few active volcanoes in India, including Barren Island in the Andaman Sea while Narcondam in the Nicobar Islands is now Dormant.

Types of Volcanoes : On The Basis of Activity

- Active volcanoes** are those that have erupted recently and pose a significant threat of future eruptions. Examples of active volcanoes are Mount Etna, Mount Vesuvius, Mount St. Helens and Mount Merapi.
- Dormant volcanoes** are those that have not erupted in a long time but still have the potential to erupt in the future. Examples of dormant volcanoes are Mount Fuji, Mount Kilimanjaro, and Mount Rainier.
- Extinct volcanoes** are those that have not erupted for thousands of years and have no possibility of erupting again. Examples of extinct volcanoes are Mount Kenya, Mount Slemish, and Edinburgh Castle Rock.

- Cinder cones:** Examples are:

- Parícutin volcano in Mexico
- Sunset Crater volcano in Arizona, USA
- Vulcan de San Salvador in El Salvador

- Shield volcanoes:** Examples are:

- Mauna Loa in Hawaii, USA

- Mauna Kea in Hawaii, USA

- Tamu Massif volcano in the Pacific Ocean

- Composite volcanoes:** Example are:

- Mount Fuji in Japan
- Mount Rainier in Washington, USA
- Mount Cotopaxi in Ecuador

6.8. COASTAL EROSION

Context

Recently, the Union Minister of State for Environment, Forests and Climate Change told the Lok Sabha that over one-third of India's 6,632 km coastline is vulnerable to erosion.

About the Report

- The **National Centre for Coastal Research (NCCR)**, an attached office of the **Ministry of Earth Sciences**, monitors shoreline changes along the Indian coast.
- It has carried out a **national shoreline change assessment mapping** for the Indian coast using 28 years of satellite data from 1990 to 2018 along nine coastal states and two Union Territories (UTs) to **provide information for coastal management strategy**.
- It is observed that **33.6% of the Indian coastline was vulnerable to erosion**, 26.9% was under accretion (growing) and **39.6% was in a stable state**.

State-wise Report

- A state-wise study on beaches facing erosion, has been carried out by the **National Centre for Sustainable Coastal Management (NCSCM)**.
- This study found that out of 116 beaches surveyed in **Andhra Pradesh, 35 beaches are vulnerable to erosion** and the rest are under accretion, while of the 50 beaches surveyed in **Goa, 22 are facing erosion and 28 accretion**.
- As many as **21 beaches out of the 31 surveyed in Maharashtra** and **13 of 22 surveyed in Kerala are vulnerable to erosion**.
- **Nine of 21 in Tamil Nadu** and **13 out of 18 surveyed in Karnataka** face erosion.

Erosion factors

As per the NCCR, the shoreline changes were a **combined effect of natural and human activities**.

- **Human activities along the coast** (land reclamation, port development, shrimp farming), **within river catchments and watersheds** (river damming and diversion), and **offshore** (dredging, sand mining) in combination with these natural forces often exacerbate coastal erosion.
- **Natural Factors:** Smaller-scale (short-term) events, such as **storms, regular wave action, tides, and winds**, or in response to large-scale (long-term) events such as glaciation or orogenic cycles that may **significantly alter sea levels (rise/fall)** and **tectonic activities that cause coastal land subsidence or emergence**.

Impact of Coastal Erosion

- Coastal erosion has become an **alarming threat for the population** and, if we do not take immediate steps, we will end up losing more land and infrastructure to the sea.

- The damage will be **irreversible**. The coastal population will bear the maximum brunt, especially villages and recent habitations, including buildings, hotels, and resorts which are at risk.
- The receding coastline would adversely affect the **livelihoods of fishing communities**.

Government Initiatives

- The **Coastal Regulation Zone (CRZ) notification, 2019** to conserve and protect coastal stretches and marine areas, and to ensure livelihood security for fisherfolk and other local communities.
 - The notification also provides for **No Development Zones (NDZ)** along various categories of coastal areas to protect India's coastline from encroachment and erosion.
- To protect the coastal areas from erosion, initiatives such as **mangrove plantation**, shelterbelt plantation, and installation of Geo-Tubes (Pentha village in Odisha) have been carried out.
- **Technical support has been extended to the coastal states** in the design of coastal protection measures at vulnerable stretches and preparation of shoreline management plans.
- The **Ministry of Environment, Forest & Climate Change** has delineated the hazard line for the entire coast of the country.
- The **Flood Management Scheme of the Ministry of Jal Shakti**, including anti-sea erosion schemes, is planned and executed by the State Governments with their resources as per the priorities of States.
- The **Union Government is implementing several schemes for increasing forest and tree cover in the country, including mangroves in coastal areas, to prevent erosion**.
 - The scheme for '**Conservation and Management of Mangroves and Coral Reefs**' is being implemented on a **60:40 fund-sharing basis between the Centre and the States**.
- **MISHTI scheme: Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI)** will be taken up for **mangrove plantation along the coastline and on salt pan lands**. It will help in preventing coastal erosion as well as enhance coastal biodiversity.

Way Forward

- **Beach Nourishment:** Importing and depositing sand or other sediments onto eroded beaches to restore and enhance the shoreline.

- **Hard Structures:** Building seawalls, revetments, and bulkheads to provide a physical barrier against wave action.
- **Breakwaters and Groynes:** Construct offshore structures (breakwaters) or structures extending into the water

(groins) to dissipate wave energy and reduce erosion.

- **Monitoring and Early Warning Systems:** Implementing monitoring systems to track coastal changes and provide early warnings for potential erosion events.

6.9. INDUSTRIAL DISASTER

Context

Recently, a fire broke out at the chemical plant in Surat following an explosion in a large tank after leakage of inflammable chemicals stored in it.

Industrial Disaster

- Under the **1948 Factories Act**, an industrial accident has been defined as an **occurrence in an industrial setting that causes death/bodily injury** to a person such that he/she is unfit to resume work in the next 48 hours.
- **Industrial settings**, including **chemical manufacturing plants, oil fields and rigs, refineries, storage facilities, mines, waste disposal facilities, and management facilities**, are hotspots for such mishaps.

Causes of Industrial disasters

- **Non-compliant with industrial safety norms**, mainly in the **unorganized sector**.
- **Lack of legal clarity on roles and responsibilities** as states are largely clueless about prevention, preparedness, and mitigation efforts.
- **Penalty provisions aren't tight enough** to fix accountability. The **Public Liability Act** is not strong enough either.
- **Periodical safety checks** are often skipped.
- The **designs and technologies** used in the industry are outdated.
- The **presence of gases and organic solvents** makes industries vulnerable to fires and explosions.
- Industrial facilities located in **densely populated urban areas** increase the potential for casualties and damage in the event of a disaster.

Major Industrial Disasters in India

- Bhopal Gas Tragedy, 1984 due to leakage of approximately 40 tonnes of toxic methyl isocyanate (MIC) gas into the air.
- Bhagjan Gas and Oil Leak, 2020 took place at the Indian Oil Corporation's Bhagjan Oilfields in Assam, resulting in a leak of natural gas and oil and subsequently catching fire.
- NTPC Unchahar Power Plant Boiler Explosion (2017) resulted in fatalities and injuries.
- Vizag Gas Leak (2020) occurred at the LG Polymers chemical plant in Visakhapatnam, leading to the release of styrene gas.

Provisions dealing with Industrial/chemical disasters

- **Factories Act, 1948**
 - The Act outlines measures to be taken to **prevent industrial accidents and ensure workplace safety**.

- **Environment (Protection) Act, 1986**

- Industries dealing with hazardous substances are required to **adhere to environmental norms and obtain necessary clearances**.

- **Public Liability Insurance Act, 1991**

- The Act was enacted to provide **public liability insurance** to provide **immediate relief to persons affected** by accidents occurring while handling hazardous substances.

- **The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996**

- These rules were framed under the **Environment (Protection) Act, of 1986**, which aims to prevent and mitigate chemical accidents.

- Industries handling hazardous chemicals are required to **prepare and implement on-site and off-site emergency plans** to respond to chemical accidents.

- NDMA Guidelines on Chemical Disasters (Industrial).

- **Occupational Safety, Health, and Working Conditions Code, 2020**

- It includes provisions related to **safety in the workplace, welfare measures, and penalties for non-compliance**.

- **MC Mehta vs Union of India**

- The **Supreme Court of India** initiated the '**Absolute Liability Principle**' i.e., any industry involved in hazardous activities that causes harm to the environment or the people through any accident would be held liable.

Way forward

- **Strict Regulatory Compliance**

- **Enforce and strengthen existing regulations** related to industrial safety, environmental protection, and disaster management.

- **Regular audits and inspections** should be conducted to ensure that industries comply with safety standards.

- **Emergency Preparedness and Response:**

- Develop and regularly update **emergency preparedness and response plans**.

- **Conduct drills and simulations** to ensure that workers and emergency responders are well-prepared to handle various disaster scenarios.

- Community Engagement

- **Involve local communities** in disaster management planning.
- **Establish communication channels** to inform residents about potential risks, evacuation plans, and emergency contact information. Encourage community participation in regular safety drills.

• Incentives and Penalties

- Implement a **system of incentives for industries that prioritize safety and environmental sustainability**.
- At the same time, **enforce penalties for non-compliance** to create a deterrent and encourage a culture of responsibility.

6.10. GLOBAL RIVER CITIES ALLIANCE

Context

Recently, The National Mission for Clean Ganga (NMCG) has launched the Global River Cities Alliance (GRCA).

About Global River Cities Alliance (GRCA)

- The nine-country GRCA inspired by India's River Cities Alliance was launched at the United Nations Climate Change Conference COP28 in Dubai.
 - The other eight nations are Denmark, Cambodia, Japan, Bhutan, Australia, Netherlands, Egypt, and Ghana.
- The NMCG, under the Jal Shakti Ministry will take on the role of the **Secretariat of the GRCA to generate the initial momentum of the alliance activities** which will include knowledge exchange, capacity development, high-level advocacy, and bilateral interactions among member cities.
- **Funding Agency:** The World Bank, Asian Development Bank, and Asian Infrastructure Investment Bank have also pledged their support for the initiative.

Namami Gange Programme

- The Namami Gange Programme is a flagship initiative of the Union Government and was implemented by the NMCG.
- It was inaugurated in June 2014, to achieve objective, i.e., conservation and rejuvenation of Ganga.

National Mission for Clean Ganga (NMCG)

- The NMCG was listed as a society under the Societies Registration Act, 1860.
- It acted as the implementation arm of the National Ganga River Basin Authority (NGRBA) which was constituted under the provisions of the Environment (Protection) Act (EPA), 1986.

Objective

- As part of the collaboration, a **comprehensive water monitoring program**, sharing best practices for renaturing urban areas, and restoring aquatic ecosystems for sustainable urban development.
- The launch of GRCA signifies a **momentous step** in global

efforts towards river conservation and sustainable water management.

- This will enable cities to **learn from each other's successes and failures** as well as connect people with the rivers.
- Initiatives extend to **restoring urban forests and lakes** connected to rivers, emphasizing the importance of green spaces.

River Cities Alliance

- The River Cities Alliance is a **dedicated platform for river cities in India to ideate, discuss, and exchange information for sustainable management of urban rivers**.
- This first of its kind Alliance in the world symbolizes the **successful partnership** of the two Ministries i.e., Ministry of Jal Shakti and Ministry of Housing and Urban Affairs.
- The Alliance will focus on three broad themes- **Networking, Capacity Building, and Technical Support**.
 - The Secretariat of the Alliance will be set up at the **National Institute for Urban Affairs (NIUA)**, with NMCG's support.
- The participating cities in the River Cities Alliance are:
 - Dehradun, Haridwar, Rishikesh, Srinagar, Begusarai, Bhagalpur, Munger, Patna, Berhampore, Hooghly-Chinsurah, Howrah, Jangipur, Maheshtala, Rajmahal, Sahibganj, Ayodhya, Bijnor, Farrukhabad, Kanpur, Mathura-Vrindavan, Mirzapur, Prayagraj, Varanasi, Aurangabad, Chennai, Bhubaneswar, Hyderabad, Pune, Udaipur and Vijayawada.
- The River Cities Alliance currently has **142 river cities in India** and serves as a dedicated platform for members to discuss aspects related to enhancing the state of urban rivers within their administrative boundaries.

7. SCIENCE AND TECHNOLOGY

7.1. CHANDRAYAAN-4

Context

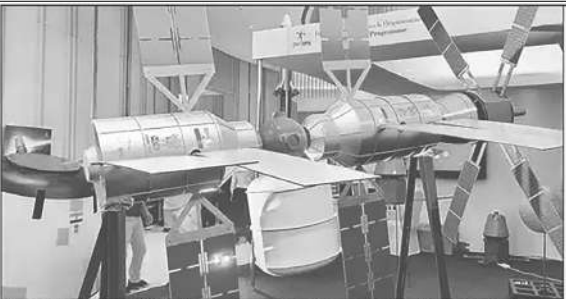
Recently, the Indian Space Research Organization (ISRO) has planned to launch Chandrayaan-4 to bring back samples from the Moon in the next four years.

Objectives of Mission

- This mission **aims to bring back soil samples from the Moon**. This will mark India as a frontrunner in space exploration.
- The **rover will have an exploration area of 1 km x 1 km**, significantly larger than Chandrayaan-3's 500 meters x 500 meters.

Challenge to Mission

- The challenge increases as the **mission aims to perform a precise landing** on the Moon's rim (the edge of the visible lunar disk as seen from Earth), an area yet to be explored.



Why docking technology is important

- Technology will allow spacecraft to exchange materials, humans: Important for space station and human missions beyond Gaganyaan
- Will enable refuelling of existing spacecraft, orbit serving
- Will allow Isro to replace parts/ payloads on satellites already in orbit
- Eventual goal is to be able to shift humans from one vehicle to another

A model based on initial plans of the proposed space station planned by India

Chandrayaan-3 exceeds primary mission objectives
Initial goals of India's third lunar mission:

- Soft-land on Moon, rollout rover and conduct in-situ experiments

Additional achievements through experiments:

- Lunar hop by Vikram (lander) on Aug 23: Showed Isro could reignite engines on lunar surface
- Return of propulsion module to Earth orbit: Showed Isro could bring spacecraft back from Moon

Sample return mission is much more complex as it'll have many more manoeuvres: Collect samples and place them in a canister, return of that unit to the unit that will take off from Moon and reach Moon's orbit where it needs to dock with a spacecraft that will return to Earth's orbit. After this, the unit needs to separate and dock to a spacecraft in Earth's orbit, which will eventually make a re-entry

S Somanath | ISRO CHAIRMAN

Source: Times of India

- This mission is expected to be more complex than its predecessor. Where Chandrayaan-3 had a rover of 30 kg, Chandrayaan-4 plans to land a massive 350 kg rover.

Technologies Required

- For a sample-return mission, we **need much more technology** than what we have developed for the landing.
- a **robotic arm to collect samples** from the lunar surface,
- **mechanisms for docking in the lunar and earth orbits**
- **The ultra-high density energy storage for continuous power supply.**
- **mechanisms for transfer of samples, and re-entry into the atmosphere without burning up.**

- The SPADEX experiment to demonstrate **autonomous docking capability**.

Space Rendezvous Technology

It is technology where two spacecraft can find each other and remain in the same orbit.

