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TABLE OF CONTENT

1. Polity and Governance 1-9

1.1. Supreme Court allows surrogacy 1
1.2. Anti-defection law 2
1.3. Death Penalty in India 3
1.4. Federal Issues with the Office of the Governor 4
1.5. Issues in Local Self Governance Institutions 5
1.6. Parliamentary Ethics and Privileges 6
1.7. Parties' Unknown Income Rises 7
1.8. Review Petition 9

2. INTERNATIONAL RELATIONS 10-23

2.1. India-Australia: 2+2 Dialogue 10
2.2. India-UK FTA 11
2.3. India-Qatar Relations 12
2.4. India-Bangladesh Relations 13
2.5. India-Bhutan Relations 15
2.6. War in Myanmar 16
2.7. US-China Ties Revamp 17
2.8. 10th ASEAN Defence Ministers' Meeting 18
2.9. Indo-Pacific Economic Framework (IPEF) 19
2.10. UNSC Resolution for Urgent Humanitarian Pauses and Corridors in Gaza 20
2.11. Legality of using White Phosphorus 21
2.12. AI Safety Summit 22

3. Economy 24-37

3.1. Open Market Operations (OMOs) 24
3.2. RBI to regulate Cross-border Payment Facilitators 24
3.3. RBI Tightens norms for Unsecured Retail Loans 26
3.4. National Company Law Appellate Tribunal (NCLAT) 27
3.5. Indian Companies can now list on Foreign Stock Exchanges directly 28
3.6. Social Stock Exchange lists Unnati 28
3.7. Active and Passive Equity Funds 29
3.8. Penny Drop Verification 30
3.9. Food Subsidy 31
3.10. India among top countries with high income, wealth inequality: UNDP report 32
3.11. SEZ and DESH Bill 34
3.12. Technical Textiles in India 35
3.13. Indian Patent Filing Growth 36

4. HISTORY, ART AND CULTURE 38-43

4.1. Mandalam-Makaravilakku Pilgrim Season 38
4.2. Balban's Tomb 38
4.3. Janjaatiya Gaurav Diwas 40
4.4. Amrit Vatika 41
4.5. Keraleeyam Festival 42
4.6. New entrants to UNESCO Creative Cities Network (UCCN) 43

5. ENVIRONMENT, GEOGRAPHY AND DISASTER MANAGEMENT 44-69

5.1. ENVIRONMENT 44-57

5.1.1. Adaptation Gap Report 44
5.1.2. Air Pollution 45
5.1.3. Geoengineering- Cloud Seeding/Artificial Rain 47
5.1.4. Carbon Border Adjustment Mechanism (CBAM) 48
5.1.5. Noise Pollution 49
5.1.6. National Mission for Clean Ganga (NMCG) 50
5.1.7. Reference Fuel Production 51
5.1.8. World Biosphere Reserve Day 52
5.1.9. Migratory Birds 54
5.1.10. One year of Project Cheetah 55
5.1.11. Sunflower Sea Starfish Face Extinction 57

5.2. GEOGRAPHY 58-64

5.2.1. Partial Lunar Eclipse 58
5.2.2. Normal Monsoon 59
5.2.3. Critical Minerals 61
5.2.4. Rare Earth (RE) resources: Tantalum 62
5.2.5. Launch of Bharat Organics, a brand of NCOL 63

5.3. DISASTER MANAGMENT 65-69

5.3.1. Earthquakes 65
5.3.2. Urban Flooding 67
5.3.3. Uttrakashi Tunnel Collapse 69

6. SCIENCE AND TECHNOLOGY 70-81

6.1. Antimicrobial Resistance 70
6.2. Biomolecules Curing HIV 71
6.3. Deepfake and AI 72
6.4. Euclid Space Telescope 74
6.5. Helicobacter pylori (H. pylori) 75
6.6. India's 5G efforts highlighted at India Mobile Congress 77
6.7. India's Indigenous Iron Dome 78
6.8. Magellanic Cloud 79
6.9. Vikram-I Rocket 80

7. INTERNAL SECURITY 82-86
7.1. Defence Imports 82
7.2. FATF on Crowdfunding in India 83
7.3. Malware Malice and Apple Snooping 84
7.4. Military Exercises 85

8. SOCIAL ISSUES 87-98
8.1. Maternity Leave for Women Soldiers 87
8.2. Gender Gap in Earning 87
8.3 Adultery 89
8.4. State Educational Achievement Survey (SEAS) 90
8.5. ATL Sarthi 90
8.6. Automated Permanent Academic Account Registry (APAAR) 91
8.7. 70 Hours Work Week 92
8.8. Global TB Report 2023 93
8.9. PM PVTG Development Mission 94
8.10. People with Disabilities (PwD) 94
8.11. Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) 96
8.12. One Nation, One Registration Platform 96
8.13. 'Road Accidents in India 2022' Report 97

9. PRELIMS CORNER 99-104

10. MAINS CORNER 105-110

1. POLITY AND GOVERNANCE

1.1. Supreme Court allows surrogacy

Current Context

Recently, the Supreme Court allowed a woman with **Mayer-Rokitansky-Kuster-Hauser (MRKH) Syndrome**, to undergo surrogacy using a donor egg.

About

- In March 2023, the government issued a notification amending the law, **prohibiting the use of donor gametes in surrogacy.**
  - ✓ The amendment mandated that **intending couples must use their own gametes for surrogacy.**
- The woman's lawyer argued that the amendment **contradicted the Surrogacy Act.**
  - ✓ He referred to **Rule 14(a)** of the Surrogacy Rules, listing **medical conditions justifying gestational surrogacy,** including the absence of a uterus or other uterine abnormalities.
- The Court agreed that the **choice to opt for surrogacy was based on the woman's medical or congenital condition**, such as the absence of a uterus or life-threatening pregnancy complications.

Mayer-Rokitansky-Kuster-Hauser (MRKH) syndrome

- It is a disorder that mainly affects the female reproductive system, causing the vagina and uterus to be underdeveloped or absent, although external genitalia are normal.
- Affected individuals usually do not have menstrual periods due to the absence of a uterus.
- Since she has absent ovaries and uterus, it is impossible for her to produce her own eggs for conception.
- MRKH Syndrome Types:
  - ✓ Type 1: Only reproductive organs are affected.
  - ✓ Type 2: May have abnormalities in other body parts.

Evolution of Surrogacy Legislation in India

- Despite legalization, India lacked an institutional framework on surrogacy, leading to uncontrolled surrogacy by low-cost clinics and vulnerable women.
- **Surrogacy (Regulation) Bill, 2016:** Defined surrogacy and required proving "infertility" due to specific medical conditions or five years of unprotected coitus.
- **Surrogacy (Regulation) Bill, 2019:** Permitted altruistic surrogacy and banned commercial surrogacy.
- **Surrogacy (Regulation) Act, 2021:** A widowed or divorced woman between the ages of 35 and 45, or a married couple, defined as legally married, can use surrogacy if she has a medical condition that requires this option.
- **Surrogacy (Regulation) Amendment Rules, 2023:** Donor eggs cannot be used for gestational surrogacy of an intending couple

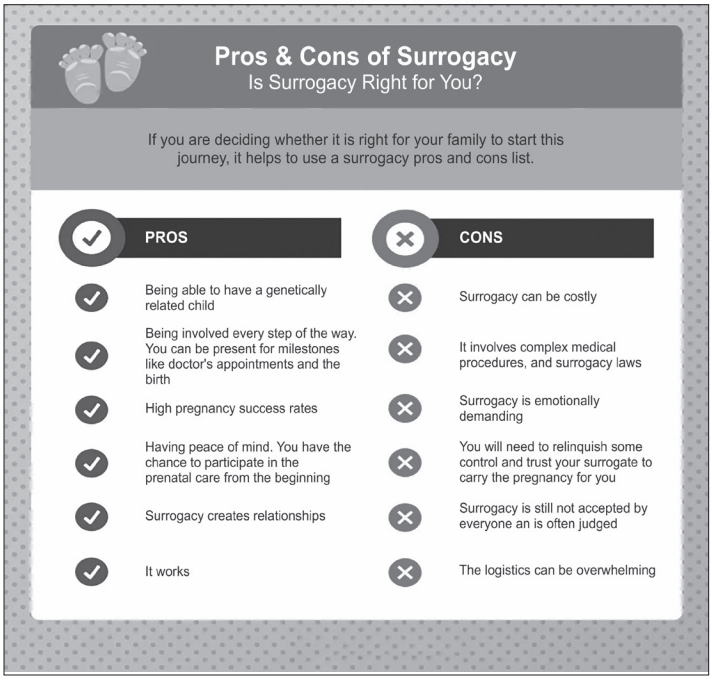
- **The Supreme Court protected the woman's Right to Parenthood** through surrogacy, ruling that the amendment could not contradict the recognition of medical conditions necessitating gestational surrogacy.

What is Surrogacy?

- Surrogacy is a reproductive arrangement **where a surrogate mother carries and gives birth to a child for intended parents** who may face infertility, medical issues, or be same-sex couples.
- **There are two main types:**
  - ✓ **Traditional Surrogacy**: The surrogate is genetically related to the child as her own egg is used. It is less common due to legal and ethical complexities.
  - ✓ **Gestational Surrogacy**: The surrogate is not genetically related and embryos are created through in vitro fertilization (IVF) using the intended parents' or donors' egg and sperm.

Conclusion

- Surrogacy in India should focus on legal clarity, accommodating medical needs, establishing an ethical framework, and raising awareness to ensure balanced practice and use.



1.2. Anti-defection law

Current Context

Recently, the Supreme Court directed the Speaker of the Maharashtra Assembly to reach a decision on the **disqualification** petitions filed against the Chief Minister, under the **Tenth Schedule** of the Constitution.

About

A three-judge Bench led by the Chief Justice of India ordered the Speaker, in his capacity as a **tribunal under the Tenth Schedule,** to decide the fate of such petitions against the **breakaway faction** of the political party concerned, **headed by the Deputy Chief Minister** by January 31, 2024.

What is Defection?

The act of **voluntarily giving up the membership** of a political party, **abandoning the party principles** or **disobeying the party leadership** on a vote in the legislature.

Anti-Defection Law

- **The 52nd Amendment Act of 1985** introduced the **Anti-Defection Law**, **disqualifying** members for switching parties and added the **Tenth Schedule.**
- It aims to prevent unethical political defections, strengthening Indian democracy in the process.
- The Tenth Schedule outlines disqualification rules for members of Parliament and State Legislatures.
  - ✓ **Members from political parties** can be disqualified for voluntarily leaving their party or voting against party directions without permission.
  - ✓ **Independent members** face disqualification if they join any political party after election.
  - ✓ **Nominated members** can join a political party within six months of taking their seat in the House without facing disqualification, but after this period, joining a party would result in disqualification.

- **The disqualification on the ground of defection does not apply in the following two cases:**
  - ✓ **Merger of political parties**: If a member goes out of his party as a result of a merger, provided that two-thirds of the members of the party have agreed to such merger.
  - ✓ **Presiding officers of the House**: If a member, after being elected as the presiding officer of the House, voluntarily gives up membership of the party or rejoins it after he ceases to hold that office. This exemption has been provided in view of the dignity and impartiality of the office.

Constitutional provisions related to disqualifications of membership

- Article 102(2): Mandates disqualification from Parliament if an individual is disqualified under the Tenth Schedule.
- Article 191(2): Enforces disqualification from State Legislative Assembly or Council if an individual is disqualified under the Tenth Schedule.

Noteworthy Judicial Observations

- G. Viswanathan vs. Hon'ble Speaker, Tamil Nadu Legislative Assembly (1995): The Supreme Court affirmed that the Speaker of a legislative assembly holds the authority to make final decisions on defection cases, which cannot be legally challenged.
- Ravi S. Naik vs. Union of India (1994): This case established that the Speaker or Chairman of a legislative body can disqualify elected representatives for defection.

- **Deciding Authority:**
  - ✓ Initially, the **Presiding Officer** of the House had final authority in deciding defection cases.
  - ✓ However, the **Kihoto Hollohan case in 1993** ruled this unconstitutional, **allowing Judicial Review of the Presiding Officer's decisions** for issues like mala fides or perversity.

- **Provisions on Defection in the 91st Amendment Act of 2003**
  - ✓ A **Member of Parliament (MP)** or **Legislative Assembly (MLA)** disqualified for defection cannot be appointed as a minister.
  - ✓ They are also **barred from holding any remunerative political post**.
  - ✓ **The exemption from disqualification in cases of splits** by one-third of the legislature party, as per the Tenth Schedule, was deleted, removing protection for defectors based on splits.

Way forward

- The recent Supreme Court directive in Maharashtra underscores the **importance of decisive action on anti-defection cases** to uphold Indian democracy's integrity.
- Maintaining the sanctity of these laws is essential for a **strong democratic foundation**.

1.3. Death Penalty in India

Current Context

The proposed Bharatiya Nyaya Sanhita (BNS) Bill, 2023 has increased the number of crimes, which can attract the death penalty, from 11 to 15, according to a Parliamentary Panel Report.

About

The three new criminal codes

i. Bharatiya Nyaya Sanhita (BNS) Bill, 2023;
ii. Bharatiya Nagarik Suraksha Sanhita (BNSS) Bill, 2023;
iii. **Bharatiya Sakshya (BS) Bill, 2023**-aim to replace the **Indian Penal Code, Code of Criminal Procedure, and Indian Evidence Act**, respectively.

- **A parliamentary panel report** acknowledges the concerns raised by experts regarding the death penalty's fallibility and the potential for wrongful convictions.
- India has consistently opposed **UN resolutions** seeking to abolish the death penalty.

Annual Statistics Report 2022

- Published by Project 39A (National Law University Delhi).
- Shows that till December 31, 2022, as many as 539 prisoners were on death row in India, the highest since at least 2016.

What is Death Penalty?

- **Capital punishment**, also known as the death penalty, involves the execution of a convicted offender following a court's judgment for a criminal offense.
- **It represents the most severe penalty** that can be imposed on an accused individual, typically reserved for heinous crimes such as murder, rape, and treason.
- **Proponents** argue that the death penalty serves as a fitting punishment and an effective deterrent for the most egregious offenses. On the other hand, **opponents** view it as inhumane.

Bharatiya Nyaya Sanhita Bill of 2023

It aims to replace the IPC, suggesting alterations in defamation, offenses against women, and attempted suicide provisions, with 356 provisions compared to IPC's 511 sections.

Worldwide Prevalence

- **Amnesty International** reports that **55 Countries** retain the death penalty in their legal systems. **Hanging**, notably in **former British colonies**, is the most common method, while **China employs firing squads**.
- **Saudi Arabia** opts for beheading and various other methods.
- In the **United States**, lethal injection is administered in states (27 states and American Samoa) where the death penalty is permitted.
- In **Europe and the Americas**, it is uncommon, except in Belarus, Guyana and Cuba.
- **Iran** continues to use the death penalty in violation of international law, including death sentences for crimes failing to meet the "**most serious**" crime threshold, the use of torture, and performing public executions.
- Recently, **Sierra Leone, Papua New Guinea, and Equatorial Guinea** joined the **110** countries and territories worldwide that have abolished the death penalty.

Relevant judgements

- **Ediga Anamma v. State of Andhra Pradesh (1974),** the Supreme Court established life imprisonment as the norm for murder, making the death penalty an exception, requiring special reasons.
- **Bachan Singh v. State of Punjab (1980),** the Court emphasized that the death penalty should be reserved for the rarest of brutal cases.
- **Machhi Singh v. State of Punjab (1983)**, the Supreme Court outlined criteria to assess whether a case qualifies as one of the rarest of rare, setting parameters for the application of the death penalty.

Arguments in Favor of the Death Penalty	Arguments against the Death Penalty
• **Retribution:** Justice demands proportionate suffering for crimes, with death deemed appropriate for murder. • **Deterrence:** Executing murderers is seen as a deterrent to potential offenders. • **Closure for Victims' Families**: Death penalty proponents argue it provides closure for the families of victims. • Rehabilitation **Opportunities:** Some contend that facing death doesn't allow for repentance and spiritual rehabilitation.	• **Doubtful Deterrence:** Statistical evidence doesn't consistently support the idea that it deters crime. • **Risk of Executing the Innocent:** Concerns arise about the potential for mistakes in the justice system. • **Moral Objections to Retribution:** Opponents argue that retribution is immoral, resembling sanitized vengeance. • **Global Abolition Trend:** Most developed countries have abolished or suspended the death penalty, as noted by the UN Secretary General's report. • **Lack of Rehabilitation:** Capital punishment is criticized for not offering the possibility of prisoner rehabilitation and reintegration.

Pardon

It is the government's way of erasing a person's criminal record, essentially wiping the slate clean and granting them a second chance.

Legal Remedies Available

- Death sentence from **Trial Court needs High Court affirmation** for finality.
- **Article 137** of the Indian Constitution empowers Supreme Court to review judgments
- After a rejected **Review Petition**, a **Curative Petition** can be filed, focusing on gross violations of natural justice.
- Convicts can file a **Mercy Petition** within seven days post-dismissal, seeking pardon from **President (Article 72) or Governor (Article 161).**

1.4. Federal Issues with the Office of the Governor

Current Context

Tamil Nadu and Kerala have **approached the Supreme Court of India** regarding the conduct of their Governors.