ISRO Work on other Mission and Technologies for Vision 2047

- **Bharatiya Antariksh Station (BAS):** India's planned space station that will be capable of conducting experiments **with the help of robots** will be launched by 2028.
- **Inflatable habitat module:** ISRO is working on **developing an inflatable habitat module** where the **astronauts will be able to walk around and conduct experiments**.
- It is a type of space station module that can expand after being launched into orbit.
- It has the advantage of providing more living space for astronauts with less mass and volume than conventional rigid modules.
- **Next Generation Launch Vehicle (NGVL):** ISRO was working on designing the **Next Generation Launch Vehicle (NGVL)** that will have the capacity to carry 16 to 25 T weight to low Earth orbit.
- **Technologies for refuelling and maintenance of satellites:** ISRO is also working on **technologies such as satellites that will be able to refuel other satellites** in space and **ISRO Servicer Module** that will be able to **use robotic arms** for maintenance of the modules and even replace modules when needed.

Previous Lunar Missions

- **Chandrayaan-1 (2008):** India's first mission to Moon, was successfully launched by SDSC SHAR, Sriharikota.
 - The spacecraft was orbiting around the Moon at a height of 100 km from the lunar surface for chemical, mineralogical, and photo-geologic mapping of the Moon.
- **Chandrayaan-2 (2019):** Chandrayaan-2 had a lander, rover, and orbiter, mission failed when the Vikram lander lost communication.
- **Chandrayaan-3 (2023):** Chandrayaan-3 is a follow-on mission to Chandrayaan-2 to demonstrate end-to-end capability in safe landing and roving on the lunar surface. It consists of Lander and Rover configuration.

7.2. ASTROSAT

Context

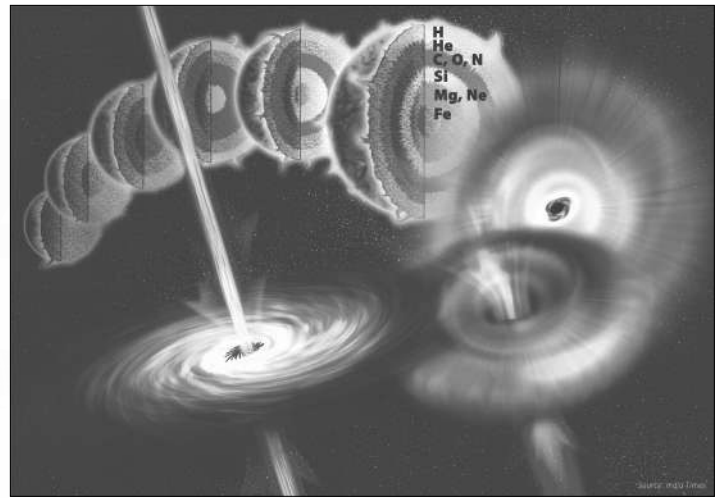
Recently, AstroSat has successfully detected its 600th Gamma-ray Burst (GRB).

About Astrosat

- It is the first dedicated Indian astronomy mission aimed at studying celestial sources in X-ray, optical, and UV spectral bands simultaneously.
- It aims to understand high-energy processes in binary star systems containing neutron stars black holes, etc.
- It enables the simultaneous multi-wavelength observations of various astronomical objects.

About Gamma-ray Burst (GRB)

- A gamma-ray burst (GRB) is a very powerful and short-lived explosion of high-energy light that occurs in distant galaxies.
- GRBs are the most energetic and luminous events in the universe since the Big Bang.
- Scientists think that GRBs are caused by either the collapse of a massive star into a black hole or the merger of two compact objects like neutron stars or black holes.



- GRBs can help us learn about the origin and evolution of stars, galaxies, and black holes, as well as the properties of space-time and matter under extreme conditions.

7.3. ATMOSPHERIC WAVE EXPERIMENT (AWE)

Context

Recently, NASA has launched an Atmospheric Wave Experiment (AWE) mission to the International Space Station (ISS).

About Atmospheric Wave Experiment (AWE)

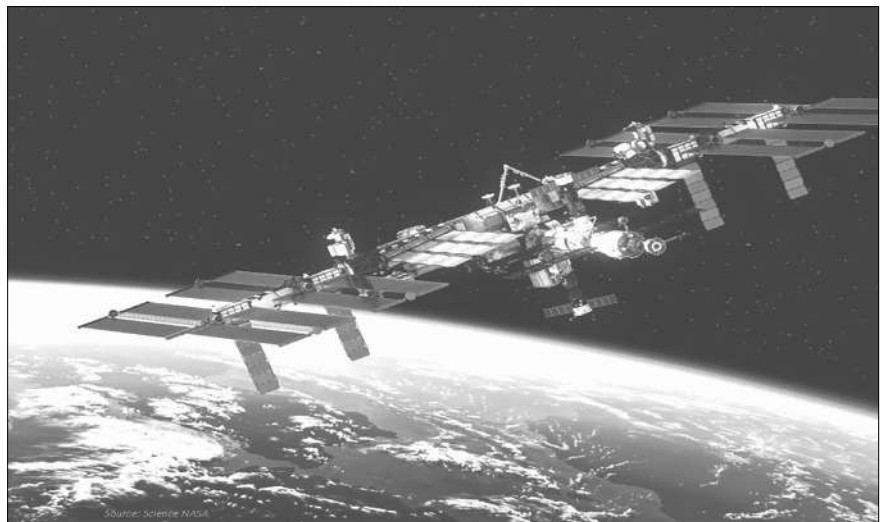
- The Atmospheric Wave Experiment (AWE) is a NASA mission that studies atmospheric gravity waves (AGWs) and their effects on space weather.
- AGWs are waves that travel upward from the lower atmosphere to the upper atmosphere, where they can affect the plasma environment around Earth.
- AWE uses four infrared telescopes to image AGWs as they

produce airglow, a faint light emission, at the edge of space.

- AWE was launched on November 10, 2023, and attached to the International Space Station (ISS) for a two-year observation period.
- **Significance of studying AGWs:** A better understanding of how gravity waves in the upper atmosphere interact with the jet stream, polar vortex, and other phenomena could be key to improved weather predictions and climate models.

About the International Space Station (ISS)

- The International Space Station (ISS) is the largest space station ever built by humans.
- It is a collaboration of five national space agencies: NASA (United States), Roscosmos (Russia), JAXA (Japan), ESA (Europe), and CSA (Canada).
- The ISS orbits the Earth at an average altitude of 400 km (250 mi) and completes 15.5 orbits per day.
- The ISS serves as a laboratory for scientific research in microgravity and space environments, as well as a platform for testing new technologies and exploring the solar system.



7.4. AGNIKUL

Context

Recently, Agnikul (an Indian space tech startup) is planning to launch its first satellite launch vehicle, equipped with the world's first 3D-printed engine.

About

- The mission would be a technology demonstrator that will **mirror Agnikul's orbital launch** – the first commercial launch planned in 2024 - but at a reduced scale.
- Also, this is a **major milestone for 3D printing technology in India**, which is typically used for printing medical implants like hip implants, etc.

Agnikul

- It was **founded in 2017 by Srinath Ravichandran**, Moin SPM, and Professor S.R. Chakravarthy from IIT Madras.
- It designs, builds, and launches orbital-class rockets for **micro and nanosatellites**.
- The agreement signed under the **IN-SPACe initiative** sanctioned Agnikul access to the Indian space agency's expertise and **facilities to build Agnibaan and its launchpads**.
- **The startup incubated on the Indian Institute of Technology, Madras campus, will become India's second private company to make a small satellite launch vehicle.**
 - The **first one was Skyroot Aerospace**, which launched the Vikram S in November 2022.
 - Vikram S was a **sounding rocket launched from guide rails**.

Agnibaan SOrTeD (Sub Orbital Technological Demonstrator)

- **Agnibaan SOrTeD (Sub Orbital Technological Demonstrator)** is a highly customizable, **single-stage launch vehicle** capable of taking up to 300 kg payload to orbits around 700 km high (**low Earth orbits**) and enables plug-and-play configuration.
- This means, it can be **expanded or shrunk** depending on the satellite that's taken to space.

Features of Agnibaan SOrTeD

- This isn't a sounding rocket but a complex machine.
- **Agnibaan would lift off vertically** and follow a **predetermined trajectory** while performing a precisely orchestrated set of manoeuvres during flight.

- It will deliver customizable launch vehicles, which means configuring the vehicle for a **particular payload size or satellite size**.
- **It's not a one-size-fits-all configuration**. Most of the launch vehicles are fixed-capacity launch vehicles.

Agnilet

- The **Agnilet engine is an entirely 3D-printed, single-piece, 1.4 kN semi-cryogenic engine**.

Sounding rockets

Sounding rockets are one- or two-stage solid propellant rockets used for probing the upper atmospheric regions and for space research.

IN-SPACe

- It functions as the **single nodal point interface** between the ISRO and private players willing to participate in space-related activities, or use India's space resources.
- Its objective is to **boost involvement of private industries** in space activities through encouraging policies and recommending for a friendly regulatory environment.

- The engine uses a **mixture of liquid kerosene at room temperature and super-cold liquid oxygen as propellant**.
- It was **fully designed and manufactured in India** and was successfully test-fired in early 2021.

3D Printing

- Three-dimensional (3D) printing is also known as **Additive Manufacturing** which uses materials such as plastics and metals to convert products envisaged on computer-aided design to real three-dimensional items.
- It is the **opposite of Subtractive Manufacturing** which is cutting out/hollowing out a piece of metal or plastic with, for instance, a milling machine.
- 3D printing traditionally has been used for prototyping and has a lot of scope in making artificial limbs, stents, dental crowns, parts of automobiles and consumer goods, among others.

Additive Manufacturing

- Additive Manufacturing (AM) or additive layer manufacturing (ALM) is the industrial production name for 3D printing, a computer-controlled process that creates three dimensional objects by depositing materials, usually in layers.

7.5. RFID SYSTEM

Context

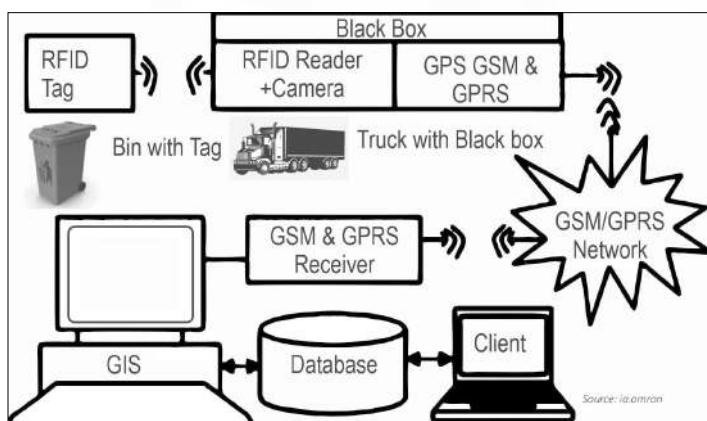
Recently, the Delhi Municipal Corporation has implemented a Radio Frequency Identification (RFID) system to enhance vehicle monitoring at waste disposal sites.

About

- RFID readers have been installed at these garbage disposal locations, capable of reading tags on approximately **1,400 waste transport vehicles**.
- Previously, **weight measurement and data entry** were conducted manually, but the new RFID system **provides real-time data, minimizing chances of errors or glitches**.

RFID

- It is a technology that utilizes **radio waves** to identify objects and track their movement.
- It consists of two main components: **Tags and Readers**.
- RFID Tags:** RFID tags are small electronic devices that store data.
 - They can be attached to various objects**, such as products, animals, or people. **RFID tags can be passive or active**.



- Passive tags** do not have their power source and rely on the energy from the reader's radio waves to transmit data.
- Active tags** have their power source and can transmit data over a longer distance.
- RFID Readers:** RFID readers are devices that emit radio waves and receive data from RFID tags.
 - They can be **fixed or portable**.
 - Fixed readers are typically mounted in a specific location, such as a doorway or a warehouse.

Portable readers can be hand-held or mounted on vehicles

- How RFID Works:** When an RFID tag comes within range of an RFID reader, the reader emits a radio signal that activates the tag.
 - The **tag then transmits its data back** to the reader.

- The **reader can then decode the data** and identify the object to which the tag is attached.

Applications of RFID

- Supply chain management:** RFID can be used to track the movement of goods throughout the supply chain. This can help to improve efficiency and reduce costs.

Radio Waves

These are a type of electromagnetic radiation **best-known** for their use in communication technologies, such as television, mobile phones and radios. Radio waves have the **longest wavelengths** in the EM spectrum.

- Access control:** RFID can be used to control access to buildings and other secure areas.
- Asset tracking:** It can be used to track the location of valuable assets, such as laptops and medical equipment.
- Inventory management:** RFID can be used to track the inventory of goods in a warehouse or store.
- Animal tracking:** It can be used to track the movement of animals, such as livestock and pets.
- People tracking:** RFID can be used to track the movement of people in a variety of settings, such as hospitals, prisons, and theme parks.

RFID provides numerous benefits

- Improved Efficiency and Route Optimization:** RFID tags attached to waste collection vehicles can provide real-time tracking data, enabling waste management personnel to optimize routes and reduce fuel consumption.
- Enhanced Vehicle Utilization and Maintenance:** It can be used to track vehicle usage patterns, identify underutilized vehicles, and schedule maintenance accordingly.
- Streamlined Billing and Revenue Management:** It can be integrated with billing systems to accurately track the amount of waste collected from each customer.
- Enhanced Public Safety and Security:** It can be used to monitor vehicle movements and identify unauthorized access to waste disposal sites.
- Reduced Waste Diversion and Improved Recycling Rates:** It can be used to track the flow of waste materials and identify opportunities for waste diversion and recycling.
- Reduced Environmental Impact:** By optimizing waste collection routes, reducing vehicle emissions, and increasing recycling rates, RFID can help to reduce the overall environmental impact of waste management activities.

7.6. PILATUS PC-7 MK II

Context

Recently, two Indian Air Force (IAF) pilots were killed after their **Pilatus PC-7 Mk II** trainer aircraft crashed during a routine training sortie from the Air Force Academy at Dundigal, Telangana.

Pilatus PC-7 Mk II

- **Pilatus Aircraft Ltd** is an aerospace manufacturer located in **Stans, Switzerland**, which specializes in producing **short take-off and landing aircraft**, as well as trainer aircraft for air forces across the world.
- The original aircraft has been in service **since the 1970s** and the **Mk II version was introduced in the 1990s**, with newer airframe and more advanced avionics.
- **This was the first crash involving the aircraft** since it was inducted into the Air Force almost a decade earlier, having clocked around 2 lakh hours of flying time since then.

About trainer aircraft:

- A trainer is a class of aircraft designed specifically to facilitate flight training of pilots and aircrews.
- Modern military aircraft are notoriously difficult to master for rookie pilots. Hence, they must first be trained on other, more basic aircraft.
- Trainer aircraft fly slower, have fewer complex systems, and are designed to be resistant to and recoverable from stalls and spins, a common challenge for rookie pilots.
- They are also much cheaper, allowing air forces to buy them in bulk to train cadets.