About

Both Tamil Nadu and Kerala are aggrieved due to **delays in granting assent to a significant number of Bills,** passed by the legislature, on crucial policy matters**.**

- **The Supreme Court** asked Governors, in case they withhold assent, to **send back a Bill forwarded to him by a State Legislature "as soon as possible"** with a message to reconsider the proposed law.
- In case, **the State Assembly reiterates the Bill "with or without amendments",** the Governor has no choice or discretion, and has to give his assent.

Governor

- He is an executive who acts as the Chief Executive Head of the State
- As per Article 153, the Governor is regarded as the Titular-Constitutional Head governing all the aspects of the state as the main agent of the Union Government.

Powers of the Governor in contention

- **Legislative Powers:**
  - ✓ **Article 200**: Outlines the **process for a Bill passed by the Legislative Assembly of a State** to be presented to the Governor for assent, who may either **assent, withhold assent or reserve the Bill for consideration by the President**.
    - **The Governor may also return the Bill** with a message requesting reconsideration by the House or Houses.
    - In **Purushothaman Nambudiri v/s State of Kerala (1962),** the Supreme Court ruled that a **bill pending the Governor's assent does not lapse upon the dissolution** of the House.
    - **The second provision** of Article 200 grants the Governor the discretion to **refer a bill to the President** if they believe its passage would infringe upon the powers of the High Court.
  - ✓ **Article 201:** States that when a Bill is reserved for the consideration of the President, the **President may assent to or withhold assent from the Bill or direct the Governor to return the Bill to the House** for reconsideration.

Constitution on the Governor

- Article 154(1): State's executive power is vested in the Governor.
- Article 155: The President of India appoints the Governor of a State through a formal warrant bearing his signature and seal
- Article 156(1): Tenure of the Governor office at the pleasure of the President, meaning their term is subject to the President's discretion.
- Article 157: Eligibility for Governor's Appointment: a citizen of India, and they must have attained a minimum age of thirty-five years.
- Article 164(1): The CM is appointed by the Governor, and other Ministers are appointed by the Governor on the CM's advice, holding office at the Governor's pleasure.

- **Constitutional Discretion:**
  - ✓ **Reservation of a bill** for the consideration of the President **(Article 200)**.
  - ✓ Recommending the imposition of **President's Rule (Article 356)**.
  - ✓ **Exercising administrative functions** in an adjoining Union Territory.
  - ✓ **Determining the royalty amount** payable by the Governments of Assam, Meghalaya, Tripura, and Mizoram to an autonomous Tribal District Council from mineral exploration licenses.
  - ✓ **Seeking information** from the Chief Minister (CM) regarding administrative and legislative matters of the state.
- **Situational Discretion:**
  - ✓ **Appointing a CM** in the absence of clear majority in the State Legislative Assembly or when the incumbent dies suddenly with no obvious successor.
  - ✓ **Dismissing the Council of Ministers (CoM)** when it lacks the confidence of the Assembly.

- ✓ **Dissolving the State Legislative Assembly** if the CoM loses majority.

Recommendations to address such Federal Tensions

- **First Administrative Reforms Commission (1966):** Governors should not be eligible for reappointment after their five-year term to prevent potential politicization of the office.
- **Sarkaria Commission on Centre-State Relations (1983**): Governors should be eminent individuals from outside the respective states, with secure terms to maintain neutrality, without recent political involvement, and promoted consultation with the CM on the Governor's role as Chancellor of State Universities.
- **National Commission to Review the Working of the Constitution (2000 - Justice Venkatachaliah Commission**): Reiterated the Sarkaria Commission's views and suggested imposing time limits for Governors to give assent to pending bills and those awaiting Presidential approval **under Article 201**.
- **Punchhi Commission (2007 Centre-State Relations):** Reaffirmed most of the Sarkaria Commission's recommendations and emphasised the need to safeguard them against Central Government pressure, and proposed an amendment to removal procedures (**Article 156).**

Relevant Supreme Court judgments

- Shamsher Singh vs. State of Punjab (1974): Governor is obliged to act in accordance with the advice of the CoM, led by the CM.
- SR Bommai vs. Union of India (1994): Determination of whether the State Government possesses a majority should be assessed on the floor of the Legislative Assembly, rather than relying on the Governor's subjective judgment, with respect to discussions on Article 356.
- Nabam Rebia vs. Deputy Speaker (2016): The Governor's discretion is not unlimited and is always subject to constitutional standards, including his authority under Article 174.

1.5. Issues in Local Self Governance Institutions

Current Context

The report titled **Annual Survey of India's City-Systems (ASICS) 2023,** was recently published by the **Janaagraha Centre for Citizenship and Democracy.**

Key highlights of the Report

Financial Dependency on State Governments: Majorly rely on their respective State governments for financial support.

- **Tax Collection:**
  - ✓ **Assam** stands out as the only State that empowers its city governments to collect significant taxes.
  - ✓ **Except for five States** (Bihar, Jharkhand, Odisha, Meghalaya, and Rajasthan), all others require city governments to obtain prior approval from the State for borrowing money.
- **Limited Power in Staff Appointments and Promotions:**
  - ✓ Mayors and City Councils have limited authority in appointing and promoting staff in Indian cities.
  - ✓ This lack of control makes it **challenging to initiate disciplinary proceedings** against staff when necessary, hindering **accountability**.
- **Transparency in Civic Information:**
  - ✓ **Only 11 out of 35 States/ UTs** have enacted the **Public Disclosure Law**, which mandates the publication of essential civic data for public access.
  - ✓ Some capital cities in India publish internal audit reports and annual reports, **but only 11 cities make their minutes of meetings available, and 17 provide details of their decision-making process**.
- **Vacancies**: **Data** indicates that **35% of positions in municipal corporations are vacant**, which worsens to **41% in municipalities and 58% in town panchayats**.
- **Financial Transparency:**
  - ✓ No city publishes quarterly financial audited statements,

Local Self Governance

- It's the management of local affairs by autonomous bodies elected by the native population.
- It is the third level of the government and includes both rural (Panchayats) and urban (Municipalities) governments.

Constitutional Provisions

- Local Government is a subject mentioned in the State List under the 7th Schedule.
- The 73rd and 74th Constitution Amendment Acts (Part IX, IXA) established local self-governance in rural and urban India respectively.
- Article 40 states, government should establish village panchayats and give them the power to function as units of self-government.

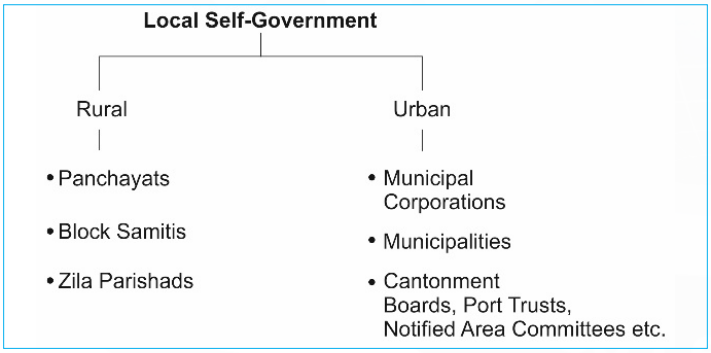
Article 243-I
The Governor shall constitute State Finance Commission every five years to review the financial position of the panchayats and make recommendations to the Governor.

and only **28% share their annual audited financial statements**. In mega cities, this number drops to **17%**.

- ✓ **Larger cities are more likely to publish their budgets**, with smaller cities lagging behind, as **only 40%-65% of them share** this information.

- **Obsolete Distinction between Panchayats and Municipalities**: Some propose the creation of a unified district-level local government, blurring the urban-rural divide.
- **Proxy Presence of Female Gram Pradhans:**
  - ✓ Female Gram Pradhans (village chiefs) are often influenced by family members and **"Sarpanch Patis".**
  - ✓ After winning elections, much of the decision-making is still controlled by male family members, resulting in indirect female leadership.
  - ✓ At present, there are **1.3 million women** in Panchayat raj institutions which constitute **44.2 percent of total representatives.**
  - ✓ Women Sarpanchs accounts for nearly **43 percent** of total gram panchayats across the country.

Article 243D(3)
Ensures women's involvement in PRIs by requiring a **one-third reservation** for women out of the total number of seats to be filled by direct election and the number of offices of panchayat chairpersons.



Associated Government Steps

- **Revamped Rashtriya Gram Swaraj Abhiyan (RGSA):** Developing governance capabilities of PRIs to achieve SDGs.
- **Fifteenth Finance Commission (XV FC):** Rs.2,36,805 Crores allocated for FY 2021-26 to Panchayats in all the three tiers, Traditional Local Bodies and 6th Schedule areas.
- **e-Gram Swaraj e-Financial Management System**: A Simplified Work Based Accounting Application to bring better transparency through decentralized planning.
- **Panchayats (Extension to the Scheduled Areas) Act, 1996 (PESA): Special powers to the Gram Sabhas in Scheduled Areas, especially for the management of natural resources.**

Relevant Committee Recommendations

- **Balwant Rai Mehta Committee (1957):** Early establishment of elected local bodies at the village and block levels, with devolution of power and resources.
- **Ashok Mehta Committee (1977):** Two-tier system of PRIs, with Mandal Panchayat at the base and Zilla Parishad at the top, and representation of SCs and STs in proportion to their population.
- **G.V.K. Rao Committee (1985):** PRIs be assigned the work of planning, implementation, and monitoring of rural development programmes.
- **L. M. Singhvi Committee (1986):** LSGs be constitutionally recognized, protected, and preserved.
- **P. K. Thungon Committee (1988):** Constitutional recognition of LSG bodies.
- **Gadgil committee (1988):** How best Panchayati Raj institutions could be made effective.
- **Ahluwalia committee (2008):** Quality awards for local self governments.
- **Mani Shankar Aiyar committee (2013):** Examined the reasons why attempts at sharing power with self-governance units haven't been entirely successful.

1.6. Parliamentary Ethics and Privileges

Current Context

Recently, the **Lok Sabha Ethics Committee's** proceedings against a Member of Parliament (MP) from West Bengal, has sparked public debate.

About

The allegations were specifically related to the **MP receiving money in exchange for raising questions in the Parliament** that would promote the businessman's interests.

- **Following the complaint, the Speaker of the Lok Sabha referred the matter to the Ethics Committee for a thorough examination.**

Parliamentary Ethics

The Ethics Committee has not defined the term **'unethical conduct'** anywhere. It is left entirely to the committee to examine a particular act of conduct and decide whether it is unethical or not.

Ethics Committee

- Established in **2000 in Lok Sabha and 1997 in Rajya Sabha.**
- **It has a two-fold purpose:**
  - ✓ To investigate **complaints regarding the unethical behavior** of Members of Parliament (MPs) and
  - ✓ Propose appropriate **actions**, as well as to develop a **Code of Conduct** for MPs.
- **Instances where MPs were expelled from house:**
  - ✓ In 1951, H.G. Mudgal, an MP, was found guilty of promoting a business association's interests in exchange for financial benefits through parliamentary actions, which led to a special committee recommending his expulsion.
  - ✓ In 2005, a sting operation revealed that 10 Lok Sabha MPs accepted money for raising questions in Parliament. A special committee found them guilty of conduct unbecoming of a member and recommended their expulsion, which was accepted.
- **Complaints regarding MPs receiving money for parliamentary work are typically referred to the Privileges Committee or special committees** formed by the House.
- However, in this case, the allegation of receiving illegal gratification for parliamentary work was referred to the **Ethics Committee**.
- The question of the relevance of the evidence of a person or a document is finally decided by the **Speaker only**.

Privilege Committee

- It consists of 15 members nominated from Lok Sabha, while the Rajya Sabha committee has 10 members.
- Its function is to examine every question involving Breach of Privilege of the House or of the members of any Committee thereof referred to it by the House or by the Speaker.
- Breach of Privilege occurs when an individual or authority disregards or attacks the privileges, rights, and immunities of members or of the House.
- Parliamentary Privileges encompass special rights, immunities, and exemptions crucial for upholding the independence and effectiveness of Parliament and its members.
- These privileges extend to those entitled to participate in parliamentary proceedings, such as the Attorney General of India and Union Ministers, but they do not apply to the President, who is also a part of Parliament.
- Article 105 of the Constitution expressly mentions two privileges, i.e., Freedom of Speech in Parliament and Right of Publication of its proceedings.

Parliamentary Probe Vs Judicial Probe

- **Judicial probes** adhere to statutes and rules, conducted by individuals with legal training. In contrast, **parliamentary committees** comprise MPs who may lack expertise.
- **Parliament,** empowered to oversee the executive and hold it accountable, possesses investigative authority and can also impose penalties to safeguard its honor and dignity, even on its own members.

1.7. Parties' Unknown Income Rises

Current Context

Annual Reports of the **Association of Democratic Reforms (ADR)** indicates that the proportion of "unknown sources of income" has increased over the years, contrary to the intended outcome of **electoral bonds.**

About

- **The Supreme Court** is deciding whether the **current electoral bonds scheme facilitates anonymous corporate funding** to political parties and whether it was **wrongly certified as a Finance Act.** The Court's decision will **affect transparency in election funding**.
- ADR categorizes the income of political parties into two primary categories-
  - ✓ **Known income** which is further categorized into two subtypes:
    - i. **Voluntary Contributions** over 20,000 with donor details disclosed to the Election Commission of India (ECI).
    - ii. **Other Known Sources of Income**, including the sale of movable and immovable assets.
  - ✓ **Unknown income includes**:
    - i. Voluntary donations under 20,000.
    - ii. Funds obtained through electoral bonds.
    - iii. Revenue from the sale of coupons.
    - iv. Similar means where donor details are not disclosed to the public.

Electoral Bonds

First pronounced by the Finance Minister in the Union Budget 2017-18 as a proposed reform in political funding in India, it's a financial instrument for making donations to political parties.

Eligibility for political parties:

i. Registered under Section 29A of the Representation of the People Act, 1951.

ii. Secured not less than one per cent of the votes polled in the last general election to the House of the People or the Legislative Assembly, as the case may be.

Income of national parties from known and unknown sources

- **From Unknown Sources:**
  - ✓ For national parties, it was **66%** [FY15-FY17].
  - ✓ Increased to **72%.** [FY19-FY22].
- **Electoral Bonds' Share of Total Income:**
  - ✓ They accounted for **58% of the national parties' total incomes** [FY19-FY22].
  - ✓ More significantly, they constituted **81% of the national parties' total income from unknown sources** during this period.

Table 1	NATIONAL PARTIES		REGIONAL PARTIES		BJP		CONGRESS	
In all tables, figures are in ₹crore, unless otherwise mentioned	2014-15 to 2016-17	**2018-19 to 2020-21**	2014-15 to 2016-17	**2018-19 to 2020-21**	2014-15 to 2016-17	**2018-19 to 2020-21**	2014-15 to 2016-17	**2018-19 to 2020-21**
Total known income from donations> 20,000 (A)	1,314	**2,559**	331	**561**	1,046	**2,005**	204	**362**
Total unknown income (B)	2,550	**6,317**	399	**1,191**	1,431	**4,355**	757	**1,434**
Total income without other known sources (C)	3,864	**8,876**	730	**1,752**	2,477	**6,361**	961	**1,796**
Total income from electoral bonds (D)	0	**5,029**	0	**1,114**	0	**4,028**	0	**711**
% of known income (A/C)	34%	**29%**	45%	**32%**	42%	**32%**	21%	**20%**
% of unknown income (B/C)	66%	**71%**	55%	**68%**	58%	**68%**	79%	**80%**
Electoral bonds income as a % of total income (D/C)	0%	**57%**	0%	**64%**	0%	**63%**	0%	**40%**
Electoral bonds income as a % of unknown income (D/B)	0%	**80%**	0%	**94%**	0%	**92%**	0%	**50%**

- **Breakdown of Unknown Income Sources (after Electoral Bonds introduction):**
  - ✓ Before the scheme's implementation, unknown income sources included donations under 20,000 and coupon sales, among others.
  - ✓ After the scheme's introduction (FY19-FY22), the composition of unknown income sources shifted predominantly to electoral bonds.
- **Change in Income Sources:**
  - ✓ Donations under 20,000 decreased post the introduction of electoral bonds.
  - ✓ Coupon sales as an income source also declined significantly.

Table 3	NATIONAL PARTIES		BJP		CONGRESS	
	2014-15 to 2016-17	**2018-19 to 2020-21**	2014-15 to 2016-17	**2018-19 to 2020-21**	2014-15 to 2016-17	**2018-19 to 2020-21**
Expenditure	3,862	**5,785**	2,062	**3,277**	1,280	**1,677**
Election expenditure	-	-	1,539	**2,566**	785	**1,264**
Change in total expenses (%)	-	**50%**	-	**59%**	-	**31%**
Change in election expenses (%)	-	-	-	**67%**	-	**61%**

Election expenditure limits

- **The Election Commission of India (ECI) in 2020 hiked the expenditure limits for candidates** for Lok Sabha and Assembly constituencies from Rs 54 lakh-Rs 70 lakh to Rs 70 lakh-Rs 95 lakh and Rs 20 lakh-Rs 28 lakh to Rs 28 lakh- Rs 40 lakh respectively (depending on states).