Features

- Low-wing, turbo-prop aircraft with tandem seating.
- Powered by a Pratt & Whitney turboprop engine.
- Maximum speed of 412 km/h and can fly to a height of slightly more than 10,000 m.
- It has a range of 1,200 km without external tanks (slightly more than 4 hours of flying time).

India's indigenous basic trainer aircraft

- In March, the Defence Ministry awarded a Rs 6,838-crore contract to Hindustan Aeronautics Limited (HAL) for 70 HTT-40 basic trainers.
- It is designed indigenously at HAL's Aircraft Research & Design Centre.
- The HTT-40 is a basic trainer aircraft powered by a **four-bladed turbo-prop engine (PC-7 is three-bladed)**.
- The aircraft will have an **air-conditioned cockpit, modern avionics, hot refueling (with engines running), and zero-zero ejection seats**.
- HAL will start **rolling out the aircraft** in 2025-26.

7.7. FIRST GENOME SEQUENCING OF JAMUN

Context

Recently, researchers at the Indian Institute of Science Education and Research (IISER Bhopal) have completed the **first-ever genome sequencing of the jamun tree**.

About

- This is the **first time** the plant has been examined and decoded so closely.
- This research was aimed **to gain new functional and evolutionary insights** from the jamun genome, which could be responsible for the wide range of pharmacological properties of this species **"conferred by the bioactive compounds that act as nutraceutical agents** in modern medicine".

What is Genome sequencing?

- Genome sequencing is the **process of determining the DNA sequence** of an organism's genome.
- A **genome** is a complete set of DNAs that contains all of the genes of an organism.

Key Findings

- The **jamun genome has a higher number of coding genes** resulting from gene duplication events compared to the

other two sequenced species from this genus, which point towards a neopolyploidy event in the jamun species.

Nanopore DNA sequencing

- Nanopore sequencing is a unique, scalable technology that enables direct, real-time analysis of long DNA or RNA fragments.
- It works by monitoring changes to an electrical current as nucleic acids are passed through a protein nanopore.
- The resulting signal is decoded to provide the specific DNA or RNA sequence.

10x Genomics sequencing technology

- 10x Genomics is a microfluidics-based method of single-cell RNA sequencing. The technique makes use of the Chromium system, a device that enables single-cell sequencing with their Next GEM technology.

- This duplication of genes can **allow jamun to acquire novel functions**.
- Analysis revealed the key genes involved in **facilitating the adaptive evolution of Jamun**.

- Among these, **14 genes allow for the biosynthesis of terpenoids**, which are a diverse class of metabolites responsible for plant defence responses.
- These also contribute to **the antioxidant and anti-inflammatory properties**.

Genome India Project (GIP)

- The GIP aims to collect 10,000 genetic samples from citizens across India, to build a reference genome.
- It is a scientific initiative inspired by the Human Genome Project (HGP), an international effort that successfully decoded the entire human genome between 1990 and 2003.
- The researchers discovered the presence of **glucosides, another class of metabolites that prevent the conversion of starch into sugar**.
- **Multi-stress tolerant:** Jamun has various genes that make the plant rugged and improve its **stress tolerance** to factors like weeds and insects that induce damage, heat stress, salinity, and drought.

Jamun

- *Syzygium cumini*, more commonly known as Jamun, is a Myrtaceae plant family tropical tree.
- Jamun is indigenous to India.
- Its tree is tall and evergreen.

Benefits of Jamun

- Not just Ayurveda but multiple clinical studies have shown the health benefits of jamun as an excellent source of antioxidants, iron, and vitamin C.
- Fruit seed extracts of Jamun have well-known anti-diabetic properties and are highly recommended in Ayurveda to treat a variety of health ailments.

Why is the Genome Experiment needed?

- To understand the genomic and evolutionary basis of the tree's medicinal values.
- To speculate on the adaptive evolution of **major plant secondary metabolism pathways**.
- **to facilitate future genomic, evolutionary, and ecological studies on the world's largest tree genus.**

7.8. 'NEW DELHI DECLARATION' OF GPAI

Context

Recently, representatives from 28 countries and the European Union adopted the 'New Delhi Declaration' on the Global Partnership on Artificial Intelligence (GPAI).

Key Details

- India hosted the **summit and is set to chair the GPAI grouping in 2024**.
- **Declaration Commitment:** Affirms commitment to principles for responsible stewardship of trustworthy AI rooted in democratic values and human rights.

Global Partnership on Artificial Intelligence (GPAI)

- It is an international initiative launched in 2020 with the aim of guiding the responsible development and use of artificial intelligence (AI) in a manner that respects human rights and democratic values.
- **Members:** 28 countries & EU.
- **Structure:** Council, Steering Committee, Secretariat, 2 Centres of Expertise.
- **Working groups:** Responsible AI, Data Governance, Future of Work, Innovation & Commercialization.
- **India's role:** Founding member, Incoming Council Chair, hosted 2023 Summit.
- Focuses on promoting **trustworthy, responsible, sustainable, and human-centred** use of AI.
- **Challenges Addressed:** Highlights commitment to addressing concerns around **misinformation, disinformation, unemployment, transparency, fairness, intellectual property, personal data, and threats to human rights**.
- **Global Cooperation:** Discusses **pooling OECD resources** to

find the best solutions for AI deployment and governance for the benefit of people globally.

- **Inclusivity Priority:** Advocates for increased **inclusivity, encouraging more developing** countries to join GPAI.
- **Senegal** has joined the GPAI steering committee.
- **Thematic Priority – Agriculture:** Recognizes India's contribution to making **agriculture a part of the AI agenda**.
- Embraces the use of AI innovation to support **sustainable agriculture** as a new thematic priority for GPAI.

About GPAI

- GPAI is a collaboration of countries **from North and South America, Europe, and East Asia**.
- **GPAI's Mission**
 - It aims to work towards the trustworthy development, deployment, and use of AI.
 - **Inclusive Movement:** Emphasises GPAI as an inclusive movement, welcoming countries in the Global South to ensure AI benefits are **accessible globally**.

India's AI initiatives

- **Healthcare**
 - **Applied AI Research Centre (Telangana):** Utilizes AI for healthcare solutions like managing epidemics and optimizing resource allocation.

- **National e-Governance Division's "Swasthya Setu" app:** Tracks COVID-19 contacts and provides health information.
- **Education**
 - **YUVAi program:** Offers AI training and resources to young innovators.
- **Governance:**
 - **MCA 3.0 portal:** Streamlines corporate compliance using AI and data analytics.
 - **India AI portal:** Provides information and resources for AI enthusiasts, experts, and professionals.
- **Other initiatives**
 - **US-India AI Initiative:** Promotes collaboration and R&D in critical areas like energy, agriculture, and infrastructure.
 - **Digital India Aatmanirbhar Bharat Roadmap 2022-2027:** It lays out a vision for developing India's AI ecosystem, focusing on areas like **healthcare, education, and agriculture.**

Positive implications	Potential challenges
• Increased international cooperation on AI: It signals a strengthened commitment from major players to collaborate on developing responsible and ethical AI frameworks. • Enhanced focus on human-centric AI: It emphasizes the importance of developing AI that benefits and respects human rights and values. This could lead to AI systems that are more transparent, accountable, and fair. • Greater inclusivity: It calls for broader participation from countries in the global south, ensuring that AI benefits everyone and not just developed nations. • Leadership role for GPAI: It positions GPAI as a leading force in shaping the global AI landscape. • Enhanced trust and confidence in AI: By addressing concerns around bias, transparency, and accountability, the declaration could help build public trust and confidence in AI.	• Implementation and enforcement: Translating the principles of the declaration into concrete policies and regulations could be challenging. • Differing national priorities: Balancing the needs and priorities of different countries while ensuring a consistent approach to AI governance could be complex. • Capacity building: Developing countries may lack the resources and expertise to fully participate in AI development and governance. • Evolving technology: AI is constantly evolving, and the principles of the declaration may need to be updated and adapted over time to keep pace with technological advancements. • Geopolitical tensions: Disagreements between countries or competing AI ecosystems could hinder collaboration and slow down progress toward responsible AI development.

7.9. ROBOTICS

Context

Recently, Amazon has decided to expand the deployment of robotic systems in its warehouses in different parts of the world.

About

- Amazon is aiming to master mobility and manipulation inside the warehouse with the help of robots.
- While mobility makes robots move things faster inside the facility which raises questions about the capability of India's robotic ecosystems.

About Robotics

- According to the Bureau of Indian Standards (BIS), robotics is defined as the science & practice of designing, manufacturing, and applying robots. It encompasses the construction, design, use, and operation of robots.

The principle follows by robots

- The robot operates by sensing the environment, carrying out computations for decision-making, and performing actions.
- Through sensors, robots collect and feed measurements to a computer/controller, which stimulates the information and sends a signal to motors and actuators which make the robot interact with the environment.
- Interacting all the above features with the proper use of artificial intelligence (AI) & machine learning (ML) led to the development of advanced robots that can perform tasks such as speech recognition, decision-making, and visual perception.

World Robotics Report 2022

- As per the report, the five markets of robots are Japan, China, Germany, the Republic of Korea, and the United States.
- These countries contributed around 75% of global robots. China ranked first in terms of industrial robots followed by Japan and the USA.

India and Robotics

- As per the World Robotics Report (2022), India ranks 10th globally in terms of annual industrial installations.
- From 2016, as per MEitY data showed that the average operational stock of industrial robots has doubled to reach around 33,000 units in 2021 with average an annual growth rate of around 16%.

Application of robotics in India

Manufacturing Sector

- **Production:** They come in various configurations & types to perform specific tasks such as SCARA and articulated robots etc.
- **Logistics and Warehousing:** To reduce errors, running costs, and speed up order fulfillment and perform better inventory management such as autonomous mobile robots.

Healthcare sector

- **Surgical robots:** The surgeon uses AI & ML robots with the help of small surgical tools to perform surgery.
- **Disinfecting & cleaning:** Use of UV-C light/ Hydrogen Peroxide Vapor (HPV) for cleaning identified areas.

Agriculture Sector

- **Crop Harvesting:** Use of AI & ML robots to detect when the crops are ready to be picked, then these robots help to perform harvest carefully without damaging the produce.
- **Animal husbandry:** To improve the nutritional value of grass, and use the tools, they help to optimize the dairy business.
- **Precision farming:** To help in precision farming using big data analysis.

National Security

- **Mine detection:** To detect landmines using the AI & ML metal detector.
- **Operate remote vehicles:** To explore a space without actually being in that space. They send back data including live video also.
- **In surveillance,** they can be used in various activities such as aerial, surface water, and mobile robots for ground and underwater applications.

Issues faced by the Indian robotic system:

- High import dependency makes it vulnerable to the supply

chain which impacts the local availability of materials such as magnets (crucial for motors), batteries, etc.

- Limited skilled human resources make a crucial challenge in the development, design, and maintenance of robots such as shortage of specialized maintenance personnel.
- Ethical concerns such as biased decision-making, privacy infringements and surveillance usage of robotics.
- Lack of regulatory framework which address intellectual property protection and cybersecurity for robotics systems.

Way forward

- Build a Robotic Innovation Unit (RIU) which creates a dynamic robotics ecosystem by collaborating with industry start-ups, to make Robotics future-ready.
- Create a 'Research and Development (R&D) Centre of Excellence for robotics to focus on cutting-edge discoveries driving technological advancements in robotics.
- **Regulatory steps**
 - Build Demonstration Centres to perform robotics innovations and innovation test beds.
 - Create a Fund for innovation and provide fiscal incentives and start-up stimulus.

Therefore, the Government of India formulated a draft National Strategy for Robotics which aims to position India as a global leader in the design, development, research, and development of robotics.

7.10. DIGITAL TWINS

Context

Recently, Survey of India joined hands with a private mapping firm for 'Digital Twins'.

About Digital Twins

- A **digital twin** is a virtual model of a physical object, system, or process. It's a digital representation of a physical entity that looks and behaves exactly like its real-world counterpart.
- **Digital twins can be used for**
 - Simulation, Integration, Testing, Monitoring, Maintenance, predicting performance outcomes, identifying inefficiencies, and Designing solutions.
 - Digital twins can be generated from 3D data or real-time

data collected from sensors or other sources.

- **They can include information such as:**
 - Production information, Equipment, Materials, Parts, Methods, Quality control, Real-time feedback, Historical analysis, and Maintenance records.
- **Digital twins can help organizations make better decisions by simulating real-world situations and outcomes.**
 - They can also be used to improve the design of large physical structures, such as buildings or offshore drilling platforms.

7.11. SMALL N-REACTORS FOR CLEAN ENERGY SWITCH

Context

Recently, the government replied in Lok Sabha that India is advancing its efforts in clean energy transition by focusing on new technologies such as Small Nuclear Reactors (SMRs).

About

- **Small Modular Reactors (SMRs)** are being considered as an attractive option for repurposing retiring coal-based

thermal power station sites.

- India's government sees SMRs as a promising clean energy source for generating low-carbon electricity.

Clean Energy

- It refers to energy sources that are renewable and have minimal environmental impact.
- These sources are essential for combating climate change, reducing air pollution, and ensuring a sustainable future for our planet.

Importance of Small Nuclear Reactors (SMRs) in India

- **Clean Energy Transition**
 - Government prioritizes SMRs for clean energy transition.
 - SMRs contribute to a **low-carbon future and reduce fossil fuel dependence**.
- **Repurposing Coal Plants**
 - SMRs are seen as attractive options for repurposing retiring coal plants.
 - Leverages existing infrastructure and promotes sustainability.

Nuclear Reactors

- Nuclear reactors are complex machines that harness the power of nuclear fission to generate electricity.
- Nuclear fission occurs when the nucleus of an atom, typically uranium-235, is split by a neutron, releasing energy and additional neutrons.
- **Types of Nuclear Reactors:**
 - Light-water reactors (LWRs).
 - Heavy-water reactors (HWRs).
 - High-temperature gas-cooled reactors (HTGRs).
 - Fast-neutron reactors (FNRs):
 - Small modular reactors (SMRs).

- **Flexibility and Scalability**
 - Smaller and more flexible than conventional plants, allowing deployment in diverse locations.
 - Modularity enables scalability to meet specific energy needs.
- **Low-Carbon Electricity**
 - Generate significant amounts of clean electricity, assisting fossil fuel transition.
 - Provide reliable and continuous power for industrial decarbonization.
- **Complementary Role**
 - SMRs complement, not replace, large nuclear plants for base load power generation.

International Atomic Energy Agency (IAEA)

- It is the world's central intergovernmental forum for scientific and technical cooperation in the peaceful use of nuclear energy.
- It was established as an autonomous organization within the United Nations system in 1957.

- **Safety and Regulations**
 - Stringent regulations ensure safety and radiation containment.

- Public acceptance and international regulatory harmonization are crucial.

• Early Development Stage:

- Techno-commercial aspects of SMRs are still evolving globally.
- Technological advancements and global collaboration are key.

• International Cooperation:

- Collaboration with bodies like the **International Atomic Energy Agency (IAEA)** is critical for harmonizing regulations and accelerating development.

Small modular reactors (SMRs)

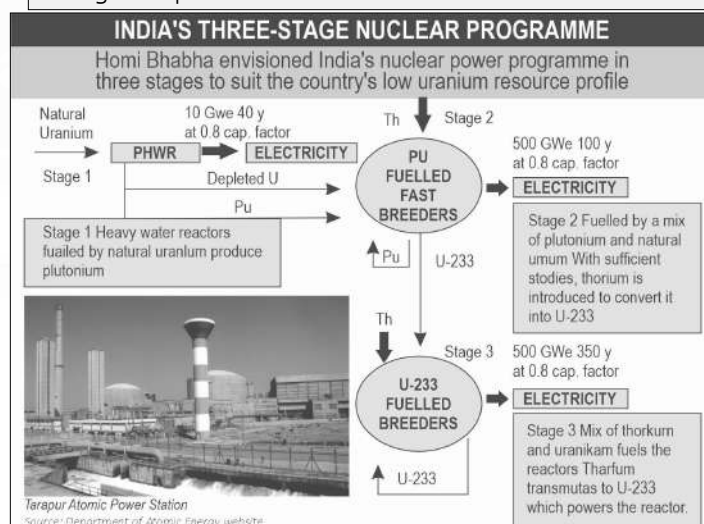
- They are a class of nuclear reactors that are significantly **smaller than conventional nuclear reactors**.
- They typically have an **electrical power output of less than 300 megawatts (MWe) per unit**, compared to **1,000 MWe or more for traditional reactors**.

Key Features of SMRs

- **Modularity:** SMRs are designed to be built-in modules that can be manufactured in factories and then shipped to the site.
- **Scalability:** SMRs can be deployed in a variety of configurations, from single units to large power plants.
- **Safety:** SMRs are designed to be inherently safe.
- **Flexibility:** SMRs can be used for a variety of applications, including electricity generation, desalination, and district heating.
- **Reduced waste:** SMRs produce less radioactive waste than conventional reactors.

Types of SMRs

- **Light water reactors (LWRs):** These are the most common type of SMR, and they use the same technology as conventional LWRs.
- **Molten salt reactors (MSRs):** MSRs use molten salt as a coolant, which can improve their safety and efficiency.
- **High-temperature gas-cooled reactors (HTGRs):** HTGRs use helium gas as a coolant, which allows them to operate at high temperatures.



8. INTERNAL SECURITY

8.1. CENTRE SIGNS PEACE PACT WITH UNLF

Context

Recently, The United National Liberation Front (UNLF), Manipur Valley's oldest insurgent group, has signed a peace agreement with the Government of India and the Government of Manipur.

About

- This is the **first time** a valley-based insurgent group has agreed to join the mainstream by abjuring violence.
- The agreement **will end hostilities** between **the UNLF and security forces** and provide an opportunity to address the **longstanding concerns** of the community.
- It is hoped that the return of UNLF to the mainstream will **encourage other valley-based armed groups to participate in the peace process**.

Important points of the Agreement

- **Repudiation of violence:** The UNLF renounces violence and agrees to join the mainstream political process.
- **Suspension of operations:** The UNLF and security forces will suspend military operations to maintain a favorable environment for peace.
- **Establishment of camps:** Designated camps will be established for UNLF cadres within Manipur under the supervision of the government and armed forces.
- **Peace Monitoring Committee:** A Peace Monitoring Committee will be formed to oversee the implementation of the agreement.

About Suspension of Operation Agreement

- It is a type of **ceasefire agreement** that is typically used to temporarily halt hostilities between two parties engaged in a conflict.
- The agreement usually includes provisions for the withdrawal of forces from the conflict zone, the cessation of hostilities, and the establishment of a monitoring mechanism to oversee the implementation of the agreement.
- **Some Examples**
 - Nagaland Ceasefire Agreement, 1997.
 - Between the Government of India and the United National Liberation Front (UNLF) in 2005.
 - Between the Government of India and the Kuki National Army (KNA) in 2008.
 - Between the Government of India and the United Liberation Front of Assam (ULFA) in 2009.
 - Between the Government of India and the National Socialist Council of Nagaland-Khaplang (NSCN-K) in 2015.
 - Between the Government of India and the National Socialist Council of Nagaland (NSCN-K) in 2018.
- **Addressing grievances:** The government will address the longstanding grievances of the UNLF community through

dialogue and engagement.

- **Encouragement for other groups:** The agreement encourages other valley-based armed groups to participate in the peace process.

United National Liberation Front (UNLF)

- It is a **Meitei separatist insurgent group** in the Indian state of Manipur.
- It was founded on **November 24, 1964, by Arambam Samarendra Singh**, to establish an **independent socialist Manipur**.
- The UNLF has been engaged in a **violent insurgency against the Indian government** for over five decades.
- The group has carried out **numerous attacks** on security forces, government officials, and civilians.
- The UNLF is one of **"Meitei Extremist Organizations"** banned by the Union government.
- The ban on UNLF (United National Liberation Front) is still active, but only for a faction of the group that has not agreed to a ceasefire with the Indian government.
- **In 1990, the UNLF along with other insurgent groups in the Northeast, including-**
 - **National Socialist Council of Nagaland – Khaplang (NSCN-K)**
 - **United Liberation Front of Assam (ULFA),**
 - **The Kuki National Army (KNA), floated a pan-Mongoloid coalition called the Indo-Burma Revolutionary Front (IBRF) to wage a "united struggle for the independence of Indo-Burma".**
- Over the years, the UNLF weakened with splits and the **Pambei faction** came into being in **2021 under the leadership** of its former chairman **Khundongbam Pambei** after a split with the rest of the central committee.

Implications of the agreement

- **Positive Implications**
 - **Possibility of reduction in hostilities and Violence:** The agreement marks a cessation of hostilities between the UNLF and security forces, which may reduce the violence and bloodshed that has plagued Manipur.
 - **Return to Mainstream and Reconciliation:** The UNLF's commitment to renounce violence and join the mainstream opens up avenues for reconciliation and

integration of the group into the social and political fabric of Manipur.

- **Socio-economic Development:** The cessation of conflict and the return of peace can foster a favorable environment for socio-economic development in Manipur, attracting investments, boosting tourism, and improving the lives of its citizens.
- **Encouragement for Other Groups:** The UNLF's decision to engage in peace talks could serve as a positive example and encourage other insurgent groups in the region to follow suit.

Timeline

- 1964: The UNLF was founded.
- 1970s: The UNLF carries out numerous attacks on security forces and government officials.
- 1990: The UNLF joins the Indo-Burma Revolutionary Front (IBRF).
- 1998: The UNLF signs a ceasefire agreement with the government.
- 2008: The ceasefire agreement is broken.
- 2023: The UNLF signs a peace agreement with the government.

- **Regional Stability and Peace:** The overall unification of the Northeast region can contribute to regional stability

and peace, fostering cooperation and development across the region.

Potential Challenges:

- **Full Implementation and Monitoring:** The successful implementation of the peace agreement will depend on the commitment of all parties involved, including the government, the UNLF, and various stakeholders in Manipur.
- **Addressing Underlying Grievances:** Resolving the underlying grievances and aspirations of the UNLF and other insurgent groups will be crucial to ensuring long-term peace and stability.
- **Economic and Social Rehabilitation:** Integrating the UNLF cadres into society and giving them with economic opportunities will be essential for preventing them from returning to violence.
- **Addressing Ethnic Tensions:** The peace process should address the underlying ethnic tensions and promote inter-ethnic harmony and understanding in Manipur.
- **Regional Cooperation:** Addressing the cross-border issues with neighboring Myanmar, such as insurgent camps and arms smuggling, will be crucial for sustaining peace in Manipur.

8.2. ILLEGAL MIGRANTS

Context

Recently, the Supreme Court is heading a Constitution Bench hearing a series of petitions challenging the constitutionality of Section 6A of the Citizenship Act, 1955.

About

- The Supreme Court is hearing **challenges against Section 6A**, which allegedly facilitated the **illegal settlement of migrants in Assam**.
- The Supreme Court expressed concern about the **"unlimited influx" of illegal migrants** from Bangladesh.
- **Concerns raised** include demographic changes, resource burden, and harm to the native culture.
- **The Court acknowledged** the limited availability of infrastructure, education, and public hospitals in India.

Illegal Migrants

- Illegal migrants are individuals who enter or reside in a country without legal authorization.
- This can occur through various means, including:
 - Entering a country without proper documentation.
 - Overstaying a visa.
 - Working without a work permit.

Supreme Court hearing on Section 6A of the Citizenship Act

Section 6A Provisions

- The provisions classified immigrants from Bangladesh into **three categories** based on their entry dates.
- Those entering before 1966 were **deemed citizens**, those between 1966 and 1971 were **registered under certain conditions**, and those entering after 1971 were **deemed illegal**.

Observations of the Court

- The Court ordered the government to provide data on **illegal immigration after 1971** and steps taken to control it.
- **Chief Justice emphasized due process** and avoiding unjust deportation of innocents.
- The Court questioned the government's efforts to **strengthen border security** and concerns were raised about the **lack of action** against illegal immigration in West Bengal.
- The Court differentiated between concerns **about illegal migration** and complaints about **inter-state migration** within India.
- The impact of migration from a foreign country was deemed **more significant**.

- The Solicitor General is expected to submit an **affidavit addressing the Court's concerns** and providing requested information.

The Citizenship Act, 1955

- It is an Act of the Parliament of India that governs the acquisition and termination of Indian citizenship.
- It was enacted on December 11, 1955, and came into force on January 20, 1956.

Section 6A

- It is a special provision inserted into the Citizenship Act, 1955, following the signing of the Assam Accord in 1985.
- This Accord aimed to resolve the long-standing issue of illegal immigration in Assam and restore peace and stability in the region.

Impact of Illegal Migration in India

- **Potential Positive Impacts**
 - **Economic contribution:** Illegal migrants can contribute to the economy by filling labor shortages in various sectors, particularly agriculture, construction, and domestic work.
 - **Cultural exchange:** The presence of diverse migrant populations can contribute to cultural exchange and enrich the social fabric of India.
 - **Remittances:** Money sent back home by migrant workers can support their families and communities in their countries of origin, contributing to economic development and poverty reduction.
- **Potential Negative Impacts**
 - **Economic strain:** Illegal migrants may compete with

citizens for jobs and resources, potentially driving down wages and straining social services like healthcare and education.

- **Social tensions:** The influx of illegal migrants can lead to social and cultural clashes, sometimes resulting in prejudice and discrimination against migrant communities.
- **Security concerns:** While often exaggerated, illegal immigration can be linked to criminal activity and terrorism, posing security threats and requiring increased vigilance.
- **Exploitation:** Illegal migrants are often vulnerable to exploitation by employers who pay them low wages and deny them basic rights and protections.
- **Public health concerns:** Mass migration can strain healthcare systems and potentially lead to the spread of infectious diseases.

Way Forward

- A balanced approach addressing both the positive and negative impacts of illegal migration is needed. This includes:
- **Strengthening border security:** Effectively control illegal entry and enhance border surveillance.
- **Tackling root causes:** Address poverty and conflict in migrant-origin countries to discourage illegal migration.
- **Creating legal pathways:** Provide safe and legal routes for migration to reduce the illegal influx.
- **Integration and inclusion:** Foster social cohesion and address discrimination against migrant communities.

8.3. PREVENTION OF MONEY LAUNDERING ACT (PMLA)-2003

Context

Recently, The Supreme Court has clarified in a judgment that the Enforcement Directorate (ED) need not furnish a person accused under PMLA with a copy of the grounds of detention at the time of his arrest.

About

- The Court clarified that written communication of the arrest grounds should be given within a **"reasonable period," specifically within 24 hours of the arrest.**
- The judgment addresses concerns about violating **Article 22(1) of the Constitution**, emphasizing the fundamental right of a person in custody to be informed about the reasons for their arrest.

Implications of this judgment

- **Impact on Individual Rights:** This judgment raises concerns about the potential violation of **Article 22(1) rights**, especially if the "reasonable period" for providing grounds for arrest is stretched.
- Critics argue that **delayed information** could **hinder access to legal counsel** and weaken defense preparation.

Article 22(1)

No person who is arrested shall be detained in custody without being informed, as soon as may be, of the grounds for such arrest nor shall he be denied the right to consult, and to be defended by, a legal practitioner of his choice.

- **ED Powers and Discretion:** The judgment expands the ED's power to detain individuals without immediately informing them of the specific charges against them.

Section 19 of PMLA

states that the accused must be informed of the grounds of arrest "as soon as may be", which the bench said should be construed "as early as possible without avoidable delay" or "within reasonably convenient" or "reasonably requisite" period of time.

- This raises concerns about the potential misuse of power and the increased vulnerability of individuals targeted by the agency.

- **Legal Uncertainty:** The split decision creates ambiguity and leaves scope for further legal challenges regarding the interpretation of PMLA and the timing of providing arrest grounds.
- **Ambiguity and Future Disputes:** The judgment leaves room for ambiguity regarding the interpretation of “reasonable period” and what constitutes “informed or made aware orally.”
- This could lead to future legal challenges and disputes about compliance with **Article 22(1) and Section 19 of PMLA.**

Way Forward

- **Legislative amendments:** Clarify “reasonable period” and strengthen safeguards for Article 22(1) compliance.
- **Stronger judicial oversight:** Ensure **ED exercises power with due process and respects individual rights.**
- **Public discourse:** Continue open discussions on balancing crime control and fundamental rights in the PMLA context.

Prevention of Money Laundering Act (2002) (PMLA):

- It combats money laundering, which is the process of converting illegally obtained money into seemingly legitimate funds.
- The PMLA Amendment Act, 2019 broadens the existing powers of the ED under the PMLA provisions – by bringing Sections 17 and 18 at par with Section 19 – where there is no pre-condition to forward a report under Section 157 of CrPC or to seek warrants from the Court for making an arrest.
- The Ministry of Finance issued a notification in 2023, to amend the Prevention of Money Laundering (Maintenance of Records) Rules, 2005 (“Rules”), to enhance the clarity and stringency of money laundering prevention efforts.
- **Key Provisions:**
 - **Definition of Money Laundering:** The Act broadly defines money laundering as acquiring, possessing, holding, transferring, using, or dealing in property derived from or involved in any predicate offense.
 - **Predicate Offenses:** The PMLA lists several predicate offenses, including drug trafficking, corruption, terrorism, and tax evasion, that generate proceeds susceptible to laundering.
 - **Reporting Obligations:** The Act mandates certain financial institutions and businesses to report suspicious transactions exceeding a specific threshold to the Financial Intelligence Unit (FIU).
 - **KYC Norms:** Regulated entities are required to conduct thorough Customer Due Diligence to verify the identity and source of funds of their clients.
 - **Power to Investigate and Search:** The ED, the primary agency responsible for enforcing the PMLA, has extensive powers to investigate suspected money laundering cases, search premises, and seize assets.
 - **Confiscation of Assets:** The Act allows the authorities to confiscate the proceeds of crime even if the predicate offense remains unproven.
 - **Adjudication and Penalties:** Special courts are designated to handle PMLA cases, and convicted individuals face imprisonment ranging from 3 to 7 years and fines.

8.4. META, GOOGLE MAY LOCK HORNS OVER AGE-GATING

Context

Recently, social media giants **Google and Meta** have approached Age-gating for young internet users in India.