Relevant Committees

- **The Vohra Committee (1993)**: Studied the problem of the **criminalisation of politics** in context of lack of transparency of electoral funding.
- **Indrajit Gupta Committee (1998): State funding** of elections endorsed, favoring recognized political parties and partial funding initially.
- **Law Commission of India (1999):**
  - ✓ Agreed with the Indrajit Gupta Committee on **partial state funding** due to economic constraints.
  - ✓ Strongly recommended the establishment of a **regulatory framework** for political parties before attempting state funding, including provisions for internal democracy, structures, account maintenance, auditing, and submission to the Election Commission.
- **National Commission to Review the Working of the Constitution (2001):**
  - ✓ **Did not endorse** state funding of elections.
  - ✓ A **regulatory framework** for political parties must be established before considering state funding.
- **Second Administrative Reforms Commission Report (2008):** Recommended **partial state funding** of elections to reduce "illegitimate and unnecessary funding" of election expenses.

Associated provisions in the Representation of the People Act, 1951

- **Section 29B**: Political parties, in accordance with the Companies Act, 1956, have the authority to accept voluntary contributions from individuals or non-Government companies.
  - ✓ However, they are not allowed to accept contributions from foreign sources as defined in Section 2(e) of the Foreign Contribution (Regulation) Act, 1976.
- **Section-29C**: Declaration of donation received by the political parties.
  - ✓ The treasurer of a political party/any other person authorised shall, in each financial year, prepare a report on-
  - ✓ Contributions in excess of twenty thousand rupees received by such political party from any person.
  - ✓ Contribution in excess of twenty thousand rupees received by such political party from companies other than Government companies.
- **Section 77:** Candidates must maintain a correct record of expenses from their nomination date to the result declaration date.
  - ✓ They are required to submit their expenditure statements to the Election Commission of India (ECI) within 30 days after the elections.
  - ✓ Violating the expenditure cap or maintaining incorrect accounts can lead to their disqualification by the ECI for up to three years under Section 10A of the Act.

1.8. Review Petition

Current Context

Recently, Supreme Court, in a verdict impacting **Review Petition,** held that review of a judgement cannot be allowed merely because of any passing reference, made against it, by another bench of equal strength.

About

- The Court rejected a review petition seeking **re-examination of last year's verdict pertaining to the Corporate Insolvency Resolution Process (CIRP)** of a firm Rainbow Papers Limited.

Review Petition

- **Article 137** of the Constitution of India grants the Supreme Court the power to review any of its judgments or orders.
- This power is however subject to the Rules made by the Supreme Court under **Article 145**, as well as the provisions of any law enacted by Parliament.
- The **scope of the power** of review was explained by the Court in **Northern India Caterers (India) v Lt. Governor of Delhi (1979)**.
- Further, in a 2013 ruling, the Supreme Court itself **laid down three grounds** for seeking a review of a verdict it has delivered —
  - ✓ **The discovery of new and important matter or evidence** which was not within the knowledge of the petitioner or could not be produced by him;
  - ✓ **Mistake or error** apparent on the face of the record; or
  - ✓ **Any other sufficient reason** which means a reason that is analogous to the other two grounds.
- As per the **Supreme Court Rules, 2013** a Review Petition must be filed **within 30 days** from the judgment or order of which review is sought and must be placed before the same Bench which had delivered the decision.
- It is **not necessary that only parties** to a case can seek a review of the judgment on it. **Any person** aggrieved by a ruling can seek a review.
- In accordance with **Rules of Code of Civil Procedure, 1908**, a **Civil Review Petition** can be moved while a **Criminal Review Petition** can be filed only on the ground of error apparent on the face of record.

Other forms of Petitions

Curative Petitions

- It's the last constitutional remedy **available to a person whose Review Petition has been dismissed** by the Supreme Court.
- The Supreme court of India evolved the concept in the landmark case of **Rupa Ashok Hurra vs. Ashok Hurra and Anr. (2002)** where a question was raised that whether an aggrieved person is entitled to any relief against the final order/judgment of the Supreme court after dismissal of review petition.
- There is **no time limit** for filing a Curative Petition and it is guaranteed under **Article 137** of the Constitution of India.

Corporate Insolvency Resolution Process (CIRP)

It's a recovery mechanism for creditors where if a corporate becomes insolvent, a financial creditor, an operational creditor, or the corporate itself may initiate CIRP after making an application.

Special Leave Petition

- It's a petition **seeking special permission (leave) from the Supreme Court to appeal** against a judgment passed in any of the lower courts or tribunals in India.
- It's not an appeal but a petition filed for an appeal.
- According to **Article 136**, an appeal can be made to the Supreme Court directly from any order, decision, decree, judgment, etc. given by any court or tribunal in India.
- This power of the Supreme Court is **discretionary** and the Hon'ble Court may or may not allow it.

Mercy Petition

- It's a formal request made by a convict sentenced to death or imprisonment, seeking mercy from the **President (Article 72) or the Governor (Article 161)**.
- Mercy Petition to the President under **Article 72** is the **last constitutional resort** a convict can take when sentenced by the court of law, but **isn't the right of the prisoner**. He cannot claim it.
- In **Epuru Sudhakar & Anr. v. Government of Andhra Pradesh (2006)**, the SC held that the power of the President and Governor is subject to **Judicial Review.**
- In **Dhananjoy Chatterjee v/s State of West Bengal (1994),** the SC said that the power can be exercised by the Central and State Governments, not by the President or Governor on their own.

2. INTERNATIONAL RELATIONS

2.1. India-Australia: 2+2 Dialogue

Current Context

India and Australia hold **second 2+2 ministerial dialogue** to step up defence cooperation and deepen the strategic relationship in sectors such as critical minerals and trade and investment.

Key highlights of the dialogue

- Both sides welcomed the positive and increased momentum of the **India-Australia Comprehensive Strategic Partnership (CSP),** which has brought benefit to both countries and helps to support the security and prosperity of the region.
- They expressed deep concern over the **war in Ukraine** and its tragic **humanitarian consequences.**
- Both sides reaffirmed that they **stand with Israel against terrorism** and called for **adherence to international humanitarian law,** including the protection of civilians.
- The Ministers expressed their **deep concern at the deteriorating situation in Myanmar** and its impacts on regional security and stability.
- The two nations underscored the importance of further **enhancing cooperation in information exchange and maritime domain awareness**.
- The Ministers reaffirmed **their support for sovereignty and territorial integrity in the Indo-Pacific, democratic values, rule of law, freedom of navigation and overflight and the peaceful resolution of disputes.**
- The Ministers recommitted themselves to **empowering the Quad** as a partnership for **regional and global good.**

2+2 Dialogue

- Refers to a diplomatic and security dialogue format between two countries involving their respective Foreign Affairs and Defense Ministers.
- The "2+2" format allows these high-level officials to meet and discuss issues related to foreign policy, defense, and security.
- India has 2+2 dialogues with four key strategic partners: the US, Australia, Japan, and Russia.

India-Australia Ties

- Economic Cooperation:
  - ✓ **Bilateral trade (in 2022):** over **$31 billion** (India's exports over $10 billion and imports at $17 billion).
  - ✓ **Economic Cooperation Trade Agreement (ECTA):** It is the **first free trade agreement signed by India with a developed country in a decade,** which entered into force in December 2022.
  - ✓ **Supply Chain Resilience Initiative (SCRI):** India and Australia are partners in the **trilateral arrangement along with Japan** which seeks **to enhance the resilience of supply chains** in the **Indo-Pacific Region.**
- Defence Cooperation:
  - ✓ **Mutual Logistics Support Agreement (MLSA)** (signed in 2022) to enhance military interoperability.
  - ✓ **The 2+2 Ministerial Dialogue (2022).**
  - ✓ **Joint military exercises:** Naval Exercise Kakadu, AUSINDEX (Navy), Ex AUSTRA HIND (Army), **Malabar, Exercise Pitch Black 22.**
- Education and Research Collaboration:
  - ✓ **Mutual Recognition of Educational Qualifications (MREQ)** was signed in March 2023 to **facilitate mobility of students** between India and Australia.
- **Multilateral Cooperation:**
  - ✓ Both are members of the **Quad, Commonwealth, Indian Ocean Rim Association (IORA), ASEAN Regional Forum, Asia Pacific Partnership on Climate and Clean Development, and have participated in the East Asia Summits.**
- Diaspora:
  - ✓ **Indian Diaspora in Australia:** Over **10 lakh people in Australia** reported their ancestry as Indian origin.
  - ✓ **Cultural exchanges:** Annual Confluence Festival of India in Australia and the Oz Fest in India.

Challenges in India-Australia ties

- **Racial discrimination:** Attacks on the Indian diaspora and temples by Khalistan supporters have caused strains in the relationship.
- **Immigration policies:** Changes in immigration policies, including visa regulations, can affect the movement of people between the two countries.
- **Controversy over the Adani coal mine project:** Has also caused tensions due to protests by activists.

Way Forward

- Explore opportunities for **collaboration in emerging sectors** such as **technology, renewable energy, and digital economy.**
- Foster stronger **people-to-people ties** through **cultural exchanges**, **educational programs**, and initiatives that promote mutual understanding.
- **Regular diplomatic dialogues** on various levels can help address emerging issues promptly.
- **Engage in public diplomacy** initiatives to raise awareness and promote positive perceptions of each other's countries.

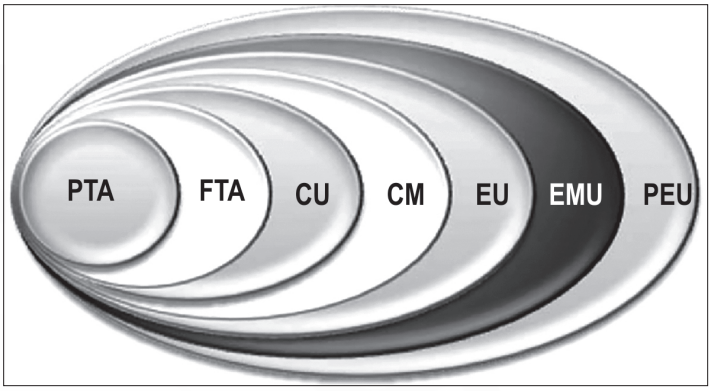
2.2. India-UK FTA

Current context

Recently, India and the UK discussed ways to take forward their negotiations on a **Free Trade Agreement (FTA)** during a meeting between **India's External Affairs Minister S. Jaishankar** and **his British counterpart.**

Free Trade Agreement

- It is a pact between two or more nations to **reduce barriers to imports and exports** among them.
- Under a **Free Trade Policy**, goods and services can be bought and sold across international borders with **little or no government tariffs, quotas, subsidies,** or prohibitions to inhibit their exchange.
- **FTAs reduce or eliminate barriers to trade across international borders** and is the opposite of **Trade Protectionism**.
- Preferential Trade Agreement (**PTA**), Comprehensive Economic Cooperation Agreement (**CECA**), and Comprehensive Economic Partnership Agreement (**CEPA**) are categories of FTAs.



India's other Free Trade Agreements (FTA)

Countries/ Regions	Name of the Agreement
UAE	India-UAE CEPA
Australia	India – Australia CECA
Japan	Japan India Comprehensive Economic Partnership Agreement (JICEPA)
Malaysia	India Malaysia Comprehensive Economic Cooperation Agreement (IMCECA)
Mauritius	India Mauritius Comprehensive Economic Cooperation and Partnership Agreement
Sri Lanka	India Sri Lanka Free Trade Agreement (ISFTA)
Singapore	India Singapore Comprehensive Economic Cooperation Agreement
South Korea	India Korea Comprehensive Economic Partnership Agreement (IKCEPA)
Afghanistan	India Afghanistan Preferential Trade Agreement
Chile	India Chile Preferential Trade Agreement
Thailand	India Thailand Free Trade Agreement
SAARC	South Asian Free Trade Area (SAFTA)
ASEAN	ASEAN–India Free Trade Area (AIFTA)

Impact of FTAs on India

- **India has signed many FTAs with varying results**, contributing to a high trade deficit, with imports increasing more than exports.
- **Between 2017 and 2022, India's FTA exports grew by 31%, while imports surged by 82%,** revealing a utilization rate of around 25%, significantly lower than developed countries.
- **Ineffectiveness is attributed to** inadequate industry consultation during negotiations, resulting in a narrow understanding of potential impacts on sectors.
- **Tariff reduction under FTAs led to increased market access for partners**, but non-tariff barriers persisted, limiting Indian exporters' opportunities, as seen in the case of the FTA with Japan.
- **Certification complexities and Rules of Origin** hindered processes for exporters, adding to compliance costs.
- **Lack of comprehensive efforts to promote FTAs** among stake holder post-implementation resulted in underutilization of the agreements.
- **Performance disparities between India and FTA partners**, like South Korea and ASEAN, have affected progress, with challenges making importing more cost-competitive than domestic production.

Rules of Origin (ROOs)

They are used to determine **if products are eligible for duty-free or reduced duties** under the FTA rules even though they may contain **non-originating** (non-FTA) components.

India-UK bilateral relations

Political Relations	With strong **historical ties,** upgraded to a **Strategic Partnership (2004),** focusing on enhanced cooperation outlined in a Joint Declaration.
Defence Relations	They have reaffirmed and strengthened **Defence cooperation,** with **capacity building, technology development & transfers,** joint military exercises **(Ajeya Warrior-Army; Konkan-Naval; Indradhanush Force), intelligence sharing,** etc. at its core.

Economic and Commercial Relations	Joint Economic and Trade Committee (JETCO) since 2005 boosted ties; 2021 saw **USD 13.11 billion in total trade,** discussions ongoing for an India-UK free trade agreement.
Nuclear Cooperation	**Civil Nuclear Cooperation Declaration (2010) and Nuclear Collaboration Agreement (2015)** facilitate joint research and trade, totaling 3.2 billion pounds in commercial deals.
Education	S&T cooperation since 1996, **UK-India Education and Research Initiative (UKIERI)** from 2010, with around **50,000 Indian students** currently studying in the UK.
Culture	**Memorandum of Understanding on Cultural Cooperation (2010)** emphasizes cultural ties, with the **UK India Year of Culture** launched in 2017 at Buckingham Palace.
Climate and Environment	Collaboration on climate issues through mechanisms like the **Ministerial Energy Dialogue,** focusing on renewable energy, waste management, and electric mobility through the **India-UK Green Growth Equity Fund.** The UK will provide an **India Green Guarantee** to the World Bank, to unlock an additional **750 million pounds** for green projects across India, it was announced at the **COP26 Summit in Glasgow.**
Health	Integral health collaboration with a **Joint Working Group,** successful partnerships in Covid19 vaccine development, and joint efforts in pandemic preparedness, AMR, digital health, and Ayurveda.
Multilateral institution	India and UK cooperate at the **G7+, G-20 and UN.** UK **supports India's inclusion in UNSC as a permanent member.**

2.3. India-Qatar Relations

Current Context

Recently, **8 former Indian Navy personnel,** who had been employed by a company in Doha, **were handed the death penalty** by a local court in Doha in an **alleged case of espionage.**

About

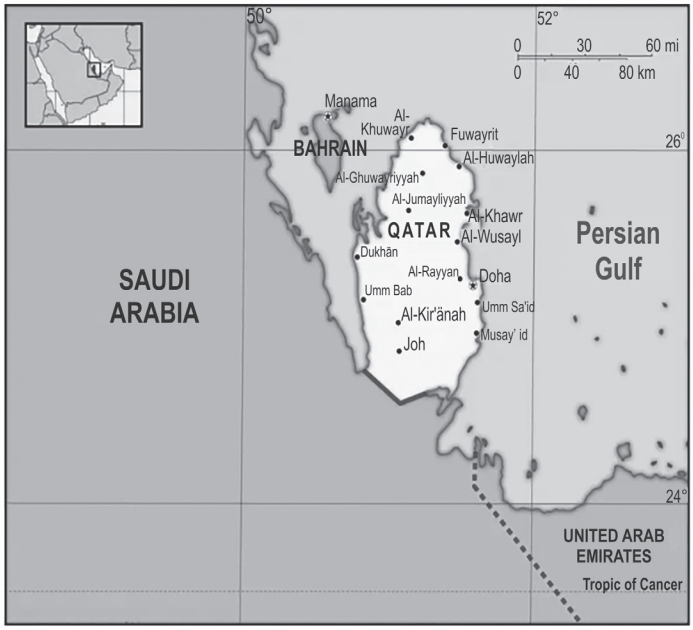
- The **trial was conducted in secrecy**, with limited information on the charges and evidence against the former Indian Navy servicemen, who were arrested in August 2022.
- They were **accused of breaching sensitive secrets during their work.**
- The verdict poses a significant challenge to India-Qatar relations, which have generally been stable.

What are India's options now?