Key Points

- **Meta proposes app-store-level age verification:** This approach would require users to confirm their age once during app download.
- **Google opposes app-store-level solution:** Google argues that companies should be responsible for implementing their age verification solutions.
- **Indian government seeking “risk-based” framework:** The government is considering multiple options for age verification, including app-store-level checks, self-declaration, and parental consent.
- **DPDP Act:** It mandates parental consent for processing data of **children under 18.**
- **Executive rules for DPDP Act pending:** The government is expected to issue detailed rules for implementing the DPDP Act soon.

- Age verification tools need to address three factors: User age, parent identification, and parent-child relationship verification.

Digital Personal Data Protection Act (DPDP Act)

- It is a crucial piece of legislation in India, aimed at protecting the privacy of individuals in the digital age.
- Enacted in August 2023, this Act regulates the collection, storage, use, and transfer of personal data by entities operating within India.
- **Key Features:**
 - Defines personal data
 - Empowers individuals
 - Requires consent
 - Imposes obligations on Data Fiduciaries
 - Regulates data transfer

- Establishes a Data Protection Authority

Applications of Meta Platforms

- **Social networking:** Connecting with friends, family, and communities through Facebook, Instagram, and WhatsApp.
- **Sharing information and news:** Discovering news and updates from trusted sources and friends.
- **Entertainment:** Watching videos, playing games, and engaging with creators.
- **Commerce:** Buying and selling products and services directly within the platforms.
- **Business and marketing:** Reaching new customers and promoting products and services.

Examples of Meta Platforms applications

- Posting photos and videos on Instagram.
- Sending messages and making calls through WhatsApp.
- Joining groups and participating in discussions on Facebook.
- Shopping for products and services on Facebook Marketplace.
- Creating marketing campaigns to target specific audiences on the Meta platforms.

Meta Platforms

- "Meta" refers to the company formerly known as Facebook, which rebranded in 2021.
- The company now encompasses Facebook, Instagram, WhatsApp, and other platforms, and focuses on building the metaverse, a virtual world that integrates social connection, gaming, and virtual reality.

Challenges of Meta Platforms

- **Social**
 - **Data privacy concerns:** Public scrutiny over data collection, usage, and potential breaches.
 - **Content moderation:** Balancing freedom of expression with curbing harmful content like **hate speech and misinformation**.
 - **Addiction and mental health:** Concerns about app addiction and negative impacts on mental health, especially among young users.
 - **Social polarization:** Potential for platforms to amplify echo

chambers and contribute to societal division.

- **Economic**
 - **Anti-trust concerns:** Scrutiny over market dominance and potential anti-competitive practices.
 - **Declining advertising revenue:** Saturation in the social media advertising market and competition from emerging platforms.
 - **Monetization of the metaverse:** Uncertainty surrounding sustainable revenue models for the metaverse.
 - **Economic impact of user privacy regulations:** Potential loss of revenue due to stricter data privacy regulations.
- **Political**
 - **Foreign interference and manipulation:** Potential for platforms to be used for foreign interference in elections and spreading misinformation.
 - **Censorship and political bias:** Accusations of political bias in content moderation and potential for censorship.
 - **Regulation of political speech:** Balancing freedom of expression with preventing harmful political content.
 - **Transparency and accountability:** Demand for greater transparency in platform algorithms and data use.

Technological

- **Maintaining platform stability and security:** Addressing issues like cyberattacks, data breaches, and fake accounts.
- **Content moderation at scale:** Developing effective and scalable tools for identifying and removing harmful content.
- **Building the metaverse:** Technological challenges in creating a seamless and immersive virtual world.
- **Managing data security and privacy in the metaverse:** Protecting user data and ensuring privacy in a virtual environment.

Way Forward

Bridging the **digital divide**, fostering a safe ecosystem with clear **regulations and policy backing**, and leveraging **animation, visual effects, and gaming** will unlock the metaverse's potential and ensure its inclusive and prosperous future.

8.5. INDIA CYBER THREAT REPORT

Context

Recently, according to the India Cyber Threat Report, every Android smartphone faces 3 attacks per month on average, out of which 39 percent are malware attacks.

Key Findings

- **Surat (15%) and Bengaluru (14%)** reported the highest number of malware attack detections.
- The Automobile Industry experienced the **highest number of detections**, followed by the **Government and Education sector**.
- **50% of detections** were associated with removable **media and network drives**.
- **25% of attacks** resulted from clicking on malicious **links in emails and websites**.
- **Android devices under attack:** An average of 3 attacks per month per device were observed in 2023.

- **Fake apps:** Millions downloaded malicious apps from the Google Play Store, including SpyLoan, fake apps, and HidAdd apps.
- **Attack types: Trojans and infectors** are the most common types of attacks.

Total Detections	Over 400 million detections
Rate of Threat Detection	Over 761 detections per minute
Android Detections	39% Malwares, 32% Adwares, and 29% Potentially Unwanted Apps
Crypto-jacking (emerging as a significant threat)	Over 5.28 million detections in a year
Top 3 Threat Hotspots (State-wise)	Telangana 15%, Tamil Nadu 14% & Delhi 11%

Data Security Council of India (DSCI)

- It is a not-for-profit, industry body on **data protection in India, setup by NASSCOM**, committed to making the cyberspace safe, secure and trusted by establishing best practices, standards and initiatives in cyber security and privacy.
- DSCI engages with governments and their agencies, regulators, industry sectors, industry associations and think tanks for policy advocacy, thought leadership, capacity building and outreach activities

Key Terms

- **Malware:** Short for malicious software, it refers to any intrusive software developed by cybercriminals to steal data and damage or destroy computers and computer systems.
- **Ransomware:** It is a type of malware that prevents or limits users from accessing their system, either by locking the system's screen or by locking the users' files until a ransom is paid.

Cybercrimes

- It refers to criminal activities where a **computer is either the target of the crime or is used as a tool to facilitate** the commission of an offense.
- Cybercrimes are categorized as **State subjects under 7th Schedule of the Constitution**.

Vulnerability of Cyberattacks in India

- **Android's dominance:** Android holds a significantly larger market share in India compared to iOS, making it a bigger target for attackers.
- **Open ecosystem:** Android's open-source nature, while offering flexibility, also creates security challenges.
- **Lack of cybersecurity awareness:** Basic cybersecurity practices like keeping software updated, using strong passwords, etc. aren't popularized.
- **Pirated software and apps:** Prevalence exposes users to vulnerabilities and malware embedded within.

- **Hardware fragmentation:** This makes it challenging for manufacturers to provide timely security updates.
- **Weaker regulatory framework:** India's cyber security regulations are still evolving.
- **Digital literacy gap:** The varying levels of digital literacy across different demographics make some users more susceptible.
- **Phishing scams and social engineering:** Attackers often target Indian users with localized phishing scams and social engineering tactics.

List of other types of cybercrimes

- | | |
|---|--|
| <ul style="list-style-type: none"> • Phishing • Identity theft • Cyberbullying • Denial-of-service attack • Security hacker • Cyberstalking • Botnet | <ul style="list-style-type: none"> • Computer virus • Man-in-the-middle attack • Crypto jacking • Software piracy • Internet fraud • Data breaches |
|---|--|

Indian initiatives

- **National Cyber Security Policy (2013):** Vision for a secure and resilient cyberspace.
- **CERT-In:** National agency responsible for responding to cyberattacks.
- **National Cyber Forensic Lab:** Initial cyber forensic support to Investigating Officers from State/UT Police.
- **Cyber Surakshit Bharat:** Strengthen India's cybersecurity ecosystem and promote digital awareness.
- **National Critical Information Infrastructure Protection Center (NCIIPC):** Government agency for protecting India's critical infrastructure.
- **Appointment of Information Security Officers (ISOs):** Mandated in government organizations to oversee their cybersecurity programs.
- **Personal Data Protection Bill:** Currently under consideration by the Indian Parliament, it aims to protect the personal data of Indian citizens.
- **Cyber Swachhta Kendra:** Provides free tools and services to help individuals and organizations protect their systems.

Way Forward

- **Evolving defenses:** Invest in AI-powered solutions and threat intelligence sharing.
- **User awareness:** Educate users about phishing, malicious apps, and safe online practices.
- **Targeted protection:** Prioritize vulnerable sectors like auto, government, and education with tailored security solutions and stricter regulations.

9. SOCIAL ISSUES

9.1. NATIONAL MULTIDIMENSIONAL POVERTY INDEX (MPI)

Context

Recently the National Multidimensional Poverty Index (MPI) report for 2023 was released by NITI AAYOG.

About

- NITI Aayog offers comprehensive estimates of multidimensional poverty, **covering 36 States & Union Territories and 707 administrative districts.**
- The report is based on the data of the **5th round of the National Family Health Survey (NFHS-5) conducted between 2019-21.**

Key highlights of National MPI Report 2023

- Significant reduction in Multidimensional Poverty:** 135 million individuals escaped multidimensional poverty between 2015-16 and 2019-21. India's national MPI value nearly halved, decreasing from 24.85% to 14.96%.
- Positive impact of government interventions:** Progress in nutrition, years of schooling, sanitation, and cooking fuel contributed to reducing the MPI value.
- Intensity of poverty improvement:** The Intensity of Poverty, measuring average deprivation, improved from 47.14% to 44.39%.
- Disparities Across Rural and Urban Areas:** Rural areas experienced a faster reduction in MPI value compared to urban areas. The proportion of multidimensional poor in rural areas: is 19.28%, urban areas: is 5.27%.
- Progress across states:** Uttar Pradesh, Bihar, Madhya Pradesh, Odisha, and Rajasthan recorded the steepest decline in the number of MPI poor.
- Fastest Absolute Reduction in MPI:** Bihar showed the fastest reduction in MPI value in absolute terms. Uttar Pradesh had the most significant number of people escaping multidimensional poverty (3.43 crore).
- District-level Analysis:** Disaggregated estimates at the district level showed the most rapid reduction in MPI in districts of Madhya Pradesh, Gujarat, Uttar Pradesh, and Rajasthan.

National Multidimensional Poverty Index (National MPI)

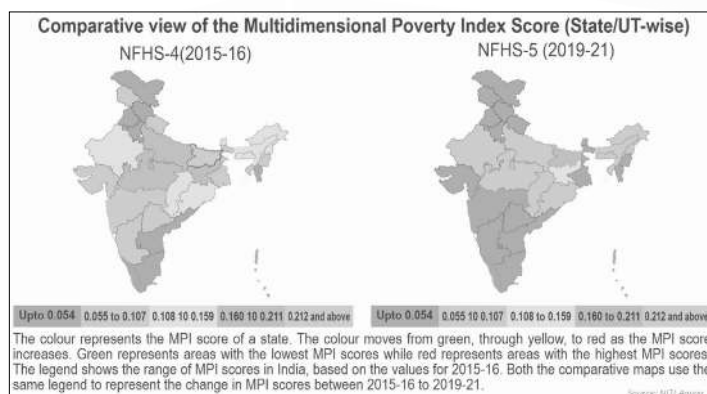
- Initiative by NITI Aayog:** It is an indigenized index developed by NITI Aayog to monitor States and Union Territories (UTs) in addressing multidimensional poverty.

Dimensions of the National MPI:

Dimension	Indicators	Global MPI	National MPI
Health	Nutrition	Yes	Yes
	Child mortality	Yes	Yes
	Maternal mortality	No	Yes
Education	Years of schooling	Yes	Yes
	School attendance	Yes	Yes
	Learning Outcomes	No	Yes
Living standard	Cooking fuel	Yes	Yes
	Sanitation	Yes	Yes
	Drinking water	Yes	Yes
	Electricity	Yes	Yes
	Assets	Yes	Yes
	Floor	Yes	Yes
	Housing	No	Yes
	Bank account	No	Yes

Challenges in India

- Data reliability and source concerns:** Reliance on National Family Health Survey (NFHS) 4 and 5 data for MPI estimation raises questions about reliability, especially considering the controversies surrounding NFHS 5.
- Impact of COVID-19 pandemic:** The MPI estimates do not fully account for the severe economic impact of the COVID-19 pandemic in 2020-21, including loss of livelihoods, reverse migration, and disruptions in health and education services.
- Rural-Urban dynamics:** While urbanization is associated with higher MPI, the impact is less than proportionate, potentially due to reverse migration during the pandemic. Understanding rural-urban dynamics is crucial for accurate poverty assessments.
- Education and health expenditure decline:** State-level decline in educational expenditure and health expenditure raises concerns as education spending correlates with lower MPI.



Government measures

- **Poshan Abhiyan:** Reduce deprivations in health, particularly addressing issues related to nutrition.
- **Anaemia Mukh Bharat:** Combat and reduce instances of anemia, contributing to improved health outcomes.
- **Swachh Bharat Mission (SBM):** Enhanced sanitation facilities nationwide, resulting in a swift 21.8 percentage points improvement in sanitation deprivations.
- **Jal Jeevan Mission (JJM):** Improve access to clean drinking water, contributing to the overall reduction in multidimensional poverty.
- **Pradhan Mantri Ujjwala Yojana (PMUY):** Provide subsidized cooking fuel to households, leading to a significant 14.6 percentage points improvement in cooking fuel deprivations.
- **Saubhagya:** Ensure electrification of households,

contributing to low deprivation rates in electricity access.

- **Pradhan Mantri Jan Dhan Yojana (PMJDY):** Promote financial inclusion by increasing access to bank accounts, aligning with the broader goal of poverty reduction and the SDG target.

Achievements

- **State-wise progress:** Uttar Pradesh recorded the highest decline, with 3.43 crore people escaping poverty, followed by Bihar and Madhya Pradesh.
- **Sectoral contributors:** Improvements in nutrition, schooling, sanitation, and cooking fuel played pivotal roles in driving down poverty levels.
- **SDG target achievement:** India is on track to achieve SDG Target 1.2, aiming to reduce multidimensional poverty by at least half, well before the 2030 deadline.

9.2. MENTAL HEALTH IN INDIA

Context

Recently, Netflix's Docudrama showed how social media giants, led by Meta, manipulate human psychology and biology to influence how we behave.

About

- The effect on children was even more appalling, highlighted by a 14-year-old girl's suicide in the UK, apparently due to prolonged exposure to content about suicide and self-injury on Instagram.
- US President Joe Biden deemed this important enough to include the negative mental-health effects of social media on young users.

About Mental Health in India

- Mental health is an integral part of health; it is more than the absence of mental illnesses.
- It is the foundation for the well-being and effective functioning of individuals. It includes mental well-being, prevention of mental disorders, treatment, and rehabilitation.
- **WHO estimates that the burden of mental health problems in India is 2443 disability-adjusted life years (DALYs) per 10000 populations; the age-adjusted suicide rate per 100000 population is 21.1.**
 - WHO has labelled India as the world's 'most depressing country'.

Issues related to mental healthcare In India

- **Lack of sensitivity:** People with any kind of mental health issues are often tagged as 'lunatics' by society.
- **Lack of access, affordability, and awareness:** The National Mental Health Survey (NMHS), 2015-16 found that nearly 80% of those suffering from mental disorders did not receive treatment for over a year.

- This survey also identified **large treatment gaps in mental healthcare, ranging from 28% to 83% across different mental disorders** (National Institute of Mental Health and Neurosciences (NIMHANS), 2016).
- **The stigma around mental health issues:** This leads to a vicious cycle of shame, suffering, and isolation of the patients.
- **Lack of state services and insurance coverage:** Results in most expenses on treatment when sought to be out-of-pocket expenses, thus worsening the economic strain on the poor and vulnerable.
- **Economic burden:** NMHS (2015-16) revealed that the median **out-of-pocket expenditure by families on treatment and travel to access care was Rs. 1,000-1,500 per month.**
 - **WHO estimates the economic loss to India on account of mental health disorders to be US\$ 1.03 trillion.**

Government measures

- To address the burden of mental disorders, the Government of India is implementing the **National Mental Health Program (NMHP) since 1982.**
 - Establishment of Centres of Excellence and strengthening/establishment of Postgraduate (PG) Departments in mental health specialties.
 - To generate awareness among the masses about mental illnesses Information, Education and Communication (IEC) activities are an integral part of the NMHP.
- The **Mental Health Policy, of 2014** upholds a participatory and rights-based approach to quality service provisions.

- The **Mental Healthcare Act, of 2017** provides the legal framework for providing services to protect, promote and fulfill the rights of people with mental illnesses.
 - These are in line with the **United Nations Convention on the Rights of People with Disabilities (UNCRPD)**.
- **Mental Healthcare Act, 2017(MHA):** Significant provisions of MHA, 2017:
 - **Mandatory provisions:** To establish a State Mental Health

Authority and Mental Health Review Boards.

- **Section 5 of the Act** states that people are empowered to make advance directives and also nominate for themselves.
- **Section 19 of the Act** states that the government was responsible for creating opportunities to access less restrictive options such as sheltered accommodation, halfway homes, etc.

9.3. SUSTAINABLE URBANISATION

Context

Recently, World Cities Day supports the Sustainable Development Goals of the United Nations for the development of sustainable cities and urbanization.

Understanding Sustainable Urbanisation

- Sustainable urban development is a complex issue that **involves balancing the needs of a growing population with the preservation of natural resources** and the environment.

Global urbanization trends

- **Historical perspective:** In 1901, only 11.4% of the Indian population resided in urban areas, contrasting with the **estimated projection of 40% urban population by 2025 according to UNDESA**.
- **Current urbanization:** The world is experiencing rapid urbanization, with 4.2 billion people, equivalent to 55% of the global population, residing in urban areas.
- **Future projections:** UNFPA predicts that by 2030, this urban population will exceed 5 billion, and by 2050, 68% of the world's inhabitants will be living in cities.
- **Economic significance:** Cities serve as vital economic hubs, contributing more than 80% to the global gross national.
- **Sustainable urbanization:** Despite the urbanization trend, the present urban development often falls short in terms of sustainable city concepts, necessitating a focus on sustainability.

causing problems like burning eyes, throat irritation, respiratory issues, and cardiovascular diseases.

- 39 out of the 50 most polluted cities globally are in India, with an average Indian losing 5.3 years of life expectancy due to pollution, and Delhi residents losing 11.9 years.
- Expansion of 'grey' infrastructure, increased vehicular emissions, and construction activities contribute to pollution in Indian cities.

Significance of sustainable urbanization

- **Ensuring access to clean water:** Sustainable urbanization addresses water scarcity challenges, vital for urban areas.
- **Promoting affordable housing:** Equitable land management through sustainable planning aids affordable housing initiatives.
- **Effective waste management:** Sustainable planning addresses the need for better waste treatment in fast-growing cities.
- **Enhanced transportation:** Eco-friendly public transport solutions are a key aspect of sustainable urban planning.
- **Equitable resource allocation:** Sustainable planning promotes fair distribution of resources and affordable services.
- **Environmental sustainability:** It contributes to creating eco-friendly environments and disaster management.

Challenges in Indian urban development

- Indian urban development has traditionally focused on real estate, road expansion, and private vehicle usage, leading to pollution and traffic congestion.
- Motorized transport alone accounts for 60% of urban pollution.
- Urban commons, green areas, and water bodies have shrunk while 'grey' infrastructure expanded.
- Automobile market growth exacerbates urban pollution issues.
- Construction activities, which contribute to 10% of air pollution in some cities, lack effective monitoring.
- **Pollution crisis:**
 - Air pollution severely impacts life expectancy and health,

Government measures

- **Atal Mission for Urban Rejuvenation and Urban Transformation (AMRUT):** To provide basic services and infrastructure in urban areas for a better quality of life.
- **Pradhan Mantri Awas Yojana-Urban (PMAY-U):** To provide affordable housing for all urban residents by 2022.
- **Climate Smart Cities Assessment Framework 2.0:** To assess and promote climate-resilient and sustainable practices in cities.
- **TULIP-The Urban Learning Internship Program:** To provide opportunities for students to gain practical experience in urban planning and development.

- **Atmanirbhar Bharat Abhiyan (Self-Reliant India):** To promote self-reliance and economic growth, which includes initiatives related to urban development.

Way forward

- **Organized urban planning:** Green Infrastructure; Mixed-Use Spaces; Alternative Energy; Public-Private Partnerships
- **Urban employment guarantee:** Similar to MGNREGA; the

Indira Gandhi Scheme.

- **Green Transport:** Rethinking Public Transport; E-Buses; Bus Corridors; Bus Rapid Transit
- **Formalization of the informal economy:** Migrant Data; Unorganised Worker Index Card
- **Democratization of sustainable development:** Shift to Sustainable Focus; Citizen Participation; Participative Budgeting; Sustainability Impact Assessments.

9.4. CARDIOVASCULAR DISEASES (CVDS)

Context

India contributes at least one-fifth of the 17.9 million cardiovascular disease (CVD)-related deaths worldwide, particularly among younger people, according to the World Health Organization (WHO).

India's stand

- Cardiovascular diseases (CVDs) are the **leading cause of death globally**, taking an estimated **17.9 million lives each year**.
- **The National Family Health Survey-5 (2019-2021)** published in **The Lancet Regional Health-Southeast Asia** indicated that **18.3 percent** of the country's population has hypertension (high blood pressure).
- **The 2017-18 National NCD (Non-communicable Diseases) Monitoring Survey (NNMS)** conducted by the **Indian Council of Medical Research (ICMR)** among the 18-69 years age group revealed a higher rate of Cardiovascular diseases - 28.5 percent.

Cardiovascular Diseases (CVDs)

- CVDs are a group of disorders of the heart and blood vessels and include coronary heart disease, cerebrovascular disease, rheumatic heart disease, and other conditions.
- More than four out of five CVD deaths are due to heart attacks and strokes, and one-third of these deaths occur prematurely in people under 70 years of age.

- The most recent **Global Burden of Disease study** says India has a death rate of **272 per 1 lakh** people due to CVDs, higher than the global average of 235.
- According to the latest data from the **National Crime Records Bureau (NCRB)**, deaths due to cardiac arrests saw a 12.5% rise, from 28,413 in 2021 to 32,457 in 2022.
 - **NCRB data** also put the sudden deaths at 56,450 for 2022, up from 50,734 in 2021.

Risk Factors

- The most important **behavioral risk factors** of heart disease and stroke are unhealthy diet, physical inactivity, tobacco use, and alcohol consumption.
- **The effects of behavioral risk factors** may show up in individuals as intermediate risk factors such as raised blood pressure raised blood glucose, raised blood lipids, and obesity.

Some suggestions

- Cardiac arrest deaths could be avoided if a patient receives timely and essential medical assistance, such as **Cardiopulmonary Resuscitation (CPR)**, a life-saving technique that's useful when someone's breathing or heartbeat has stopped.
- A recent **Lancet Commission study** mentioned that India needs automated external defibrillators (AEDs), portable device that delivers an electric shock to the heart when it detects abnormal rhythm and changes it to normal, in public places, and impart basic training to the public on their use.
- **Immediate CPR and AED use** can double or triple the person's chance of survival.

Steps taken by the Government

- **The National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)** is being implemented under the **National Health Mission (NHM)**.
- **Affordable Medicines and Reliable Implants for Treatment (AMRIT)** Deendayal outlets have been opened at 159 Institutions/Hospitals to make available Cancer and Cardiovascular Diseases drugs and implants at discounted prices to the patients.
- **ST-Elevation Myocardial Infarction (STEMI) Project:** The Maharashtra government launched the STEMI program recognized by NHM in 2021 to enable rapid diagnosis of heart disease.
- **Awareness:** The National Board of Examinations in Medical Studies (NBEMS), an autonomous body under the Ministry of Health and Family Welfare, recently held a nationwide awareness program on CPR.

9.5. CANCER IN INDIA

Context

Approximately 20 lakh Indians will be diagnosed with cancer by the year 2040, according to one estimate.

About the Cancer

- Cancer is a **condition characterized by the uncontrolled growth and dissemination of certain cells within the body.**
- It has the potential to originate in virtually any part of the human body, a complex organism composed of trillions of cells.
- Under normal circumstances, human cells undergo growth and replication through a regulated mechanism known as cell division, generating new cells to meet the body's requirements.

Causes of cancer

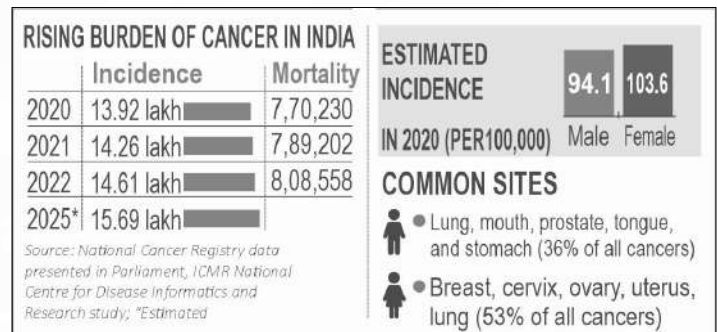
- **Genetic factors:** Some individuals inherit genetic mutations from their parents that increase their susceptibility to certain types of cancer.
 - These inherited mutations can be present in genes involved in cell growth, DNA repair, and tumor suppression.
- **Environmental exposures**
 - **Carcinogens:** Carcinogens can be found in various environments and include chemicals, pollutants, and radiation. Examples include asbestos, benzene, etc.
- **Lifestyle choices**
 - **Tobacco use:** Smoking and the use of smokeless tobacco are major contributors to various cancers, especially lung, mouth, throat, and pancreatic cancer.
 - **Alcohol consumption:** Excessive alcohol consumption is linked to an elevated risk of liver, breast, oesophageal, and other cancers.
- **Viral infections:** Some viral infections are linked to an increased risk of cancer. Examples include human papillomavirus (HPV) and cervical cancer, hepatitis B and C viruses liver cancer, and certain lymphomas.
- **Radiation exposure:** Exposure to ionizing radiation, whether from medical sources (E.g., X-rays) or environmental sources, can increase the risk of cancer.

according to an ICMR study using data from population-based cancer registries.

- The incidence of cancer is higher among women — 103.6 per 100,000 in 2020 compared to 94.1 among men.

Challenges

- **Inadequate health infrastructure:** The healthcare infrastructure for cancer care is often insufficient, particularly in rural and remote areas.
- Vacancy of ~2 to 9% female Auxiliary Nurse and Midwife (ANMs) at Health and Wellness Centres (HWCs) . **Low penetration of radiotherapy treatment (RT)** facilities in India with 0.4 RT per million against the WHO norm of 1 RT per million.
- **Implementation issues:** Gaps in implementation of the **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS)** program and lack of adequate workforce, technology, or equipment to enable specialists at **Community Health centres (CHCs) and District hospitals (DH)** to make a diagnosis.
 - As part of a survey done by GoI, 27% of CHCs and 13% of DHs had not implemented NPCDCS till 2017-2018.
- Long-pending dues of hospitals and empanelled under PM-JAY make it unsustainable for these hospitals to continue offering cancer treatment.
- Lack of comprehensive insurance coverage.



Disease burden In India

- According to the 2020 WHO ranking on cancer burden, India ranks at the third position after China and the US, respectively, in terms of new yearly cancer incidence being reported.
- An estimated 14.6 lakh new cancer cases were detected in 2022, up from 14.2 lakh in 2021 and 13.9 lakh in 2020, as per data from the National Cancer Registry of the Indian Council of Medical Research (ICMR).
- One in nine Indians will develop cancer during their lifetime,

National Initiatives

- **The National Cancer Control Programme (NCCP)** was launched to combat cancer comprehensively. It focuses on prevention, early detection, diagnosis, treatment, palliative care, and rehabilitation.
- **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases, and Stroke (NPCDCS):**
 - It aims to prevent and control major non-communicable diseases, including cancer.

- **National Cancer Registry Programme (1982):** NCRP, under the Indian Council of Medical Research (ICMR), collects and maintains data on cancer incidence across the country.
- **National Cancer Grid (NCG):** NCG is a network of major cancer centers across India that collaborate to standardize cancer care and share best practices.
- **Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (PMJAY):** PMJAY provides financial protection for over 100 million families (10 crore) against catastrophic health expenses. This includes coverage for cancer treatment, making it more accessible and affordable.
- **The government has introduced a Production Linked Incentive (PLI) scheme for domestic manufacturing of oncology equipment and other medical devices** with offering incentive of 5% on incremental sales of goods manufactured in India.

Way forward

- Deploy female ANM/ staff nurse or female MO/CHO at each HWC so that women feel safe and confident while attending breast and cervical cancer screenings.
- Conduct effective roll-out of low-cost indigenous HPV vaccine 'Cervavac' through mass vaccination drives leveraging experience.
- Drawing learnings from the latest Arogya Setu and CoWIN experience and leveraging the ongoing initiatives under the National Digital Health Mission (NDHM).
- To create a single health identity (Health ID/ AB ID), implement a standard platform to undertake screening and track a patient till treatment is linked to the Health ID/ AB ID/Aadhar ID of the population.

9.6. FEMICIDE AT 20-YEAR PEAK ACROSS THE WORLD

Context

Recently the UN study titled “Gender-related killings of women and girls (femicide/feminicide)”, was jointly published by the United Nations Office on Drugs and Crime (UNODC) and UN Women.

About

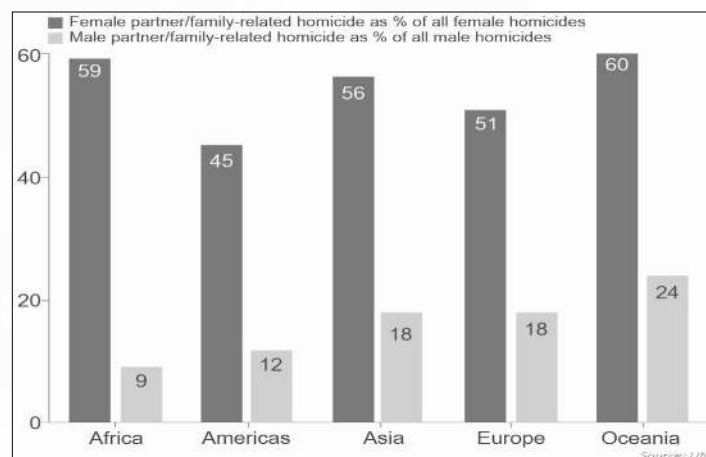
- About 88,900 women and girls were intentionally killed worldwide on the grounds of gender-related factors in 2022, according to a recent study from the United Nations Office on Drugs and Crime (UNODC).
- This is the highest number of such fatalities in a year, in the past 20 years.