- Pursue **legal appeals** in the case
- Resolve the case **diplomatically**
- **Political intervention at the Prime Minister's level** to request a pardon- if the Qataris agree to commute the sentences to life terms, India could use a **2016 agreement on transfer of sentenced prisoners,** to bring them back to India to serve their terms out.
- Build an **international campaign to appeal for clemency.**
- File a case at the **International Court of Justice** as it did with the **Kulbhushan Jadhav** case in Pakistan.

The Government of India's response

- The **Ministry of External Affairs (MEA)** expressed **deep shock at the verdict** and India most likely to take up the matter with Qatari authorities.
- India has ensured **legal representation** for the convicted individuals to ensure a **fair legal process.**



- India has sought **consular access** to the detained individuals, allowing Indian diplomats to provide necessary support and assistance.

India-Qatar relations

- **Bilateral Trade and Economic Relations:**
  - ✓ **LNG Dominance**: Qatar is a **major supplier of LNG** to India, accounting for **65% of India's global imports in this sector.**

- ✓ The value of **bilateral trade between Qatar and India crossed the $18bn level**.
- ✓ **India is among the top three export destinations for Qatar** and also one of the top three **import sources.**

- **Cultural Ties and Diaspora:**
  - ✓ India and Qatar have signed an **Agreement on Cultural Cooperation**. Cultural ties are actively nurtured, with **deep-rooted connections**.
  - ✓ In 2019, both countries celebrated the **India-Qatar Year of Culture** as part of their cultural collaboration.
  - ✓ **700,000 Indians live and work in Qatar** the **largest expatriate community**, where Indians are double the numbers of about 313,000 Qatari citizens, working as **professionals, doctors, nurses, teachers, bankers** apart from labour.
- **Yoga Promotion:**
  - ✓ Qatar has supported **India's Resolution at the United Nations,** designating June 21 as the **International Day of Yoga (IDY)**.
- **Defence Cooperation:**
  - ✓ The **India-Qatar Defence Cooperation Agreement** was signed in 2008 and extended in 2013.
  - ✓ **Bilateral Defence Engagement** includes participation in each other's conferences and events, ship visits, and participation in events like the **Doha International Maritime Defence Exhibition and Conference (DIMDEX).**
  - ✓ Qatar has expressed interest in India's **'Make in India'** initiative **for joint production of defence equipment**.
  - ✓ **Naval Exercise Zair-Al-Bahr**" (**Roar of the Sea**) is conducted between Indian and Qatar Navy.
- **Health Cooperation:**
  - ✓ **Covid-19 Assistance**: **Qatar Fund for Development (QFFD**) sent Covid medical relief material to India during the **second wave of Covid-19.**

2.4. India-Bangladesh Relations

Current Context

Prime Minister of India and his Bangladeshi counterpart **jointly inaugurated three India-assisted projects** via virtual mode.

Key Details on the Projects

1. **Rail link between Tripura's Nischintapur and Gangasagar**
   - ✓ India provided **grant assistance to Bangladesh** for the **Agartala-Akhaura Cross Border Rail Link.**
   - ✓ The entire project cost is being funded by India.
     - **The Ministry for Development of North East Region** (**DoNER**) funded the work on the **Indian side.**
     - The **Ministry of External Affairs** (**MEA**) funded the expense for the **Bangladesh side as 'Aid to Bangladesh'.**
2. **65 km Khulna-Mongla Port Rail Line**
   - ✓ A **broad-gauge route** was constructed between Bangladesh's Mongla Port and the existing rail network in Khulna.
3. **Unit II of the Maitree Super Thermal Power Plant in Bangladesh's Rampal**
   - ✓ The 1,320 MW Project was implemented by the **Bangladesh-India Friendship Power Company Ltd**, a **50:50 joint venture between India's NTPC and the Bangladesh Power Development Board.**

- **Impact of the Projects:**
  - ✓ Expected **to boost cross-border trade and significantly reduce the travel time** between Agartala and Kolkata via Dhaka from 31 hours to 10 hours.
  - ✓ Would further strengthen the **infrastructure development** collaboration between the two countries.
  - ✓ Boost **tourism, trade, and people-to-people exchanges** between the two countries.
  - ✓ Boost mutual efforts to ensure **peace and stability** in the **Northeast region of India** and establish **connectivity** between many Indian States in the region.

India-Bangladesh relations

- India was the **first country to recognise** Bangladesh and **establish diplomatic relations** after its independence in 1971.
  - ✓ India played a **key role in the Liberation of Bangladesh**

as it intervened militarily against the atrocities committed by Pakistan against the native Bengalis.

- Bangladesh's **geographical location** as India's eastern neighbor gives it **strategic importance**.
  - ✓ It provides India with **access to the Bay of Bengal and an important route for trade** and **connectivity with Southeast Asia.**

Aspects of Bilateral Cooperation

Sector	Efforts
Economic Cooperation	• Bangladesh is India's **biggest trading partner** in the subcontinent. • India has provided **duty free quota free access** to Bangladesh on all tariff lines except tobacco and alcohol under South Asian Free Trade Area **(SAFTA)** since 2011. • Bangladesh is **the biggest development partner of India,** with India extending **3 Lines of Credit (LOC)** to Bangladesh since 2010, amounting to US$ 8 billion. • Bangladesh and India in July 2023 launched a **trade transaction in rupees,** aimed at **reducing dependence on the US dollar** and **strengthening regional currency and trade.**
People to People Contacts	• As per, **India Tourism Statistics Report 2022** of Ministry of Tourism, Bangladesh was the **second largest amongst tourist generating markets** for India in the year 2021. • **Three borders haats** have been inaugurated: i. Nalikata (India) – Saydabad (Bangladesh) ii. Ryngku (India) – Bagan Bari (Bangladesh) iii. Bholagunj (India) – Bholagunj (Bangladesh)
Defence, Security and Borders	• The two conduct **Joint Army (Sampriti)** and **Naval (Bongosagar)** Exercises. • **Joint Working Group** on Boundary, Security • **Land Boundary Agreement (2015)** resolved major territorial issues.
Multilateral Cooperation	• SAARC • BIMSTEC • Indian Ocean Rim Association • Bangladesh was invited to the 18th **G20 Summit** hosted by India. • Symbiotic diplomatic engagement in the **United Nations** to boost South-South Cooperation. Bangladesh also supports **India's bid for permanent membership** at UNSC.
Energy and Connectivity	• The India-Bangladesh Friendship Pipeline Transports **High-Speed Diesel** to Bangladesh. • Three trains, the **Bandhan Express, the Maitree Express and the Mitali Express,** run between West Bengal and Bangladesh. • **Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicles Agreement** and Bangladesh's willingness to join the **India-Myanmar-Thailand trilateral highway project.** • **Protocol on Inland Water Transit and Trade (PIWTT)** was signed for the transportation of goods.

Challenges

- **Sharing of Transboundary River Waters:**
  - ✓ 54 common rivers but only two treaties have been signed- **Ganga Waters Treaty** and **the Kushiyara River Treaty.**
  - ✓ **The Teesta** River Dispute has been a major irritant.
- **Illegal Migration:**
  - ✓ **Migration of refugees and economic migrants**, remains a pressing issue.
  - ✓ This influx impacts **resources and security in bordering states** and opens up **porous borders** for terrorists to exploit. Eg. **During Rohingya crisis**.
  - ✓ Incidences of **cross border drug smuggling & trafficking** is an indirect result of this.
- **Growing Chinese Influence:**
  - ✓ Bangladesh is an active partner in the **Belt and Road Initiative (BRI).**
  - ✓ **China's increasing involvement** with Bangladesh could potentially undermine India's regional standing and impede its strategic aspirations.
- **Cross-Border Security Concerns:**
  - ✓ Cross-border security challenges, including **smuggling and illegal activities**, require continuous efforts to enhance border management and cooperation between security forces.

Way Forward

- **Resolution of Outstanding Issues**: Address any outstanding issues through **diplomatic dialogue and negotiation.** This includes historical and territorial matters that may be a source of contention.
- **Water Sharing:** Continue discussions on **equitable sharing of transboundary rivers**. **Collaborative approaches to water management** can help address concerns and contribute to sustainable development.
- **People-to-People Ties:** Promote **cultural exchanges, tourism, and educational programs** to deepen people-to-people ties.

2.5. India-Bhutan Relations

Current Context

Recently, **The King of Bhutan, Jigme Khesar Namgyel Wangchuck,** visited India at a time when Bhutan is engaged in crucial **border talks with China.**

Key Takeaways

- **India and Bhutan** agreed to discuss new routes of **Regional Connectivity**, and **Upgrade Border and Immigration Posts** for a **Smart City at Gelephu** on the border between **Bhutan and Assam.**
- The two sides agreed to explore **a second rail link** for about 18 km between **Samtse (Bhutan) and Banarhat (West Bengal).**
- They designated the **Darranga-Samdrup Jongkhar border crossing** between Assam and Bhutan's less developed South Eastern district as an **Immigration Check Post,** to enhance connectivity, and promote tourism.
- The two sides agreed to **strengthen trade infrastructure** with the upgradation of an existing land customs station at Dadgiri (Assam) to a modernised **Integrated Check Post.**

Backdrop of the Visit

- Last month, Bhutan and China held the 25th Round of Bilateral Border Talks in Beijing and Bhutan made two declarations that startled India-
  - ✓ Seeking a quick settlement
  - ✓ Rapprochement with China at the earliest.
- They began active engagement with the "Three-Step Roadmap" to resolve border disputes being signed in 2021.

Significance of India-Bhutan ties

The basic framework of bilateral ties is the Treaty of Friendship and Cooperation (1949) which was updated in 2007.

Area of Cooperation	Significance
Strategic	• Bhutan's location makes it an important buffer state for India's security interests. • Bhutan supported India's SAARC boycott due to State-Sponsored Terrorism by Pakistan. • Bhutan played a crucial role in allowing Indian troops to enter its territory to resist Chinese incursions during Doklam crisis (2017).
Economic	• India is Bhutan's largest trading partner, and major export destination. • India has been instrumental inw assisting Bhutan in developing its hydropower projects. • India also provides Bhutan with financial assistance for its development projects.
Cultural	• Buddhist connect: Both have a significant Buddhist heritage, and Buddhism plays a central role in the cultural and spiritual life of the people in Bhutan. • India has provided assistance to Bhutan in preserving its cultural heritage. • Prominent institutions include Nehru-Wangchuk Cultural Centre, India-Bhutan Foundation etc.
Sustainability	• India provides assistance to support Bhutan's aspirations of remaining carbon neutral.

Challenges

- **China's Growing Influence:**
  - ✓ China's increasing presence in Bhutan, particularly along the disputed border between Bhutan and China, has raised concerns in India.
- **Hydropower Projects:**
  - ✓ While India has supported Bhutan in developing its hydropower potential, there may be occasional challenges related to the **pace of project implementation, pricing, and revenue-sharing agreements.**
- **Trade Imbalances:**
  - ✓ India is Bhutan's largest trading partner, accounting for **over 80% of Bhutan's total imports and exports**. The trade deficit with India may sometimes be a point of concern.
- **Cross-Border Issues:**
  - ✓ Occasionally, cross-border issues, such as those related to **security, migration, illegal trade etc may arise**.

Way Forward

- **Enhanced Economic Cooperation:**
  - ✓ Strengthen economic ties through **diversification of trade and investment**. Exploring new sectors and **encouraging private sector engagement** can contribute to a more balanced economic relationship.
- **People-to-People Ties:**
  - ✓ Promote **cultural exchanges, educational programs, and tourism** to deepen people-to-people ties. Educational and cultural exchanges can enhance mutual understanding and friendship.
- **Security Cooperation:**
  - ✓ Strengthen security cooperation to address common challenges in the region. **Regular dialogues and joint exercises** can enhance **mutual understanding and coordination**.

2.6. War in Myanmar

Current Context

Myanmar's **anti-junta forces** have stepped up their actions as part of **'Operation 1027',** prompting the military to strike back.

Key details

- **The UN estimates that 1.7 million** people have been forced out of their homes.
- The striking success of **the Three Brotherhood Alliance (an alliance of three ethnic armed groups)** in areas along the border with China has emboldened other opposition forces around Myanmar.
- The junta has also **lost control of much of the border with India.** Ethnic Chin insurgents dominate their own state, and recently captured the border town of Rikhawdar.
- A civil war has been raging in Myanmar following **a military coup in February 2021**. The fighting between the **country's Army and pro-democracy groups**.
- The junta is also **facing regional isolation, especially in ASEAN**.
- **India's concerns on current events:**
  - ✓ India shares a **1,640-kilometre border** with a number of **northeastern states**, including **Nagaland and Manipur**, and the impact of Myanmar's violence being felt in India.
  - ✓ The violence has forced people to **flee to Mizoram**. Indian authorities worry that the **large-scale influx** could **change dynamics in the state** and further caused strife between the warring Meiteis and Kukis in the state.

Operation 1027

- Operation 1027 is an ongoing joint military operation conducted by the Three Brotherhood Alliance, a military coalition composed of three ethnic armed organisations in Myanmar:
  - ✓ Arakan Army (AA),
  - ✓ Myanmar National Democratic Alliance Army (MNDAA),
  - ✓ Ta'ang National Liberation Army (TNLA).
- Objective: To eradicate the oppressive military dictatorship.

Areas of cooperation between India and Myanmar

- **Trade and economy:**
  - ✓ **Bilateral trade** has grown from $12.4 million in 1980-81 to $2.18 billion in 2016-17.
  - ✓ Myanmar is also the beneficiary of a **duty-free tariff preference** scheme **for least-developed countries (LDCs).**
  - ✓ Some Indian companies such **as Essar, GAIL, and ONGC Videsh Ltd**. have invested in Myanmar's energy sector.
- **Connectivity:**
  - ✓ India is building the **Kaladan Multi-Modal Transit Transport** to link **Kolkata to Sittwe** in Myanmar and then from Myanmar's Kaladan river to India's north-east.
  - ✓ **India, Myanmar, and Thailand** are building the **Asian Trilateral Highway**, which will connect India to ASEAN.
- **Development assistance:**
  - ✓ India has extended **$2 billion in soft loans**. It has offered to help Myanmar with **developmental assistance** in the areas it wants rather than be prescriptive.
  - ✓ Assistance in **setting up institutions** for **higher learning and research**, namely—the Myanmar Institute of Information Technology, etc.
- **Defence cooperation:**
  - ✓ **India-Myanmar Bilateral Army Exercise(IMBAX)** is aimed at building and promoting closer relations with armies.
  - ✓ Myanmar is a key partner in the fight to **end insurgency in India's northeast**.
- **Multilateral partnership**
  - ✓ Myanmar is also a key component of India's strategy to **bridge South and South-East Asia** through **BIMSTEC**.
  - ✓ Myanmar's membership of **ASEAN, BIMSTEC, and Mekong Ganga Cooperation** has introduced a regional/sub-regional dimension to bilateral relations and imparted added significance in the context of **our "Act East" policy.**

2.7. US-China Ties Revamp

Current Context

Chinese President Xi Jinping and United States President Joe Biden finally had a **face-to-face meeting** in San Francisco on the sidelines of the **Asia-Pacific Economic Partnership** summit on 15 November.

About

- Despite previous tensions, the U.S. and China are showing **signs of improved communication**.
- The **Biden administration** aims to establish guardrails **to maintain a stable relationship with China.** However, China remains skeptical and feels contained by the U.S
- The U.S. currently holds a strong **economic position compared to China.**
  - ✓ The Biden administration has strengthened traditional alliances in Europe and the Indo-Pacific region.
- **China's influence on Iran**, which indirectly controls Hezbollah in Lebanon, could play a role in conflicts in West Asia.
  - ✓ Cooperation between the U.S. and China may help promote restraint and stability in the region.
- The **climate of truculence** is **obstructing effective cooperation**, and a Biden-Xi summit is seen as a potential starting point for improving bilateral ties.
- **Taiwan is a critical factor** in the regional dynamics, given its complex position in the U.S.-China relationship.

Asia-Pacific Economic Cooperation

- APEC is an inter-governmental forum that promotes trade and economic cooperation in the Asia-Pacific region. It was founded in 1989 and has 21 member economies.
- APEC's work is guided by the APEC Putrajaya Vision 2040, which is for an open, dynamic, resilient and peaceful Asia-Pacific community by 2040.
- APEC's member economies are home to more than 2.9 billion people and make up over 60 per cent of global GDP.
- India is not yet a member of APEC.

US-China Relations

Background

- **Diplomatic Ties**: Establishment **of diplomatic ties between the U.S. and China in 1979**.
- **Economic Enmeshment**: Initial focus on **economic complementarity and strategic convergence.**
- **China's Rise**: China's transformation into the world's second-largest economy and military power.
- **Undermining US Dominance:** China's efforts to undermine U.S. global dominance amid perceived U.S. decline.

Decoupling to De-risking

- **Trump Administration** Initiated **a trade war** to address the **bilateral trade imbalance**.
- **Decoupling**: Shift in U.S.-China relations towards **reducing interdependence**.
- **Biden's Five Noes**: Biden's approach emphasizing not seeking a **new Cold War**, changing China's system, or disturbing cross-Strait status quo.
- **De-risking**: Recent shift to focus on **resilient supply chains and reducing coercion** vulnerabilities.