A key finding of the study

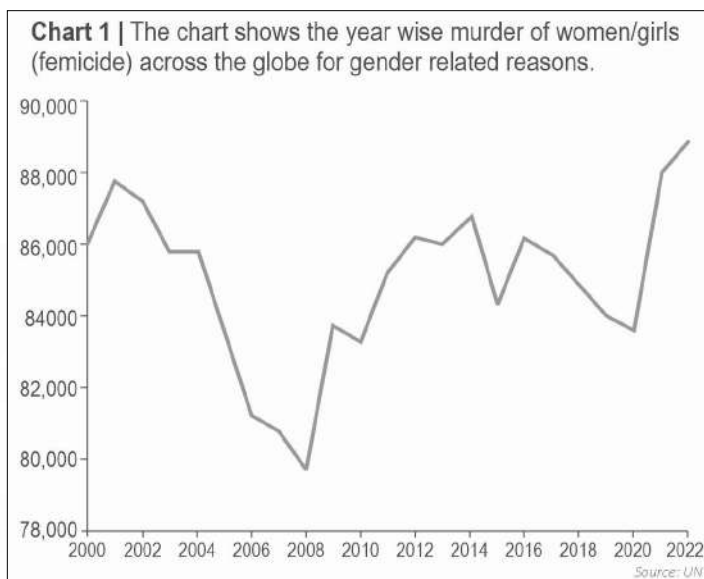
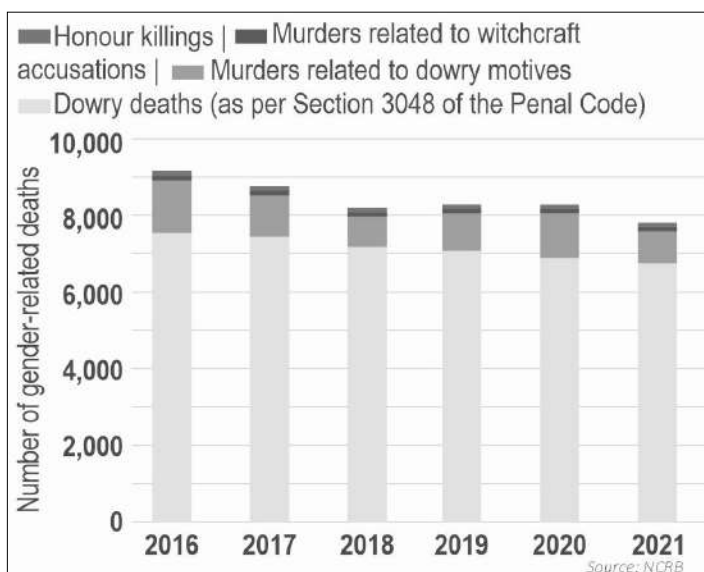
- **Men formed 80% of the total victims of homicide in 2022**, while women's share was 20%.
 - **Women** are more likely to be murdered by their **partners or someone known** to them.
 - This extends from the fact that women are subjected to **physical violence mostly from their immediate family members**.
 - **Only 12% of male homicide victims** were killed by persons known to them.
- **This trend of women being more vulnerable to gender-related violence by family is prevalent across the globe.**
 - Across all regions, the share of such homicides among women in which perpetrators are known was **higher than in the case of men**.
 - For instance, in over half the female homicides in **Europe**, the perpetrators are partners or related to the victims, whereas among men the share was only 18%.
 - In the **Americas**, too, the disparity showed (45% among women homicides and 12% among men homicides).
 - In 2022, there were about 20,000 female victims of intimate

partner/family-related homicide in Africa, the highest among continents.

- The African continent **exceeded Asia in femicides for the first time in 13 years**.
- **In Asia, 18,400 women were killed** by their families during the same period.



- **There was a general trend of reduction in gender-related killings of women** before 2021, though it increased drastically in 2021 and 2022, especially in Africa.
 - According to three national studies conducted in South Africa across 18 years, the female intimate partner homicide rate halved between 1999 and 2017.
 - But in recent years, the rate increased from 9 victims per 1 lakh women in 2019 to 12.7 victims per 1 lakh women at the end of 2022.



- **There has been a small decline in gender-based killings in India over the past decade.**
 - The killing of women due to **dowry-related reasons, accusations of witchcraft**, and other gender-related factors persists.
 - **Dowry has consistently been the leading cause**, while honor killings and murder related to witchcraft accusations, formed a small share too during this period.

Government Initiatives for Women's Safety

- **Nirbhaya Fund**
 - **Objective:** Dedicated funds for women's safety and security projects.
 - **Execution:** The Ministry of Women and Child Development is the nodal authority for appraising/recommending proposals/schemes under the Nirbhaya Fund.
- **Investigation Tracking System:**
 - **Tool Launch:** "Investigation Tracking System for Sexual Offences" launched by MHA.
 - **Purpose:** Monitor and track time-bound investigations in sexual assault cases.
- **Cyber Crime Management**
 - **Portal Launch:** Cyber-crime reporting portal introduced.

- **Capacity Building:** Cyber Crime Forensic Labs established; training imparted to personnel in cyber-crime resolution.
- **One Stop Centres and Women Helpline:**
 - **Objective:** Provide integrated support, assistance, and emergency response to women affected by violence.
- **Mahila Police Volunteers:**
 - **Engagement Initiative:** Mahila Police Volunteers act as intermediaries between police and the community.
 - **Facilitation:** Supports women in distress and strengthens community-police collaboration.

Way forward

- **Government's Role:** Urgent need for standardizing methods to identify and count femicides. Addressing institutionalized invisibility of gendered violence.
- **Multi-Faceted Approach:** Holistic Strategies Needed: Initiatives for education, awareness, and cultural shift. Stricter laws, law enforcement, and support services are crucial.
- **Justice Dharmadhikari Committee:** To prevent crime against women Govt. has constituted a committee under the chairmanship of retired Justice Shri. Chandrashekhar Dharmadhikari.

9.7. VIKSIT BHARAT @2047

Context

Recently, Prime Minister Narendra Modi launched the 'Viksit Bharat @2047: Voice of Youth' initiative.

About

- It's a platform for promoting youth involvement in drawing up national plans **for India's development by 2047**.
- The PM is supposed to address **vice-chancellors, heads, and faculty members of over 700 educational entities** in workshops nationwide.

- Workshops symbolize the initiation of the **Youth-Engagement Initiative**.

Participants

- Workshop includes **vice chancellors, heads of IITs, IITs, NITs, and autonomous colleges**.

- Both **public and private institutions** are actively involved in the initiative.

Strategic Insights

- Preliminary results show the need for government process **re-engineering and minimizing** duplication of work.
- The document will cover **trade, investment, technology, capital, and global engagement in research and development.**

Viksit Bharat @2047: Voice of Youth

- It aims to actively engage young people in formulating national plans and contribute towards the vision of a developed India by the year 2047, the 100th anniversary of its independence.

Key aspects of the initiative

- Platform for Youth Participation:** To share their ideas and suggestions for a developed India by 2047.
- Workshops across India:** Being organized at Raj Bhawans across the country.
- Focus on Youth Vision:** Aligns with Prime Minister Modi's vision of actively involving youth in shaping the nation's future. **The vision of "Viksit Bharat @2047"**
- Vision of "Viksit Bharat @2047":** Encompasses various aspects of development, including economic growth, social progress, environmental sustainability, and good governance.
- Goal of Developed Nation:** The aim is to make **India a developed nation by 2047**, marking a significant milestone in the country's history.
- Vision of \$30 Trillion Economy:** Preliminary estimates suggest India will become a \$30 trillion developed economy by 2047, showcasing substantial growth potential.

NITI Aayog's Role

- NITI Aayog's Role:** Facilitating the workshops and engaging the youth.
- Vision India@2047 document:** Outlines the strategy for India to emerge as a developed economy and is expected to be released in January 2024.
- Comprehensive Development Roadmap:** The Vision India@2047 document will address structural changes, reforms, streamlined government processes, and global engagement strategies to achieve the desired development goals.

Related Schemes

- NITI Aayog's Youth Policy 2022:** A comprehensive policy framework addressing various aspects of youth development, including education, employment, entrepreneurship, and healthcare.
- Skill India Mission:** Aims to train youth in various skills to enhance their employability and contribute to economic growth.
- Digital India Initiative:** Promotes digital literacy and access to technology among youth, empowering them to participate in the digital economy.
- Stand-Up India Scheme:** Provides financial and other support to young entrepreneurs from marginalized communities.
- Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** Offers skill training programs to unemployed youth across various sectors.
- Rashtriya Madhyamik Shiksha Abhiyan (RMSA):** Aims to improve access to quality secondary education for all students, including youth.

9.8. RESERVATION IN THE PRIVATE SECTOR

Context

Recently the Punjab and Haryana High Court invalidated the Haryana State Employment of Local Candidates Act, 2020, which guaranteed 75% reservation for locals in private sector jobs.

Overview of Haryana State Employment of Local Candidates Act 2020

- Enactment Law (2020):** It mandated the employers to reserve 75% of jobs paying a monthly salary below 30,000 rupees for residents.
- Applicability:** It applies to all private entities, including trusts, companies, and LLP, and also covers any entity employing 10 or more persons for manufacturing/services.
- Definition of 'Local Candidate':** Domiciled in Haryana for the past five years. Mandatory registration on a designated portal for availing benefits.
- Penalties:** Companies seek exemption for not finding local

candidates with desired skill and their violations range from 10,000 to 2 lac rupees.

Legal challenges of law

- Basis of challenge:** Industry associations challenged the law's validity, citing violations of constitutional articles. Alleged infringement of Article 19 (freedom of residence and profession) and Article 14 (equality before the law).
- Contentions and defense:** The state argued the law aimed to protect the livelihood of domiciled people. Invoked Article 16(4) of the Constitution, empowering the State to create reservations for underrepresented classes.

- **Similar laws in other states:** Maharashtra, Karnataka, Andhra Pradesh, and Madhya Pradesh have enacted laws providing reservations in the private sector. Andhra Pradesh's law faced constitutional challenges.

LOCAL PREFERENCE	
Maharashtra Private sector to employ 80% domiciled workers (Maha residents for more than 15 years); Status: Planned, not implemented	Status: 70% quota applied, children of MP' at planning stage
Haryana Ordinance mandating 75% quota for locals in private sector jobs; Status: Planned, not implemented	Karnataka Pvt industries to give priority to Kannadigas in clerical and shop-floor jobs; Status: Rules amended, follow-up law not passed yet
Madhya Pradesh 70% quota in pvt sector jobs for locals; only 'children of MP' to be eligible for state govt jobs;	Andhra Pradesh Up to 75% quota for locals in govt and pvt sector; Status: Law passed, yet to be implemented

Source: Times of India

High Court's ruling and reasons for quashing

- **Unconstitutionality and discrimination:** The Court declared the law unconstitutional, impairing the right to carry on an occupation under Article 19(1)(g). Emphasized discrimination against individuals from other states, creating artificial barriers.
- **Violation of constitutional provisions:** Article 35 prevents state legislatures from legislating on matters within the purview of Article 16(3). Sections 6 and 8 of the Act were deemed as promoting an 'Inspector Raj,' enhancing state control over private employers.

Advantages of job reservation in the private sector

- **Equality and equal protection:** Promotes equality by reserving jobs for the weakest sections of society. Aligns with the principle of Equal Protection of Law under Article 14.
- **Solution for unemployment:** Addresses unemployment challenges by providing job opportunities to locals. Considered a suitable solution amid stagnant job creation.
- **Boost the local economy:** Contribute to local hiring candidates led to the local economy by circulating earnings within the community.

- **Reduction in operation cost:** Reduces the relocation costs for companies and can lead to more competitive pricing of goods and services.
- **Improved productivity:** Local employees are likely to be more familiar with the language, culture, and business environment. Enhances productivity and efficiency in the workplace.

Disadvantages of job reservation in the private sector

- **Investor exodus risk:** This may trigger an exodus of investors, impacting sectors reliant on skilled manpower. Example: Haryana faced a 30% drop in investments due to the local reservation law.
- **Impact on existing industries:** Raises concerns about hindering the free movement of manpower, affecting existing industries. Potential shift of businesses from the state to other regions.
- **Talent crunch in specific sectors:** Imposing reservations on gig and platform companies could result in a severe talent shortage. Risks impeding the growth of industries relying on specialized skills.
- **Violation of the Constitution:** This may be against the constitutional guarantees of freedom of movement and employment. Contradicts Articles 14, 15, 16, and 19 that safeguard against discrimination based on birthplace.

Way forward

- **Legal review and amendment:** Conduct a comprehensive legal review and amend the law to address constitutional concerns.
- **Strategic implementation of reservation:** Implement the reservation policy in a manner that doesn't impede the free movement of labor across the country.
- **Focus on economic recovery:** Emphasize economic recovery as a means to address the concerns prompting Job for Locals Legislations (JRFL) and generate ample job opportunities.

9.9. 52ND REPORT OF THE PARLIAMENT STANDING COMMITTEE

Context

Recently, the Parliamentary Standing Committee on Labor, Textiles and Skill Development Committee suggested that there is a need for a uniform definition of 'child' under various laws in the country.

About

- According to the 52nd report of the Parliamentary Standing Committee on Labor, Textiles and Skill Development Committee tabled in the parliament, the panel found **ambiguity in the definition of child under various legislations.**
- **The implementation of the Policy has to go a long way toward achieving the objective of elimination of child labor as per commitments made by the country after the ratification of ILO conventions.**
 - To achieve the target stipulated in Sustainable Development Goal 8.7 to end all forms of child labor by 2025.

Different Definitions of “Child” under various legislations

- The term “child labor” is often defined as work that **deprives children of their childhood**, their potential, and their dignity, and that is harmful to physical and mental development.

Panel suggestions

- Guidelines:** The panel urged the **Labour Ministry to formulate suitable guidelines** for the utilization of the fund (collected as a fine from child labour employers).
- Increase Fine:** In addition to the **three/four times** increase in the amount of fine, some **stricter punishments** like cancellation of license, attachment of property, etc. also need to be incorporated.
- PENCIL Portal:** Functions of **DPS (District Project Societies)** about uploading information about the rescued child on **the PENCIL Portal**, for awareness generation, facilitating vocational training, conducting baseline surveys, etc. have not been assigned to anyone.
- POCSO:** Enforcing provisions in the Protection of Children from Sexual Offences Act, 2012 for action **against the police for not registering FIRs**.

Act/Scheme	Definition of child
• Child and Adolescent Labor (Prohibition and Regulation) Act, 1986 (CALPRA)	• Child' means a person who has not completed his fourteenth year of age or such age as may be specified in the Right of Children to Free and Compulsory Education Act, 2009, whichever is more.
• Right of Children to Free and Compulsory Education Act, 2009	• a male or female aged six to fourteen years.
• Minimum Wages Act, 1948	• a person who has not completed his fourteenth year of age.
• Juvenile Justice (Care and Protection of Children) Act, 2015	• a person who has not completed eighteen years of age.
• Rashtriya Kishore Swasthya Karyakaram	• adolescent is a person between 10-19 years.

10. PRACTICE MCQ'S

Q 1. Consider the following statements regarding Central Ground Water Board (CGWB):

1. It was established in 1972 by the Ministry of Jal Shakti.
2. Its authority stems from the Water (Prevention and Control of Pollution) Act, 1974.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q 2. Consider the following statements:

Statement-I: Disinformation is intentionally crafted falsehoods while fake news is fabricated information presented as genuine news.

Statement-II: India's Constitution upholds freedom of expression while permitting limitations to safeguard public order and curb hate speech.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement I and Statement II are correct and Statement II is the correct explanation for Statement I
- (b) Both Statement I and Statement II are correct and Statement II is not the correct explanation for Statement I
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

Q 3. Consider the following statements regarding the Pracheen Kala Kendra:

1. It was established by the Late Guru M.L. Koshar.
2. This prestigious organization is dedicated to promotion, preservation and dissemination of Indian classical arts.

Which of the above statements is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q 4. Consider the following:

1. Presence of Coriolis Force
2. Significant variations in vertical wind
3. Weak Low-Pressure systems
4. Upper-level Divergence

How many of the above is/are responsible for the formation of Tropical Cyclones?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Q 5. Consider the following statements:

1. Shield volcanoes are small, steep volcanoes that are formed by the accumulation of small fragments of lava that cool and harden in the air.
2. Cinder cones are large, broad volcanoes that are formed by the eruption of fluid lava.

Which of the above statements is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q 6. Consider the following statements regarding the Social Audit:

1. Audit Rules were prepared by the then Ministry of Rural Development in consultation with the Comptroller and Auditor General (CAG) of India.
2. Every Social Audit Unit is entitled to funds more than 1% of the MGNREGA expenditure incurred by the State in the previous year.
3. Madhya Pradesh is the only state to cover 100% gram panchayats.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 7. Consider the following statements regarding the National Centre for Coastal Research (NCCR) study:

1. The NCCR is an attached office of the Ministry of Earth Sciences.
2. One-third of India's coastline is vulnerable to erosion.
3. More than half of the beaches in Andhra Pradesh are vulnerable to erosion.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 8. Consider the following statements regarding the Jamun:

1. It is a Myrtaceae plant family tropical tree.
2. Jamun trees shed their leaves during winter season.
3. Fruit seed extracts have anti-cancerous properties.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 9. Consider the following statements regarding Intergovernmental Negotiating Committee (INC):

1. It was established under the United Nations Environment Programme.
2. It aims to develop an international legally binding instrument on plastic pollution, including in the marine environment.
3. It is an outcome of Earth Summit which was held in 1992 in Rio de Janeiro, Brazil.

Which of the above statements is/are correct?

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

Q 10. Consider the following statements regarding the Intangible Cultural Heritage List:

1. This year the United Nations Educational, Scientific and Cultural Organization (UNESCO) has included more than five inscriptions in the list of Intangible Cultural Heritage.
2. The latest addition of inscription from India in the ICH list is Durga Puja.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q 11. Consider the following pairs:

Sl. No.	Report	Published by
1	Goods Trade Barometer Report	UNODC
2	Global Risks Report	WEF
3	World Drug Report	WTO

How many pair(s) given above is/are correctly matched?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 12. Bhopal Gas Tragedy (1984) at the Union Carbide India Limited pesticide plant in Bhopal took place due to the leakage of:

- (a) Styrene gas
- (b) Carbon dioxide gas
- (c) Methyl isocyanate gas
- (d) Natural gas and oil

Q 13. Consider the following statements regarding Global Partnership on Artificial Intelligence (GPAI):

1. It was launched in 2019.
2. Its membership includes 28 countries and the EU.
3. It has 3 working groups: Responsible AI, Data Governance, and Future of Work.
4. Its Secretariat is hosted by the OECD.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Q 14. Consider the following statements regarding the Election commission of India (ECI):

1. The CEC holds the rank of a Chief Justice of India.
2. The ECI can appoint additional Election Commissioners beyond the authorized two.
3. Article 170 empowers the ECI to delimit state constituencies.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 15. Consider the following statements regarding the cardiovascular disease:

1. The top Non-Communicable Diseases (NCDs) causes of death were cardiovascular diseases.
2. The funds have been provided in NPCDCS Program under Flexible Pool for NCDs programme under NHM.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q 16. Consider the following statements regarding the 'Viksit Bharat @2047: Voice of Youth':

1. Viksit Bharat @2047 is the vision to make India a developed nation by 2047, the 100th year of independence.
2. This initiative will provide a platform to the youth of the country to contribute ideas.
3. The Ideas Portal related to Viksit Bharat has been launched.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 17. With reference to the recent clash between Google and Meta over age verification and consent management for young internet users in India, consider the following statements:

1. The DPDP Act mandates parental consent for processing data of children under 18.
2. Google favors app-store-level age verification, while Meta proposes individual platform-based age verification solutions.
3. The Indian government is considering a "risk-based" framework that may include multiple options for age verification, including self-declaration and parental consent.

How many of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 18. Consider the following statements regarding the Khirki Masjid:

1. It was built by Firoz Shah Tughluq.
2. The Masjid belongs to the Indo-Islamic style of Architecture.
3. The pillars and brackets within this structure show Greek influence.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 19. Consider the following statements regarding the Pilatus PC-7 Mk II:

1. It has a maximum speed of more than 500 km/h.
2. It can fly to a height of slightly more than 10,000 m.
3. Pilatus PC-7 Mk II aircraft are used for the second stage of cadet's basic training.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 20. Consider the following statements regarding the Millets:

1. India is the largest producer of millets in the world.
2. It accounts for 80% of Asia's production.
3. India's average yield of millets is also higher than the global average yield.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 21. Consider the following statements:

1. Corporate bonds are a form of debt financing issued to provide the ready cash for a particular project the company wants to undertake.
2. Debt financing instruments are preferable to equity financing because it is cheaper for the borrowing firm and does not entail giving up any ownership stake or control in the company.

Which of the statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q 22. Consider the following statements regarding the Global Multidimensional Poverty Index (MPI) 2023 Report:

1. According to the report thirty Percent of all poor people live in India.
2. Three out of every ten poor people in the South Asia region.

Which of the following statements given above is/are correct?

- (a) Only 1
- (b) Only 2
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Q 23. Consider the following features:

1. Entering a country with proper documentation.
2. Overstaying a visa.
3. Working without a work permit.

How many of the above is/are not included in the illegal migrations?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 24. Consider the following statements regarding the India-Sri Lanka relations:

1. India is Sri Lanka's largest trading partner, accounting for about 26% of its total imports in 2023.
2. India gifted a P-8I maritime patrol aircraft to Sri Lanka.
3. India is building a Cultural Centre in Jaffna to promote cultural exchange.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 25. Consider the following statements regarding the Small modular reactors (SMRs):

1. It is a coal-based thermal power.
2. SMRs have a power capacity of up to 300 MW(e) per unit, about 1/3rd of the generating capacity of traditional nuclear power reactors.
3. SMR can be factory-built unlike the conventional nuclear reactors.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

Q 26. Consider the following countries:

1. Angola
2. Mauritania
3. Mauritius
4. Mozambique
5. Niger

How many of the above-mentioned are Sub-Saharan African countries?

- (a) Only two
- (b) Only three
- (c) Only four
- (d) All five

Q 27. Consider the following statements regarding the Dogri Language:

1. Dogri has its own script which is closely related to the Sharada script.
2. This language is spoken in northern Hill regions.
3. Dogri language was initially included in the Constitution.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

PRACTICE MCQ'S

Q 28. Consider the following statements regarding the Global Cities Alliance:

1. GRCA is a unique alliance covering 275+ global river-cities in 11 countries.
2. This is global efforts toward river conservation and sustainable water management.
3. This is first of its kind alliance in the world.

How many of the above statements is/are correct?

- | | |
|---------------|-----------------------|
| (a) Only one | (b) Only two |
| (c) All three | (d) None of the above |

Q 29. Consider the following statements regarding the Food and Agriculture Organisation (FAO):

1. It is not a specialized agency of the United Nations.
2. Its goal is to achieve food security for all developing nations.
3. Its head quarter is in Paris.

How many of the above statements is/are correct?

- | | |
|---------------|-----------------------|
| (a) Only one | (b) Only two |
| (c) All three | (d) None of the above |

Q 30. Consider the following statements:

Statement I: The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has significantly reduced rural poverty in India by providing guaranteed employment to vulnerable households.

Statement II: The number of households demanding work under MGNREGS has steadily increased over the years, indicating its effectiveness in addressing unemployment and hardship in rural areas.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement I and Statement II are correct and Statement II is the correct explanation for Statement I
- (b) Both Statement I and Statement II are correct and Statement II is not the correct explanation for Statement I
- (c) Statement I is correct but Statement II is incorrect
- (d) Statement I is incorrect but Statement II is correct

Q 31. Consider the following statements which accurately reflect the current state of India's neighborhood diplomacy:

1. China's influence is waning in South Asia, creating an opportunity for India to solidify its leadership role.
2. India's internal challenges are the biggest impediment to its regional ambitions, overshadowing external factors.
3. Limited regional integration and historical rivalries primarily hinder effective cooperation among South Asian nations.
4. Myanmar's instability poses minimal threat to India's security and regional stability.

How many of the above statements is/are correct?

- | | |
|----------------|--------------|
| (a) Only one | (b) Only two |
| (c) Only three | (d) All four |

Q 32. Consider the following statements:

1. India gets southwest monsoon winds in the summers (formation of an intense low-pressure system over the Tibetan Plateau) and northeast monsoons during the winters (due to the high-pressure cells that are formed over the Siberian and Tibetan plateaus).
2. The onset of monsoons has been delayed off late and has also been affected by cyclones.

Which of the above is/are correct?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

Q 33. Which of the following is arranged correctly in North to South order?

- (a) Maldives-Seychelles-Mauritius-Reunion
- (b) Maldives-Reunion-Seychelles-Mauritius
- (c) Seychelles-Maldives-Mauritius-Reunion
- (d) Seychelles-Mauritius-Maldives-Reunion

Q 34. Consider the following statements

1. The Hydrographic Survey Agreement was signed between India and Maldives in 2017, during Prime Minister Narendra Modi's visit to the Maldives.
2. India has been officially informed by the Maldives government about its decision not to proceed with the hydrography agreement.

Which of the above is/are correct?

- | | |
|------------------|---------------------|
| (a) 1 only | (b) 2 only |
| (c) Both 1 and 2 | (d) Neither 1 nor 2 |

Q 35. Consider the following statements:

1. Chandrayaan-1 had the spacecraft was orbiting around the Moon at a height of 1000 km from the lunar surface.
2. Chandrayaan-2 failed when the Vikram lander lost communication.
3. Chandrayaan-3 was capable in safe landing and roving on the lunar surface.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 36. Consider the following:

1. Permafrost thawing
2. Wildfires
3. Rise in Global Water levels
4. Increased Volcanism

How many of the above is/are consequences of arctic amplification?

- (a) Only one (b) Only two
(c) Only three (d) All four

Q 37. Consider the following statements:

1. Arctic amplification worsens global warming and also fuels ocean acidification, harming marine life.
2. Rising temperatures disrupt freshwater ecosystems and marine life, impacting food security for Arctic communities.

Which of the above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 38. Consider the following pairs:

Country	Capital
1. Oman	Sana'a
2. Yemen	Muscat
3. Djibouti	Addis Ababa

How many of the pairs given above is/are correctly matched?

- (a) Only one (b) Only two
(c) All three (d) None

Q 39. Consider the following statements:

1. The Logistics Ease Across Different States (LEADS) 2023 report is published by NITI Aayog.
2. The LEADS is an indigenous data-driven index to assess logistics infrastructure, services, and human resources across all 36 States and UTs.

Which of the above statements is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 40. Consider the following pairs:

Article Body

1. 82 Delimitation Commission
2. 324 Finance Commission
3. 280 Election Commission of India

How many of the pairs given above is/are correct?

- (a) Only one
(b) Only two
(c) All three
(d) None

Q 41. Consider the following statements

1. Ransomware refers to any intrusive software developed by cybercriminals to steal data and damage or destroy computers and computer systems.
2. Malware prevents or limits users from accessing their system, either by locking the system's screen or by locking the users' files until a ransom is paid.

Which of the following statements is/are correct?

- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Q 42. Consider the following statements

1. Noma, also called the 'face of poverty', was common in the Western world in previous centuries.
2. Neglected tropical diseases (NTDs) refers to the death of body tissue due to a lack of blood flow or a serious bacterial infection.
3. Gangrenous Diseases are caused by a variety of pathogens, such as viruses, bacteria, protozoa, and parasitic worms (helminths).

How many of the above is/are correct?

- (a) Only one
(b) Only two
(c) All three
(d) None

Q 43. Consider the following about 'Variants of Interest' (VOI)

1. The Sahitya Akademi is an autonomous body under the Union Culture Ministry.
2. The Sahitya Akademi Award is dedicated to the promotion of literature in Indian languages.

Which of the following statements is/are correct?

- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

PRACTICE MCQ'S

Q 44. Consider the following statements

1. As per the Minimum Wages Act, 1948 vide its amendment in 1986, a 'Child' is defined as a person who has not completed eighteen years of age.
2. At the same time, the Juvenile Justice (Care and Protection of Children) Act, 2015 defines 'Child' as a person who has not completed his fourteenth year of age.
3. Under the Right of Children to Free and Compulsory Education Act, 2009, 'Child' means a male or female aged six to fourteen years.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 45. Consider the following regarding the International Monetary Fund

1. It was established in 1944 in the aftermath of the Great Depression of the 1930s.
2. The Global Financial Stability Report is published by the IMF.

Which of the following statements is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 46. Consider the following statements:

1. ASEAN India Trade in Goods Agreement (AITGA) is a Free Trade Agreement signed between India and the ten member states of ASEAN in 2009.
2. ASEAN was established with the signing of the Bangkok Declaration in 1967 by the ten member states of the grouping.

Which of the above statements is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 47. Consider the following about MGNREGS:

1. It is a Centrally-Sponsored Scheme under the Ministry of Rural Development.
2. The MGNREG Act mandates social audit of all works in gram panchayats.
3. Women participation in the scheme has the highest in 10 financial years.

How many of the above is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Q 48. Consider the following reports:

1. Levels and Trends in Child Mortality Report
2. Inequality Virus Report
3. Global Nutrition Report

How many of the above reports is/are released by WHO?

- (a) Only one (b) Only two
(c) All three (d) None

Q 49. Consider the following statements:

1. India is the third largest Renewable Energy producer across the world.
2. Hydro energy is the largest Installed Renewable Energy in India.

Which of the above given statements is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

Q 50. Consider the following statements:

1. UNHCR is a global organization that was formulated by the UNCEP in 1992 to guide the world's future about the environment and socio-economic development.
2. Recently, India rescued more than 100 Rohingya refugees as India is a signatory to the 1951 United Nations Refugee Convention.
3. India formulated a comprehensive refugee law during COVID-19 in order various refugees across the world.

How many of the above statements is/are correct?

- (a) Only one (b) Only two
(c) All three (d) None

ANSWER KEY

1. c	6. a	11. a	16. c	21. c	26. d	31. a	36. c	41. d	46. a
2. a	7. b	12. c	17. b	22. d	27. b	32. c	37. c	42. a	47. c
3. c	8. a	13. b	18. a	23. a	28. c	33. a	38. d	43. c	48. a
4. c	9. a	14. d	19. a	24. b	29. a	34. b	39. b	44. a	49. a
5. d	10. a	15. c	20. c	25. b	30. b	35. b	40. a	45. c	50. d

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