Dimensions of the Sino-US Conflict

- **Ideological Dimension:** U.S. framing of the conflict as **democracies vs. autocracies.**
- **Expanding Coalition:** Biden's approach to broaden the coalition beyond democracies.
- **China's Counter-Narrative**: China asserting the superiority of its system and offering an **alternative global order.**
- US President announced an **India-Middle East-Europe Economic Corridor (IMEC),** which seeks to counter the inroads China has made through its **Belt and Road Initiative (BRI).**
- The U.S. boycotts the **Beijing Winter Olympics** over **human rights concerns**, with some other countries following suit.

Trade and Technological Front

- **China's Strategy**: Leveraging **economic dependence** and backlash against trade cooperation.
- **Biden's Adaptation**: Reevaluating free trade agreements and addressing domestic inequality, the China challenge, and new technologies.
- **U.S. restricts advanced chip exports** to China, citing military and human rights concerns, affecting both American and foreign entities, potentially impacting China's chip industry. China views this as a self-isolating U.S. move.

Power Battle in Asia

- **China's Actions**: Undermining U.S. alliances in Asia and challenging American military presence.
- **U.S. Response**: Rebuilding traditional alliances, forming new partnerships, and pursuing regional coalitions.
- **Taiwan Conflict**: U.S. support for Taiwan under the Taiwan Relations Act.

Likely impact on India and India's position

- India finds itself in a **complex position amidst these global shifts**. It faces persistent **border tensions with China**.
- India's concerns about **G-2 or Sino-American collaboration in Asia**.
- According to experts, **'a resumption of some US-China military cooperation, and the modest thaw in US-China relations that entails, can potentially benefit India directly'**.

2.8. 10th ASEAN Defence Ministers' Meeting

Current Context

Recently, 10th ASEAN Defence Ministers' Meeting-Plus (ADMM-Plus) took place in Jakarta, Indonesia

Key points

- The meeting is being hosted by **Indonesia**, which **is chairing ADMM-Plus**.
- **Defence Minister of India** represented India in the meeting.
- The meeting took place as hostilities between the **Army and rebel groups in Myanmar** are intensifying and **refugees from Myanmar are flooding into Mizoram,** India.

About ASEAN

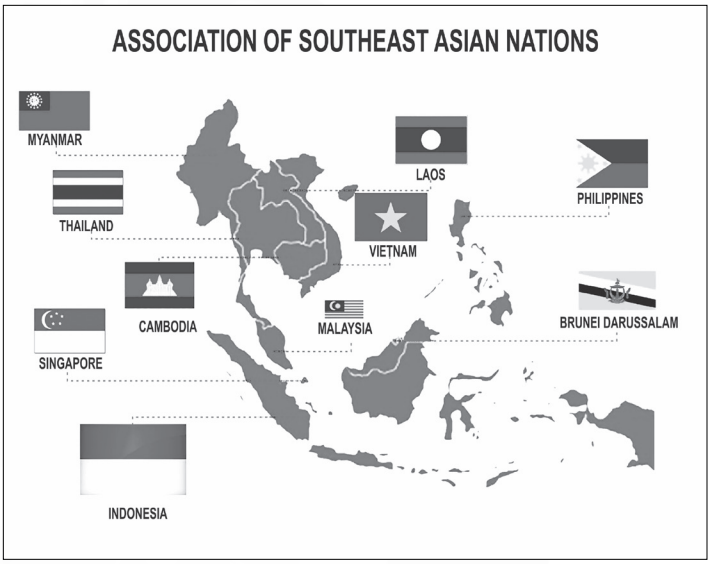
- **ASEAN (Association of Southeast Asian Nations)** is a Southeast Asian **regional organization** with **ten member** countries.
- **On August 8, 1967**, the foreign ministers of Indonesia, Malaysia, the Philippines, Singapore, and Thailand signed the **ASEAN Declaration (Bangkok Declaration).**
- **India became the dialogue partner** of the **ASEAN in 1992**

ASEAN's Timeline

1967	The founding fathers signed the ASEAN Declaration to formalize the organization.
1990	Membership in the organisation increased with the addition of-(1984) Brunei, (1995) Vietnam, (1997) Laos and Myanmar, (1999) Cambodia were all included
1995	Participants agreed to create a Nuclear-Free Zone in Southeast Asia (Treaty of Bangkok).
1997	The ASEAN Vision 2020 has been adopted.
2003	The Bali Declaration II for the establishment of an ASEAN Community.
2008	The ASEAN Charter goes into effect, making it a legally binding agreement.
2015	The ASEAN Community was formed.

ADMM- Plus

- ASEAN and its **eight Dialogue Partners** (**Australia, China, India, Japan, New Zealand, the Republic of Korea, Russia, and the United States**) established ADMM-Plus as a platform.



- The inaugural summit was held on **October 12, 2010 in Ha Noi, Vietnam.**
- Since 2017, ADMM-Plus has **meets annually** to improve dialogue and cooperation.

Objectives and Significance

- **Capacity Development:** Assist ASEAN Member States in developing capacity to address common security concerns while taking into account diverse capacities.
- **Transparency:** Increases mutual trust and confidence among defense establishments through greater dialogue and transparency.
- **Regional peace and stability:** Tangible improvements by addressing transnational security concerns through defense and security cooperation.
- **ASEAN Security Cooperation**: Helps to establish an ASEAN Security Community in accordance with the Bali Declaration II, fostering peace, stability, democracy, and prosperity.
- **Vientiane Action Plan:** Facilitates the implementation of the Plan, which aims for a peaceful, secure, and prosperous ASEAN.
- **Bilateral discussions:** Ministers hold bilateral discussions with fellow Member States to discuss wide range of issues.

Significance for India

Economic

- **The 3 Cs-Culture, Connectivity, And Commerce** will influence India's relations with ASEAN.
- establishing communication between the northeastern states of India and ASEAN.
- Aiming to create the **largest free trade area** in the world with over one-third of the world's GDP and trade, India is a part of the **ASEAN-led Regional Comprehensive Economic Partnership (RCEP).**
- **Security:** Together, India and ASEAN can tackle issues like **tax evasion, cyber security threats, and financing of terrorism.**
- India has to work with ASEAN to create a **rules-based regional security architecture**.

Geo-Strategic

- India could **counter Beijing's growing influence** by forming a partnership with ASEAN states.
- The **Kaladan MultiModal Transit Transport Project** is an initiative between ASEAN and India to enhance water connectivity.
- The growth and development of the **Indo-Pacific region** heavily depends on **ASEAN and India's maritime cooperation.**

Conclusion

Despite its diversity, ASEAN plays an important role in maintaining **regional peace and security** due to its **neutrality, aiding the organization's ability** to maintain its importance in the region.

2.9. Indo-Pacific Economic Framework (IPEF)

Current Context

IPEF members have recently signed a **Supply Chain Resilience Agreement** and also concluded negotiations on **Fair & Clean Economy Agreement.**

Indo-Pacific Economic Framework (IPEF)

- It is a **US-led initiative** that aims to strengthen economic partnership among participating countries to enhance resilience, sustainability, inclusiveness, economic growth, fairness, and competitiveness in the Indo-Pacific region.
- **The IPEF has 14 members:** Australia, Brunei Darussalam, Fiji, India, Indonesia, Japan, Republic of Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, the U.S. and Vietnam.
- The members represent **40% of the global GDP and 28% of the global trade** in goods and services.
- Countries are **free to join (or not join) initiatives under any of the stipulated pillars** but are expected to adhere to all commitments once they enroll.
  - ✓ India has chosen **to opt out from joining the trade pillar (pillar 1**) only as it is apprehensive of the possibility of binding conditionalities on matters like labour and public procurement.

Four pillars of the Indo-Pacific Economic Framework (IPEF) for Prosperity

Areas	Content
1 Trade	A new and creative approach to trade and technology policies, including cooperation on digital economy
2 Supply Chains	Enhancement of the transparency, diversity, and security of supply chains, coordination of crisis responses, improvement of logistics efficiency, and securing of access to semiconductors and important mineral resources
3 Clean Energy, Decarbonization, and Infrastructure	Development and promotion of clean energy technologies, including evolution of technical cooperation, mobilization of funds, and support and technical cooperation for infrastructure development
4 Tax and Anti-Corruption	Establishment of tax systems that conform to multilateral standards and agreements and systems to prevent money laundering and bribes

Significance of IPEF for India

- **Participation in regional trade**: The IPEF will help **increase India's participation in regional trade** and control the damage caused by **the RCEP withdrawal** as all the IPEF members save India and the US are signatories to the RCEP.
- **Countering China**: China not being a member gives the group a distinct **geopolitical flavour** since all its members share worries about **China's muscular nationalism and expansionist ambitions**.
- **Better economic opportunities**: IPEF is providing India another opportunity to be part of a mega economic arrangement, but outside the influence of China.
- **Participation in resilient supply chains:** India can consider members as **alternative sources for its raw materials requirements.**

Concerns

- **More unilateral and not consensus-based:** Unlike traditional trade blocks where the agreements are the results of arduous negotiations by the members, the IPEF is **driven primarily by the USA**.
- **Lack of clarity:** IPEF is not a **Free Trade Agreement** nor will it discuss **tariff reductions** or increasing market access, raising questions about its utility.
- **Environment and Labour standards:** The IPEF imposes **stricter environment and labour standards** that are way above the prevailing norms in India.

India's position on IPEF

- India has **joined all pillars of the IPEF except that on trade.**
- **India emphasised enhanced collaboration** to realise the collective aims of IPEF, particularly on mobilising affordable financing for clean economy transition and enhancing technology cooperation.
- **India also urged for the early implementation of the envisaged cooperative** work under IPEF, including on the Biofuels' Alliance suggested by India.

- **Data Localization:** India strongly supports data localization for **protection of personal data and upholding national security**. On the other hand US has expressed concerns about India's data localization policies, arguing that they could create barriers to the free flow of data and hinder the operations of U.S. technology companies operating in India.
- **Compliance with WTO rules:** In the absence of an FTA, WTO rules will not permit granting of preferential treatment amongst IPEF members.

Supply Chain Resilience Agreement

- **Objectives include**
  - i. Framework to build their collective understanding of significant supply chain risks.
  - ii. Improve crisis coordination and response to supply chain disruptions.
  - iii. Facilitate cooperation.
  - iv. Promote regulatory transparency in critical sectors, identified by the member countries.
- **The pact will come into force** after implementation of the agreement by any five member countries.
- **It is expected to make IPEF supply chains more resilient, robust and well-integrated,** and contribute towards economic development and progress of the region as a whole.
- **It is also aimed at helping reduce dependence on China,** and shifting production of critical sectors and key goods to member countries.
- **The other benefits include-** Supply chain diversification, Mobilisation of investments, Deeper integration of India in global value chains, Support to micro, small and medium enterprises (MSMEs), Creation of a seamless regional trade ecosystem which would facilitate the flow of Indian products.

2.10. UNSC Resolution for Urgent Humanitarian Pauses and Corridors in Gaza

Current Context

The UN Security Council has adopted a resolution calling for "**urgent and extended humanitarian pauses**" in Gaza to address the escalating crisis for Palestinian civilians during Israel's aerial and ground attacks.

Key details

- Adopting **Resolution 2712 (2023),** UN Security Council Calls for '**Urgent and Extended' Humanitarian Pauses in Gaza** and **Immediate Release of Hostages** among notable things**.**
- The vote in the **15-member council was 12-0 with the United States, United Kingdom and Russia abstaining.**
- The **U.S. and U.K. abstained** because of the Resolution's failure to condemn Hamas' surprise cross-border attacks into Israel on October 7.
- **Russia abstained** because of its failure to demand a humanitarian ceasefire, which Israel and the United States oppose.
- The Resolution was **sponsored by Malta.**
- **Humanitarian pause:**
  - ✓ The resolution calls for humanitarian pauses and corridors throughout the Gaza Strip for a "sufficient number of days" for **unhindered access by the U.N., Red Cross and other aid groups to get water, electricity, fuel, food and medical supplies to all those in need**.
  - ✓ It says the pauses also should allow for **repair of essential infrastructure** and enable urgent **rescue and recovery** efforts.

Recent developments

- The **United Nations was forced to stop deliveries of food and other necessities** to Gaza on Friday and warned of the growing possibility of widespread starvation after

The United Nations Relief and Works Agency for Palestine Refugees (UNRWA)

- It is funded almost entirely by **voluntary contributions** from UN Member States.
- UNRWA also receives **some funding from the Regular Budget** of the United Nations, which is used mostly for international staffing costs.
- UNRWA was established by **United Nations General Assembly Resolution 302 (IV) of 8 December 1949** to carry out direct relief and works programmes for Palestine refugees. The Agency began operations on 1 May 1950.

United Nations Security Council (UNSC)

- The Security Council was established by **the UN Charter in 1945.** It is the apex body of the United Nations and one of its' **six principal organs.**
- Its primary responsibility is to work **to maintain and ensure international peace and security.**
- The council has **15** members: The **five permanent members** and **ten non-permanent members** elected for **two-year** terms.
- The **five permanent members are the United States, the Russian Federation, France, China and the United Kingdom.**
- Each year, the General Assembly elects **five non-permanent members** (out of ten in total) for a two-year term. The ten non-permanent seats are distributed on a **regional** basis.
- **UNSC resolutions: UNSC** resolutions are **legally binding,** unlike General Assembly resolutions.

Internet and telephone services collapsed in the besieged enclave because of a lack of fuel.

- **The communications blackout**, now in its second day, largely cuts off Gaza's **2.3 million** people from one another and the outside world — and paralyses the coordination of aid, which humanitarian groups were already struggling to deliver because of the fuel shortage.
- The **UN Relief Agency for Palestinian Refugees, known as UNRWA**, was unable to bring in its aid convoy on Friday (18 November 2023).

2.11. Legality of using White Phosphorus

Current Context

Recently, global human rights organisations **Amnesty International** and **Human Rights Watch** have alleged that the **Israel Defence Forces (IDF)** used **white phosphorus munitions** in Gaza and Lebanon.

What is the White Phosphorus?

- White Phosphorus, also known as **Yellow Phosphorus**, is a **waxy solid** with an appearance that ranges from **white to yellow**, accompanied by a distinct **garlic-like odour.**
  - ✓ Notably, it possesses the **unique property of igniting spontaneously** when exposed to air at temperatures **exceeding 30°C.**
  - ✓ Once ignited, **it continues to burn until fully oxidized or deprived of oxygen**.
  - ✓ It poses **environmental dangers** and also has the potential to **cause severe burns and suffering**.
- Its combustion results in the **production of dense, white, and highly irritating smoke**, which contains a mixture of phosphorus oxides, making it a substance of particular interest in various applications.
- **Industrial Uses:**
- **Phosphoric acid**
  - ✓ **Phosphates**
  - ✓ Other industrial products
- **Consumer Uses:**
  - ✓ **Rodenticide:** Historically used as a rodenticide.
  - ✓ **Fireworks:** Has applications in fireworks displays.
- **Military Applications:**
  - ✓ Primarily used **as a smokescreen**. It creates a **visual obscurant** to **conceal troop movements** on the ground.
  - ✓ It can **interfere with infrared optics** and **weapons tracking systems**. This disruption protects forces from guided missile attacks.
  - ✓ White phosphorus can also function as an **incendiary weapon**.

When were white phosphorus munitions used before?

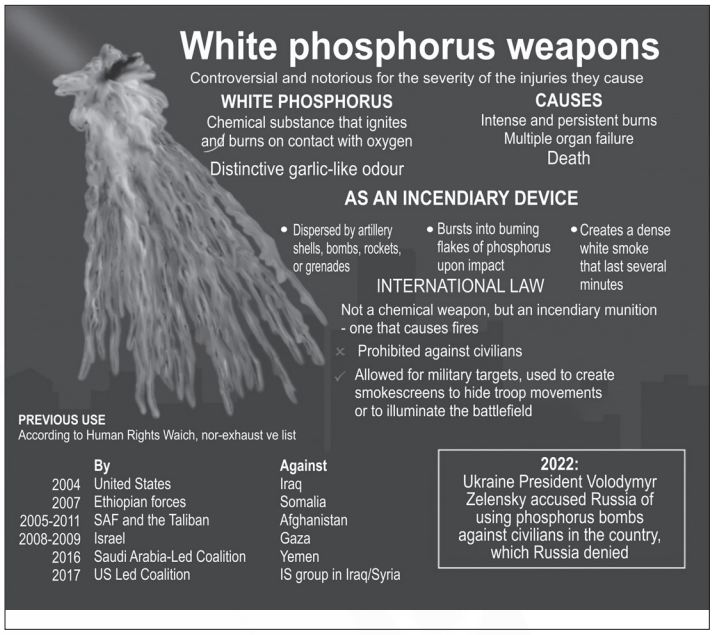
- White phosphorus munitions have a historical legacy, from use by **Irish nationalists** in the late **19th century** to extensive deployment **by British and Commonwealth forces during World War I.**
- Used in global conflicts, including the **Normandy invasion in World War II**, the **US invasion of Iraq in 2004**, the **Syrian Civil War (2013-2017**) and the **Nagorno-Karabakh conflict.**
- Most recently, accusations arose concerning **Russia's use of white phosphorus bombs** during the **Ukraine invasion last year.**

White Phosphorus and International Treaties

- **Protocol III under the Convention on Certain Conventional Weapons, 1983(CCCW):**

- ✓ The Convention(CCCW) imposes **restrictions on the use of incendiary weapons, including white phosphorus**, with the aim of safeguarding civilians.
- ✓ **Palestine and Lebanon** have joined Protocol III, while **Israel has not ratified the protocol.**

- **Chemical Weapons Convention, 1997 (CWC):**
  - ✓ CWC comprehensively **bans chemical weapons**.
  - ✓ **White phosphorus**, while a chemical agent, **is not covered by the CWC** when used as an incendiary weapon rather than for chemical warfare.
- **Regulation Under International Humanitarian Law (IHL):** Their use is regulated under International Humanitarian Law (IHL).



Way Forward

- **Strengthening Protocol III under the Convention on Certain Conventional Weapons (CCW) would be a progressive step** in terms of legal and procedural processes, making it more binding for states and reducing ambiguity in its application. This would help in identifying violations more easily and ensuring compliance with international humanitarian law.

2.12. AI Safety Summit

Current Context

The **United Kingdom,** recently, hosted a major **artificial intelligence (AI) summit**, bringing together **political leaders and tech experts** to discuss both the promise and potential perils of this rapidly advancing technology.

About

- The event was held at **Bletchley Park**, known for its historical significance in **codebreaking during World War II**.
- The event aimed **to establish a framework for mitigating AI risks and realizing the opportunities** it offers.
- **The First International AI Safety Summit** focused on cutting-edge '**frontier AI' that some scientists warn could pose a risk to humanity's very existence.**
  - ✓ **"Frontier AI"** refers to highly capable foundation **generative AI models** that could pose severe risks to public safety.
- The **next AI Safety Summit** will be hosted by **South Korea** in six months, followed by another in six months hosted by **France.**

Key Takeaways from the Global AI Summit 2023

- **Bletchley Declaration**: 28 countries signed the declaration, **pledging to work together on AI safety and transparency.**
- **Elon Musk's warning**: Musk reiterated his concerns about the existential dangers of AI.
- **DeepMind co-founder's view**: Mustafa Suleyman suggested that a **temporary halt in AI development** might be necessary in the near future, but assured that current AI models are not a major risk.
- **UK AI supercomputer investment**: The **UK government announced a £225 million investment** into a new AI supercomputer called Isambard-AI.
- **Global AI dominance up for grabs**: The US, EU, and China are also vying for AI leadership, creating a high-stakes technological arms race.

Global interest towards AI safety and regulation

- **India's stand**: India maintained that AI should be guided by **principles of safety & trust for users, and accountability for platforms"**.
  - ✓ India currently chairs the **Global Partnership on AI**, a coalition of 15 governments established in 2020, emphasizing its **commitment to international cooperation in AI regulation.**
- **United States** announced to launch its own **AI safety institute,** demonstrating a commitment to AI safety initiatives.
- **China**: China expressed its willingness **to enhance dialogue and communication on AI safety** to build an international governance framework. Beijing had previously called for a **Global AI Framework at the Belt and Road Forum.**
- **UK**: U.K. Prime Minister Rishi Sunak aimed to lead

in AI safety globally, with the establishment of the **AI Safety Institute in the UK.**

- **EU**: The European Union (EU) has proposed **a new AI Act** that classifies artificial intelligence based on use-case scenarios, considering invasiveness and risk factors.

Global initiatives

- **Project Resilience**: A public AI utility to **help communities prepare, intervene, and respond** to threats.
- **Global Partnership on Artificial Intelligence (GPAI)**: It provides a **mechanism for sharing multidisciplinary research and identifying key issues among AI practitioners**, facilitating international collaboration and promoting the adoption of trustworthy AI.
- **G7 Digital & Tech Ministers** met within the **Hiroshima Artificial Intelligence (AI)** Process, in a stride **to foster international cooperation in the realm of AI**.
- The US made its **Political Declaration on the Responsible Use of Artificial Intelligence and Autonomy** in February, establishing **standards for the lawful, responsible use** and development of military AI.

'Bletchley Park'

During World War II, Bletchley Park's Victorian mansion served as Britain's secret codebreaking headquarters. They intercepted and decoded Nazi messages, including orders from Adolf Hitler. By 1943.

- **India's initiatives**
  - ✓ **National AI Strategy**: A plan to identify and develop AI applications with maximum social impact, learn from the best of the world in AI technology advancements, and democratize access to and further development of AI.
  - ✓ **RAISE 2020 Responsible AI for Social Empowerment**: It is a platform for global technology leaders to discuss various aspects of artificial intelligence for social empowerment
  - ✓ **Vaishwik Bhartiya Vaigyanik (VAIBHAV) Summit:** It is a celebration of Science and Innovation from India and around the world. The Summit witnessed the participation of over 10,000 Indian Scientists and over 3,000 Academicians & Scientists of Indian Origin.

3. ECONOMY

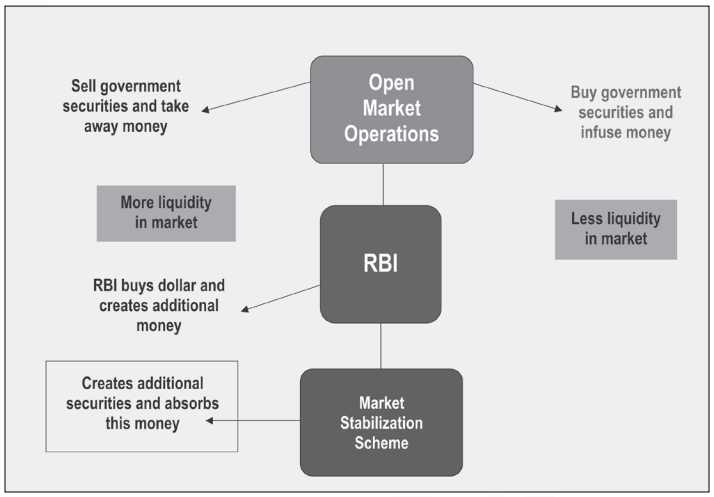
3.1. Open Market Operations (OMOs)

Current Context

RBI Governor stated that the Central Bank would consider **Open Market Operations** in order **to manage liquidity in the economy.**

About OMOs

- It's a **quantitative monetary policy tool** by the RBI to control the money supply in the economy.
- These are **market operations** conducted by RBI via **sale/ purchase of government securities to/from the market to adjust liquidity conditions** on a durable basis.
  - ✓ When there is **excess liquidity, RBI sells securities** to squeeze out liquidity.
  - ✓ When **liquidity is tight, RBI buys securities** to release liquidity.
- There are two primary types of Open Market Operations (OMO) based on the actions taken by central banks:
  - ✓ **Permanent Open Market Operations (POMO):** Continuous buying and selling of securities to manage money supply.
  - ✓ **Short-Term Open Market Operations (SOMO):** Temporary adjustment of the reserves available to the banking system, addressing transient changes in reserve requirements.
- Influence of Open-Market Operations on Interest rates
  - ✓ **Expansionary monetary** policy entails the **purchase of securities** and an **increase in the money supply.** Banks may then **lower their interest rates** on loans to encourage borrowing and spending
  - ✓ Conversely, if there's a **Contractionary Monetary Policy** by RBI via **selling of G-Secs,** interest rate increases.



Factors that may influence OMOs

- Inflation Targeting:
  - ✓ Central banks often use OMOs as a tool to achieve their **inflation targets**. If inflation **is rising above the target**, the central bank may conduct OMOs **to tighten liquidity** and **raise interest rates**.
- Economic Growth:
  - ✓ If the economy is **overheating,** central banks may conduct OMOs **to reduce liquidity, raise interest rates, and cool down economic activity.**
- Monetary Policy Objectives:
  - ✓ The primary objectives of the central bank, such **as price stability, full employment, and economic growth**, play a crucial role in determining the use of OMOs.
- Exchange Rate Considerations:
  - ✓ If a central bank is **trying to stabilize or influence the exchange rate**, OMOs may be used **to manage liquidity in the foreign exchange market**.
- Government Financing Needs:
  - ✓ If the **government requires funds**, the central bank may conduct **OMOs to inject liquidity into the system by purchasing government securities**.

3.2. RBI to regulate Cross-border Payment Facilitators

Current context

The Reserve Bank of India (RBI) has announced that **it will directly regulate all entities involved in cross-border payment** transaction for import and export of goods and services.

About

- RBI made it **mandatory for the non-banks** providing **Payment Aggregator-Cross Border services** to have a **minimum net worth of Rs 15 crore** at the time of applying to the RBI for authorization and a **minimum net worth of Rs 25 crore by March 31, 2026**.
- RBI has instructed banks to **close the accounts of unregistered cross-border payment aggregators** by July 31, 2024.
- This regulatory step aims **to combat the practice of small-scale imports of restricted items** through international e-commerce platforms.

Cross-border Payments

- Refers to **transactions** involving **individuals, companies, banks or settlement institutions** operating in **at least two different countries and are international transactions**. These payments are inclusive of **retail and wholesale transactions**.
- Hurdles in Cross-Border Payments
  - ✓ **Lack of standardization:** Creates inefficiencies in cross-border payments and create additional costs and delays in the processing of transactions.
  - ✓ **Complex processing of compliance checks:** Causing **delays and additional costs**.
  - ✓ **Legacy technology platforms:** Traditional banking systems still rely on legacy technology platforms, which can be slow and outdated.
  - ✓ **Long transaction chains:** Cross-border payments often involve **multiple intermediaries, which can lead to long transaction chains**.
  - ✓ **Funding costs:** Cross-border payments require funding in **multiple currencies. Exchange rate fluctuations** can also impact the cost of cross-border payments.
  - ✓ **Weak competition:** The **lack of competition** in the cross-border payments industry can contribute to **inefficiencies and high costs**.
- Other RBI initiatives for improving Cross-border transactions
  - ✓ **Legal Entity Identifier (LEI):** Earlier, RBI had introduced **Legal Entity Identifier (LEI)** for all cross-border transactions.
    - It is a **20-digit number** used to uniquely identify parties to financial transactions worldwide **to improve the quality and accuracy** of financial data systems.
    - It can be obtained from any of the Local Operating Units (LOUs) recognized by the **Global Legal Entity Identifier Foundation (GLEIF),** the organization entrusted with promoting LEI adoption and use.
    - LEI can be also obtained in India via Legal Entity Identifier India Ltd (LEIL), that is also recognized by the Reserve Bank as an LEI issuer.
  - ✓ **Central Bank Digital Currency (CBDC)**: As per RBI, CBDC also has the **potential for improving the cross-border transactions**.

Payment Aggregators

- Payment gateways/aggregators are the companies that provide the **technology infrastructure to handle online monetary transactions**.
- PAs let **e-commerce sites and merchants** accept various instruments from customers to complete their payment obligations.

Payment Aggregator-Cross Border' Entities

- The new regulations are expected to curb small-scale imports of restricted items through **international e-commerce sites**
- Payment gateways will be accountable for ensuring that they do not facilitate payment transactions for the import of any **restricted or prohibited goods and services**
- RBI has fixed a minimum **net worth of ₹15cr** for such entities, categorised as payment aggregator-cross border (PA-CB)
- If the amount involved exceeds **₹2.5 lakh,** the PA-CB must carry out **due diligence** on the buyer as well

Central Bank Digital Currencies (CBDCs)

CBDCs are a form of **digital currency** issued by a country's central bank. They are **similar to cryptocurrencies,** except that their value is fixed by the central bank and equivalent to the country's fiat currency.

- **Currently**, all Payment Aggregators (PA), which facilitate the processing of domestic transactions in online mode, come under the **ambit of RBI regulations**.
- Functions:
  - ✓ Payment Aggregators act as a **bridge between e-commerce sites and customers** for payment transactions.
  - ✓ They typically provide a **range of payment options to customers**, including credit and debit cards, bank transfers, and e-wallets.
  - ✓ They **collect and process payment information**, ensuring that transactions are secure and reliable.
  - ✓ **Examples** of payment aggregators include **PayPal, Stripe, Square, and Amazon Pay**.
- Key Features:
  - ✓ **Secure Payment Processing**: They use **advanced security measures** to ensure that transactions are safe and secure.
  - ✓ **Fraud Detection and Prevention:** They use **algorithms and machine learning to detect and prevent fraud**, reducing the risk of chargebacks and other payment disputes.
  - ✓ **Payment Tracking and Reporting:** They provide **detailed reports on payment transactions**, making it easier for businesses to manage their finances and reconcile their accounts.
  - ✓ **Integration with Other Systems**: Payment aggregators can **integrate with a range of other systems, such as accounting software and inventory management systems**, to streamline the payment process and make it easier to manage business operations.

3.3. RBI Tightens norms for Unsecured Retail Loans

Current Context

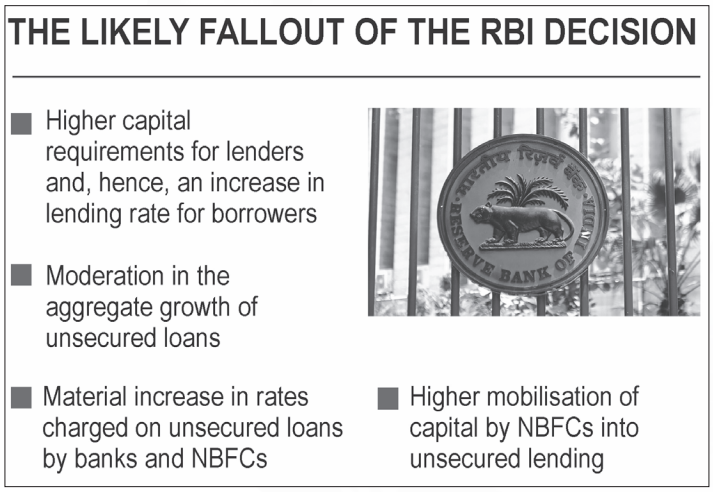
Recently, the **Reserve Bank of India (RBI)** tightened norms for **personal loans and credit cards** in the form of **higher capital requirements.**

Key details

- The central bank has raised the **risk weights for lenders and non-bank financial companies** (NBFCs), or the capital that banks need to set aside for every loan, **by 25 percentage points to 125% on retail loans.**
- The new risk weight will apply **to personal loans for banks** and **to retail loans for NBFCs.**
- The **housing, education and vehicle loans** as well as loans secured by gold and gold jewellery will be **excluded.**

Reasons for increasing Risk Weights on Consumer Credits

- The growth in retail loans, especially **unsecured** ones at 25% plus, and **increased lending to NBFCs** at 30% prompted the RBI's intervention.



- The central bank is **cautious about potential risks** and wants to preempt any negative consequences.

Likely impact of the RBI decision

- The banking industry will likely require **Rs 84,000 crore of excess capital** — or a five per cent increase — over the Rs 15.2 lakh crore capital requirement.
- This also means a 55-60 basis point increase in **CRAR (Capital to Risk-Weighted Assets Ratio).**
- Experts believe this will **increase the cost of borrowing for consumers.**
- **Shares of banks and Non-Banking Financial Companies (NBFCs)** slumped in response to the RBI's decision.
- **Large private banks** will see **higher impact** due to higher share of unsecured loans.
- The impact **on public sector banks** will be a tad **lesser than larger private banks.**
- It will **also lead to higher mobilisation of capital by NBFCs into unsecured lending** to cater to the additional capital requirements.
- Sudden withdrawal of banks and NBFCs from the consumer loan market may also enhance delinquency risks in this category.

Related terms and concepts

Risk weightage:

- Risk weightage is a measure used in the banking industry to assess the risk associated with different types of assets, including loans.
- The risk weight assigned to a particular asset influences the amount of capital a bank is required to hold as a buffer against potential losses.

Capital Adequacy Ratio:

- The capital adequacy ratio (CAR) is an indicator of how well a bank can meet its obligations. Also known as the capital-to-risk weighted assets ratio (CRAR), the ratio compares capital to risk-weighted assets and is watched by regulators to determine a bank's risk of failure.
- It's used to protect depositors and promote the stability and efficiency of financial systems around the world**.**
- According to Reserve Bank of India (RBI) norms, banks are required to maintain a minimum **Capital to Risk Weighted Assets Ratio (CRAR) of 9%** on an ongoing basis.

Unsecured Loan:

- An unsecured loan is a loan that doesn't require any type of collateral. Instead of relying on a borrower's assets as security, lenders approve unsecured loans based on a borrower's creditworthiness. Examples of unsecured loans include **personal loans, student loans, and credit cards.**

Non-Banking Financial Company (NBFC):

- A Non-Banking Financial Company (NBFC) is a company registered under the **Companies Act, 1956.**
- It is engaged in the business of **loans and advances, acquisition of shares/stocks/bonds/debentures/securities** issued by Government or local authority or other marketable securities.
- **It does not include** any institution whose principal business is that of **agriculture activity, industrial activity,** purchase or sale of any goods (other than securities) or providing any services and sale/purchase/construction of immovable property.

3.4. National Company Law Appellate Tribunal (NCLAT)

Current Context

Recently, **the Supreme Court** found that the **National Company Law Appellate Tribunal (NCLAT)** bench acted in **wilful defiance** of its orders in a case related to Finolex Cables.

About National Company Law Appellate Tribunal (NCLAT)

- National Company Law Appellate Tribunal (NCLAT) was constituted **under Section 410** of the **Companies Act, 2013** for hearing **appeals** against the orders of **National Company Law Tribunal(s) (NCLT).**
- **Objectives:**
  - ✓ NCLAT hears appeals against the orders passed by NCLT(s) **under Section 61 of the Insolvency and Bankruptcy Code, 2016 (IBC).**
  - ✓ NCLAT hears appeals against decisions/orders by the **Competition Commission of India** - Companies Act, 2013.
  - ✓ It also handles appeals against orders of the **National Financial Reporting Authority**
- **Composition:**
  - ✓ The NCLAT includes a **Chairperson, 3 judicial members, and 2 technical members**. It consists of a total of not more than eleven members.

Challenges associated with the functioning of the NCLAT

- **Backlog of Cases**: NCLAT was facing a substantial backlog of cases, leading to **delays in the resolution of appeals and petitions**.
- **Vacancies**: Vacancies in the NCLAT and the absence of a full complement of members could impact the tribunal's ability to handle the workload efficiently.
- **Technical Expertise**: Cases often involve complex financial and legal matters, thus ensuring necessary technical expertise is a challenge.
- **Resource Constraints**: Resource constraints, including budgetary limitations and infrastructure inadequacies, may hinder the efficient functioning.
- **Legal Interpretation:** The need for consistent **legal interpretation** and judgments is crucial, as inconsistencies can lead to uncertainty in corporate legal matters.
- **Appeal Process:** The process of appealing can be **time-consuming**, and the outcomes of these appeals can significantly impact businesses.

Way Forward

- **Increase staffing**: Hiring more judges and support staff to reduce case backlog and expedite the resolution process.
- **Technology adoption**: Implement modern case management systems and e-filing to streamline administrative processes and reduce paperwork.
- **Training and capacity building**: Regularly train judges and staff to keep them updated on legal developments and improve their skills.
- **Alternative dispute resolution (ADR):** Promote ADR mechanisms, such as **mediation and arbitration,** to resolve disputes outside the court system and reduce the burden on NCLT.
- **Clearer legislation**: Improve and clarify the **legal framework governing NCLT procedures** and operations to minimize ambiguity.
- **Infrastructure development**: Invest in modern infrastructure and facilities for NCLT offices to support their efficient functioning.

Insolvency and Bankruptcy Code, 2016 (IBC)

- The Indian Government introduced the IBC, 2016 to streamline **insolvency and bankruptcy laws** and address the issue of **Non-Performing Assets (NPA)** that had been adversely affecting the Indian economy.
- Insolvency refers to the **inability of individuals or companies to repay their debts,** while bankruptcy involves a court declaring an entity insolvent and issuing orders to resolve the situation and protect creditors' rights.
- It's a **legal declaration of financial inability** to settle debts.

Competition Commission of India

- Competition Commission of India has been established by, **The Competition Act, 2002.**
- To **eliminate practices having adverse effect on competition, promote and sustain competition,** protect the **interests of consumers** and ensure freedom of trade in the markets of India.

Related News

Recently, the **Insolvency and Bankruptcy Board of India (IBBI)** proposed a **"Two-Part Resolution Plan"** to address **the swift takeover of stressed firms by winning bidders** while preventing asset value erosion.

Two-Part Resolution Plan

- First Part - Quick Takeover:
  - ✓ It aims to facilitate the swift takeover of the stressed

firm by allowing the National Company Law Tribunal (NCLT) to approve the resolution plan.
- ✓ This provides control to the acquirer, enabling the sick firm to resume or accelerate its operations without delay.
- ✓ It includes the resolution amount, plan terms etc.

- Second Part - Resolution Proceeds:
  - ✓ This part addresses the distribution of resolution proceeds among various stakeholders.
  - ✓ It specifies how the plan addresses the interests of all stakeholders and outlines payments for their admitted claims.

3.5. Indian Companies can now list on Foreign Stock Exchanges directly

Current Context

The Indian government recently **permitted Indian companies to directly list on foreign exchanges**, following the opening of **GIFT City**.

Key Details

- The new amendment in the **Companies Act, 2020** has come into force with effect from October 30.
- Amendments in **Section 23 of the Act** provide **public companies the flexibility** to list their securities on foreign stock exchanges and also include provisions for exemptions by the Central Government.
- Overseas listings by domestically listed entities are at present carried out through **American Depository Receipts (ADRs)** and **Global Depository Receipts (GDRs)**, which companies like **Infosys and Wipro** have done.
- Some of the Indian companies have also gone ahead and done **SPAC (Special Purpose Acquisition Companies)** issues.

Significance

- It will enable the **direct listing of listed and unlisted companies on the IFSC exchange**.
- Help Indian companies **attract a large and diverse pool of capital, and improve corporate governance.**
- This should also help the government's plan to **reverse flip holding structures** of Indian companies as well.
- This will help **startups looking to raise funds from public markets but outside of the country**.

Challenges Involved

- **Compliance** with the **laws and rules** of the foreign jurisdiction.
- **SEBI has to synchronise its regulatory architecture** with the leading global stock exchanges.
- Exposure to the **currency fluctuations and market volatility** of the foreign exchange can affect their share price and returns.

GIFT City

- GIFT City is Gujarat International Finance Tec-City.
- It consists of a multi-service Special Economic Zone (SEZ), which houses India's first International Financial Services Centre (IFSC) and an Exclusive Domestic Tariff Area (DTA).
- It is envisaged as an **integrated hub for financial and technology services** not just for India but for the world.

American Depository Receipts (ADR)

They are a type of negotiable instrument that are basically stocks of foreign companies which are traded in US stock markets.

Global Depository Receipts (GDRs)

Also known as international depository receipt (IDR), it is a certificate issued by a depository bank, which purchases shares of foreign companies and deposits it on the account.

Special Purpose Acquisition Company (SPAC)

A company without commercial operations and is formed strictly to raise capital through an Initial Public Offering (IPO) for the purpose of acquiring or merging with an existing company.

3.6. Social Stock Exchange lists Unnati

Current Context

Bengaluru-based non-profit organization, **SGBS Unnati Foundation**, is set to become the **first entity in India to list on a Social Stock Exchange (SSE).**

About

- These bonds are expected to be listed on the **Social Stock Exchanges (SSEs)** of **NSE and BSE** on November 30, 2023.
- The **Unnati Foundation intends** to use the funds to **train up to 10,000 graduating youths** from government colleges, assisting them in employment placement through the UNXT program.

- The foundation is launching a **Zero-Coupon-Zero-Principal (ZCZP) Bond** offering for Rs 2 crore, commencing on October 30 and closing on November 7.

Social Stock Exchange (SSE)

- SSE was established to facilitate **connections between investors and social enterprises.** India's Finance Minister proposed the SSE as a means to provide non-profit organizations (NPOs) with additional financing options.
- **Purpose**: It acts as a **platform for enterprises to secure financing** for their **social initiatives, enhance visibility, and offer greater transparency** in fund utilization.
- **Investor Eligibility**: Retail investors can invest in securities from for-profit social enterprises (SEs) on the Main Board.
  - ✓ In other cases, **institutional and non-institutional investors** can participate.
- **Eligibility Criteria**: Both non-profit organizations (NPOs) and for-profit social enterprises (FPSEs) with a primary social intent can qualify for listing on the SSE.
  - ✓ Corporate foundations, political or religious groups, professional associations, and infrastructure firms (excluding affordable housing) **are ineligible. NPOs dependent on corporations for over 50% funding** are also excluded.
- **Fundraising for NPOs:** NPOs can raise funds through **Zero Coupon Zero Principal (ZCZP)** Instruments via private placement or public issues, as well as donations from mutual funds. ZCZP bonds lack coupons and principal repayment.
- **Minimum Size**: ZCZP issuance requires a minimum size of Rs 1 crore, with a minimum application size of Rs 2 lakhs.
- **Fundraising for FPSEs**: FPSEs can raise funds through equity shares, Alternative Investment Funds (including Social Impact Funds), or debt instruments, without SSE registration.

BSE and NSE

Aspect	Bombay Stock Exchange (BSE)	National Stock Exchange (NSE)
Establishment	Established in 1875	Established in 1992
Location	Mumbai, Maharashtra	Mumbai, Maharashtra
Ownership	Corporatized and demutualized	Corporatized and demutualized
Indices	SENSEX (Sensitive Index)	NIFTY (National Fifty) and others
Trading Hours	9:15 AM to 3:30 PM (Monday to Friday)	9:15 AM to 3:30 PM (Monday to Friday)
Number of Listed Companies	Over 5,000	Over 1,600

Zero-Coupon-Zero-Principal (ZCZP) Bond

- A ZCZP bond, or **zero-coupon bond,** is a type of **fixed-income security that doesn't make periodic interest payments** (zero-coupon) and returns the **face value** (principal) at maturity.
- Investors purchase these bonds at a **discount to the face value,** and the return on investment comes from the difference between the purchase price and the face value when the bond matures.

Unnati

- A **non-profit organization** is dedicated to empowering **one million young individuals** nationwide through training and employment opportunities.
- Unnati's mission revolves around fostering **societal harmony** by implementing targeted programs, catering to diverse segments.

3.7. Active and Passive Equity Funds

Current Context

Recently, a study by a private firm has analysed the **flow of Active Equity Funds, Passive Equity Funds and Arbitrage funds** in Indian Economy

Flows to Active Equity Funds

- **Overall Industry Flows**: Mutual fund industry recorded net inflows of approximately Rs **51,000 crore in Q2 of FY'24**.
- **Investor Preference**: Investors showed a preference for **active small cap funds,** constituting around one-third of the Rs 33,000 crore net inflows.
- **Category-wise Outflows**: Among active equity funds, the **focused and ELSS categories experienced the highest net outflows**, totaling around Rs 2,000 crore.
- **Performance of Active Large Cap Funds**: Active large cap funds saw **net outflows to the tune of Rs 1,800** crore during the quarter.

Active Equity Funds

- Fund managers in active funds **actively decide** when to buy, hold, or sell securities and conduct stock selection.
- These funds **rely on professional fund managers** for investment management.

Flows to Passive Equity Funds

- **Equity Dominance:** Within passive inflows, **equity**

claimed the majority with around 78 percent, showcasing investor interest in this segment.

- **Commodities Allocation:** Commodities secured an **18 percent share of net inflows** in passive funds during the same period.
- **Preference for Passive Large Cap Funds:** Investors showed a strong preference for passive large cap funds, constituting around **90 percent of all net inflows** in the passive category.

Equity and Shares

- **Equity** means the ownership stake in the company.
  - ✓ It means **ownership capital** or net worth after repayment of all the debts.
- **Shares** are the unit of the company's capital or other entity.
  - ✓ One can get ownership of the company by its shares.
  - ✓ Therefore, shares are **pieces of money freely tradeable** in the stock exchange market.

Basis	Equity	Shares
Tradability	Equity is the **ownership stake** that **cannot be easily traded** in the market.	The shares are **easily tradable** at the stock exchange.
Investment in business type	Equity is generally **found in all business forms,** like proprietorship, partnership, or corporations.	Shares are **generally seen in the companies only.**
Dividend	**If it has a share component**, they are entitled to the dividend rights only.	**Shares are always** entitled to have dividend rights.
Composition	It **includes shares, stocks, and all tangible assets,** excluding debt and fictitious assets.	They include **equity shares and preference shares only.**
Risk	Equity is comparatively riskier as it is attributable to the entity's ownership, so equity holders are directly facing the complexities faced by the entity.	Shares are comparatively less risky as the investors are liable for the capital owned and subscribed.
Breadth of Nomenclature	It is a much **more general term** compared to share.	It is a **comparatively narrow term.**
Intention	The investor's primary intention is **to earn profit** by investing an amount for the long term.	The investor's primary intention is **to enjoy short-term price movement.**
Subset	**All equities are not called** shares.	**All shares are** equities.

Passive Equity Funds

- In passive funds, the **fund manager plays a passive role** in stock selection.
- **Buy, hold, or sell decisions** are influenced by the **benchmark index,** dictating the fund manager's actions.

Arbitrage Funds

- Arbitrage involves buying and selling an asset simultaneously in **two different markets (i.e., cash and futures markets)** to take advantage of price differences.
- Funds that employ this strategy are called **Arbitrage Funds.**

3.8. Penny Drop Verification

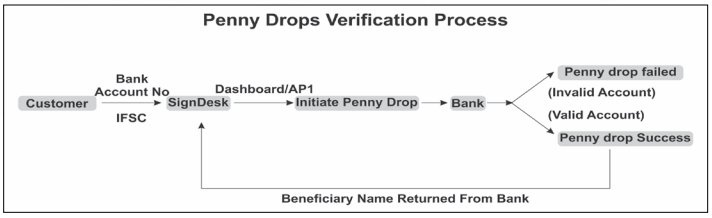
Current Context

The **Pension Fund Regulatory and Development Authority (PFRDA)** has made '**penny drop'** verification **mandatory for the withdrawal of funds** by subscribers of the **National Pension System (NPS)** for the timely transfer of money.

Key Details

- The provisions will apply across the **NPS, the Atal Pension Yojana (APY), and NPS Lite** for all types of exits/withdrawals.
- Through the 'penny drop' process, Central Recordkeeping Agencies (CRA) check the active status of the savings bank account and match the name in the bank account number with the name in the **PRAN (Permanent Retirement Account Number),** or according to the documents submitted.

Penny Drop Verification Process



Penny Drop Verification

- It is **a form of bank account validation** in which a penny, usually INR 1 is deposited into the bank account

to ensure the validity of the account so that neither the business nor the vendor faces any problems during payment transfers.

- The procedure not only verifies the **authenticity of the customer's bank account** but also checks if the mentioned **account is operative or not**.

The National Pension Scheme (NPS)

- It is a **government-sponsored** savings vehicle which provides **social-security** benefit in the form of pension.

Permanent Retirement Account Number (PRAN)

- It is an exclusive **12-digit numerical code** allotted to every person who has subscribed to the **National Pension Scheme (NPS)**.

Difference between NPS and APY

Features	NPS	Atal Pension Yojana
The age of joining	NPS has an entry age of a minimum of 18 years while the maximum is 55 years.	Atal Pension Yojana has the entry age 18 years and the maximum age being only 40 years.
Who can take the plan	NPS allows investors who are citizens of India as well as NRIs to invest in the scheme.	Atal Pension Yojana states that only a resident of India can invest in this plan
Pension particulars	While the NPS doesn't guarantee a pension post retirement.	Atal Pension Yojana provides you with a guaranteed pension after retirement.
Tax Benefit	NPS provides investors of this scheme a tax rebate of up to Rs. 2 lakhs.	The Atal Pension Yojana doesn't provide the applicant with any tax benefits
Premature Withdrawal	Only Tier 2 accounts will allow premature withdrawals.	Under the Atal Pension Yojana you will not be allowed to withdraw the money invested prior to the term end. In case of the unfortunate demise of the investor, or the investor has a medical condition that withdrawal may be considered.

3.9. Food Subsidy

Current Context

The Centre's food subsidy bill will likely **exceed the Budget Estimate (BE)** by **Rs 18,000 crore to Rs 2.14 trillion** for the current financial year, largely due to sharp increases in the **Minimum Support Prices** (MSP) for key crops.

Food Subsidy

- Food subsidy is provided by the **Central government** in the budget of the **Department of Food and Public Distribution** to meet the difference between the economic cost of food grains and their sales realisation **at central issue prices** for **Targeted Public Distribution System and other welfare schemes.**

Existing Subsidies in India

- **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY):** Provide an **extra 5 kg** of free food grains monthly per person to ration card holders in addition to NFSA entitlement.
  - ✓ Originally set to expire in December 2023, the **Prime Minister extended for another five years**.
- **National Food Security Act, 2013 (NFSA):** NFSA ensures **5 kg of grain per person per month** for priority category ration card holders and 35 kg for Antyodaya category cardholders.
- **Central Government's Role**: Through **Food**

Corporation of India (FCI), the Central Government manages procurement, storage, transportation, and bulk allocation of food grains to State Governments in the **Public Distribution System (PDS).**

- **State Government's Role: Operational responsibilities**, including intra-state allocation, identifying eligible families, issuing Ration Cards, and supervising Fair Price Shops (FPSs).

Causes for exceeding the Estimate

- **Elevated Food Prices**: Both domestically and globally, contributed significantly to the escalating food subsidy in India.
- **Escalating Economic Costs:** Encompassing **MSP payments to farmers, transportation,** distribution expenses, and state government levies on rice and wheat procurement etc.
- **MSP Impact on Crop Variety:** Farmers, incentivized by MSP for crops like wheat and paddy, resort to minimal procurement of other crops, leading to **reduced cultivation of water-efficient crops** like pulses.
- **Inclusion errors and Ghost beneficiaries**: As of 2016, the **Comptroller and Auditor General (CAG)** found that 49% of beneficiaries were yet to be identified. This has led to the phenomenon of **Ghost beneficiaries**.
- **Storage Capacity Shortfall:** Inadequate capacity at the state level for the allocated quantity of food grains, as highlighted by the CAG report.

Way Forward

- The government should consider a **comprehensive strategy**, including enhancing **storage capacity**, **streamlining beneficiary identification under NFSA,** and exploring **diversified subsidies for nutritional balance.**
- Additionally, a **focus on water-efficient crop cultivation and managing FCI dues** could contribute to long-term fiscal sustainability.

Minimum Support Price (MSP)

- It is a **guaranteed amount paid** to farmers when the government purchases their produce.
- Administered by the **Commission for Agricultural Costs and Prices (CACP) (attached to Ministry of Agriculture and Farmers Welfare)** MSP considers factors like production cost, demand, supply, and market trends.
- Its cover **three production cost categories: 'A2'** (direct expenses), **'A2+FL'** (includes family labor), and **'C2'** (comprehensive cost with land and capital).
- CACP recommends MSP based on **A2+FL** but uses C2 as a benchmark to assess coverage in major producing states.
- The **Cabinet Committee on Economic Affairs (CCEA)** of the Union government takes a **final decision** on the level of MSPs and other recommendations made by CACP.
- **Crops covered under MSP:**
  - ✓ **Cereals:** Paddy, Wheat, Jowar, Barley, Bajra, Ragi and Maize
  - ✓ **Pulses:** Arhar/Tur, Gram, Moong, Lentil and Urad
  - ✓ **Oilseeds:** Groundnut, Rapeseed/Mustard, Soybean, Toria, Sesamum, Sunflower Seed, Safflower Seed and Niger seed
  - ✓ **Other Crops:** Raw Cotton, Raw Jute, Copra, De-husked Coconut and Virginia flu cured (VFC) Tobacco

Food Corporation of India (FCI)

- It's a **Public Sector Undertaking,** under the **Department of Food & Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution.**
- FCI is a **statutory body** set up in 1965 under the **Food Corporations Act 1964.**
- It has **primary duty** to undertake **purchase, store, move/ transport, distribute and sell food grains** and other foodstuffs.

Related Data

- The combined **Fiscal Deficit** of the Centre and states is expected to reach around **10% of GDP, the highest among G20 nations.**
- **Food subsidy constitutes 95% of the Department's allocation** in 2020-21, making it the largest component of expenditure.

3.10. India among top countries with high income, wealth inequality: UNDP report

Current Context

India's income and wealth inequalities are among the **highest in the Asia-Pacific region**, as per a **UNDP Report.**

Key points of the report

- **India has made remarkable progress in reducing poverty.**
  - ✓ Between 2004 and 2019, poverty rates fell **from 40% to 10%,** and the share of the population living in **multidimensional poverty fell from 25% to 15%** between 2015 and 2021.
- **However, India also has high income and wealth inequality.**
  - ✓ The **top 10% of the population controls 57%** of national income and **65% of total wealth.**
- The report calls for **new directions to boost human development** in Asia and the Pacific, such as investing in **education and social protection, reducing corruption**, and **improving tax policy** and administration.
- India's rapidly expanding **youth population is seen as a demographic advantage**, and it contributes to the

growth of the **global middle class**.

- **India's progress** in poverty reduction and its digital advancements are notable.
- **India's per capita income** soared **from $442 to $2,389** between 2000 and 2022.

United Nations Development Programme (UNDP)

- Established in 1965, it provides **expert advice, training, and grant support** to developing countries, with a **focus on assisting the least developed nations.**
- Funded **by voluntary contributions,** it plays a central role in the UNSDG.

Situation of inequality in India (Oxfam)

1%	The top 10% of the Indian population holds 77% of the total national wealth. 73% of the wealth generated in 2017 went to the richest 1%, while *670 million Indians who comprise the poorest half of the population saw only a 1% increase in their wealth.
70	There are 119 billionaires in India. Their number has increased from only 9 in 2000 to 101 in 2017. Between 2018 and 2022, India is estimated to produce 70 new millionaires every day.
10x	Billionaires' fortunes increased by almost 10 times over a decade and their total wealth is higher than the entire Union budget of India for the fiscal year 2018-19, which was at INR 24422 billion.
63 M	Many ordinary Indians are not able to access the health care they need. 63 million of them are pushed into poverty because of healthcare costs every year - almost two people every second.
941 yrs	It would take 941 years for a minimum wage worker in rural India to earn what the top paid executive at a leading Indian garment company earns in a year.

Inequality

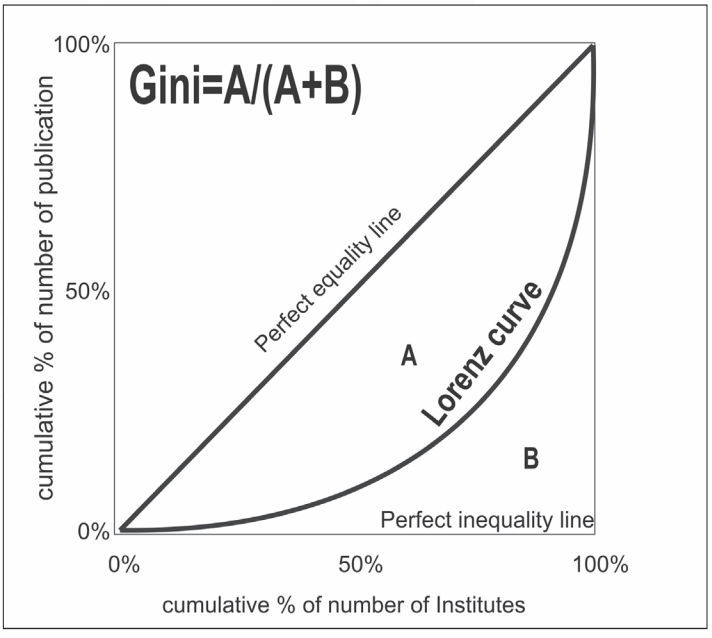
- The **United Nations** describes inequality as "**the state of not being equal, especially in status, rights and opportunities**".
- Measures of economic inequality include the **Lorenz Curve**, the **Gini Coefficient**, etc

Gini Coefficient

- It is derived from the Lorenz Curve and serves as an indicator of economic development in a country.
- It quantifies the level of **income equality** within a population.
- The Gini Coefficient's scale ranges from **0** (perfect equality) to **1** (perfect inequality).

Causes for income inequality in India

- Historical Factors:
  - ✓ **Caste System:** Discrimination based on caste has led to **unequal access to resources and opportunities.**
  - ✓ **Colonial Legacy:** The impact of **British colonial** rule has left a lasting effect on India's economic structure. **The exploitation of resources and imposition of policies** that favored the colonial powers have contributed to economic disparities.
- Educational Disparities:
  - ✓ **Limited Access to Quality Education:** Unequal access to quality education perpetuates income inequality.



Labor Market Disparities

- ✓ **Informal Sector Dominance:** Employees often lack job security, social benefits, and fair wages.
- ✓ **Skill Mismatch:** Mismatch between the skills possessed by the workforce and the skills demanded by the job market.

- Gender Inequality:
  - ✓ **Gender Wage Gap:** Women in India often face **wage discrimination**, and their **participation in the workforce** is comparatively lower.
- Corruption:
  - ✓ Corruption in public institutions can **divert resources away from social welfare** programs and contribute to income inequality.

Implications of income inequality

- **Strained Social Relations:** High levels of income inequality can lead to **social tension** and **strained relations** between different socio-economic groups.
- **Reduced Economic Growth:** Excessive income inequality can hinder overall economic growth.
- **Poor Health Outcomes:** Income inequality is often linked to disparities in health outcomes.
- **Threat to Political Stability**: Extreme income inequality can contribute to **political instability**, **social unrest**, and an increased **risk of conflicts**.

Way Forward

- **Progressive Taxation** to ensure that higher-income individuals contribute a larger proportion of their income in taxes. This can provide **additional revenue for social welfare programs** and **reduce wealth concentration**.
- **Strengthening social safety nets**, such as unemployment benefits, food assistance, and healthcare.
- **Prioritizing education** by investing in quality primary, secondary, and higher education.
- **Promoting gender equality in the workplace**, ensuring **equal pay for equal work**, and supporting women's participation in the labor force.

Government initiatives

- Employment and Infrastructure: Initiatives like MGNREGA, PMEGP, Pradhan Mantri Rojgar Protsahan Yojana, DDU-GKY, and DAY-NULM.
- Social Protection: Under Ayushman Bharat, the National Health Protection Scheme aims to over 10 crore poor and vulnerable families, approximately 50 crore beneficiaries.
  - ✓ Institutional credit for agriculture was increased to Rs. 11 lakh crores during 2018-19.
- Poverty Reduction and Social Security: Initiatives include Pradhan Mantri Suraksha Bima Yojana, Atal Pension Yojana, Pradhan Mantri Jeevan Jyoti Yojana, MUDRA Bank etc
- The Prime Minister Jan Dhan Yojana: Focuses on financial inclusion by providing access to bank accounts for economically weaker sections.

3.11. SEZ and DESH Bill

Current Context

The Government is contemplating the **abandonment** of the proposed **Development of Enterprise and Service Hubs (DESH) Bill** as it reviews the **necessity for a new law** to revamp the nation's **Special Economic Zones (SEZs).**

About DESH Bill

- In February 2022, the government of India announced that it would replace the **Special Economic Zones (SEZ) Act, 2005**, with the **Development of Enterprise and Service Hubs (DESH) Act**, to facilitate **'Make in India' and 'ease of doing business'** .
- India's **SEZs Act, 2005** is meant to undergo a significant revamp with the introduction of the DESH bill.
  - ✓ This move comes in response to a **World Trade Organization (WTO) ruling** that deemed India's export-linked tax benefits non-compliant with WTO regulations.
- **The DESH Bill** was aimed to **revitalize SEZs into Development Hubs**, promoting both export-focused and domestic investment.
- A **key feature** of the DESH bill was the establishment of a **Single-Window Online Portal** for granting **time-bound approvals** for setting up and operating Development Hubs.

Key Facts

- As of 2021, 425 SEZ proposals have been approved in India.
- Out of 376 notified SEZs, 268 are operational.
- Employment generation reached approximately 25.60 lakh persons, with an investment of Rs. 6,28,565.89 crore.

Special Economic Zones (SEZs)

- **Special Economic Zone** is a **designated area within a country** that is subject to **specific economic regulations and policies** that differ from the rest of the country.
- India established its first **Export Processing Zone (EPZ)** in **Kandla in 1965.**
  - ✓ The **SEZs Policy was introduced in April 2000** to attract foreign investments and promote exports.
- **Legislation and Objectives: The Special Economic Zones Act, 2005**, was passed in May 2005 **to simplify procedures** and provide a single-window clearance for SEZ-related matters.

Issues with SEZs

- Land Acquisition Issues.
- Slow Implementation and Utilization: Due to bureaucratic hurdles, complex approval processes, and a slow decision-making environment.
- Job Creation Discrepancy: Some SEZs have struggled to provide the anticipated level of employment.
- Policy Inconsistencies: Changes in SEZ policies and uncertainties regarding the continuity of incentives have created an environment of policy inconsistency, affecting investor confidence.

Baba Kalyani Committee

- The committee was constituted by the Union Ministry of Commerce & Industry in June 2018 to evaluate the SEZ policy and make it WTO compatible.
- **Key Recommendations**
  - ✓ Rename SEZs in India as 3Es- Employment and Economic Enclave.
  - ✓ Framework shift from export growth to broad-based employment and economic growth.
  - ✓ Separate rules and procedures for manufacturing and service SEZs.
  - ✓ Extension of Sunset Clause and retaining tax or duty benefits.
  - ✓ Dispute resolution through arbitration and commercial courts.

- **Key objectives:** Generating **economic activity, promoting exports, attracting domestic and foreign investment**, creating employment opportunities, and developing infrastructure.
- **State Involvement:** The State Governments play a crucial role in export promotion and infrastructure development in SEZs.
  - ✓ They recommend applications, which are considered by the 19-member **Inter-Ministerial SEZ Board of Approval (BoA)**.
- **SEZ Structure and Rules:** SEZs are divided into **Processing and Non-Processing Areas**, with different minimum land requirements for various classes of SEZs.
- **Salient Features of SEZ Scheme:**
  - ✓ SEZs are designated **duty-free enclaves** outside the customs territory of India.
  - ✓ **No import license required**, allowing for manufacturing or service activities.
  - ✓ Units must achieve Positive Net Foreign Exchange over five years.
  - ✓ **Domestic sales** are subject to **full customs duty** and **import policy.**

3.12. Technical Textiles in India

Current Context

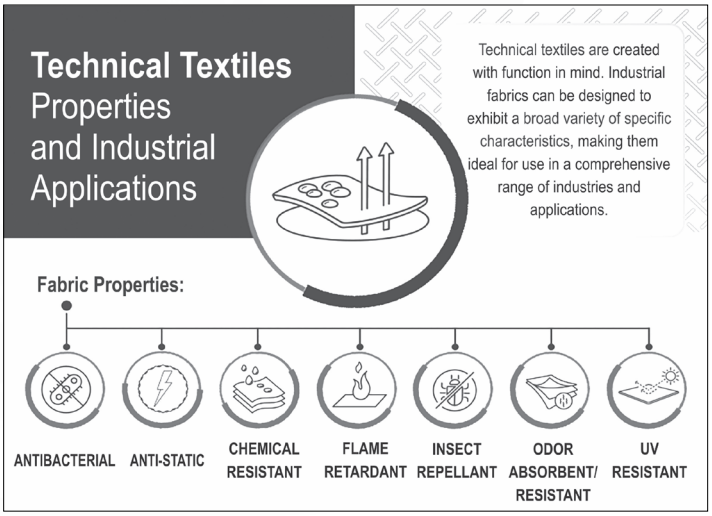
Indian market for technical textiles is targeted to touch **$40 billion by 2030**.

Key points

- The current market capitalization is **$23 billion.**
- Similarly, **technical textile exports** are expected to reach **$10 billion** in the next seven years, up from **$2.5 billion now**.

Technical Textiles

- Technical Textiles is an **advanced technology backed sunrise sector** which is steadily gaining ground in India.
- Technical textiles are **functional fabrics that have applications across various industries** including automobiles, civil engineering and construction, agriculture, healthcare, industrial safety, personal protection etc.



Status of Technical Textiles in India

- India is **the 5th largest market for technical textile** in the world
- **As a Polyester Producer:** Since ancient times, India's strengths have been in traditional textiles and natural fibres globally. It is the **second-largest** producer of polyester in the world.
- **Contribution in GDP:** The segment accounts for **around 13% of India's total textile and apparel market and 0.7% of GDP.**
- **Raw materials Availability**: India's growth in this industry can be attributed to a **number of factors,** including cheap labor, power, cotton, wool, jute, and silk, as well as a robust value chain and shifting consumer trends.

Challenges faced by Technical Textiles sector in India

- **Lack of Awareness:** There is a **limited understanding and awareness of technical textiles** among both manufacturers and end-users.
- **Limited Skilled Workforce:** A **shortage of skilled workers** with expertise in technical textiles manufacturing and technology can be a constraint.
- **Supply Chain Issues:** The technical textiles supply chain involves various components, from raw material sourcing to manufacturing and distribution. **Inconsistencies in the supply chain, including the availability of raw materials, can disrupt production**.
- **R&D Funding: Insufficient funding for research and development** activities in the technical textiles sector can impede innovation.

Way Forward

- **Financial Support:** Provide financial incentives and subsidies to **encourage small and medium-sized enterprises (SMEs)** to invest in the technical textiles sector.
- **Infrastructure Development**: Invest in **specialized infrastructure**, including **testing facilities** and **research and development centers**, to support innovation and quality assurance in technical textiles.
- **Supply Chain Optimization:** Facilitate a more efficient and reliable supply chain by addressing issues related **to raw material sourcing, transportation, and logistics**.
- **Skill Development:** Collaborate with **educational institutions** to design **specialized courses** in technical textiles and encourage skill development programs.
- **Global Collaboration:** Facilitate international collaborations, joint ventures, and technology transfer agreements to leverage global expertise.

Government initiatives

- Technical Textile HSN Codes: In 2019, Ministry of Textiles assigned 207 HSN codes to technical textiles to aid in the monitoring of import and export data, as well as in providing financial assistance and other incentives to manufacturers.
- 100% FDI: The Government of India permits 100% FDI through the automatic route.
- Technotex India: is India's premier show on Technical Textiles in collaboration with FICCI
- The PLI scheme: Promotes the production of high-value Man-Made Fiber (MMF) fabrics, garments, and technical textiles.

The National Technical Textiles Mission

- It has been approved by the government for a four-year period (2020 to 2024) and has been extended till 2026.
- The mission's main goal is to increase the use of technical textiles in the nation's flagship missions and programs and to position India as a global leader in Technical Textiles.
- It also supports the 'Make in India' initiative promoting domestic manufacturing of related machinery and equipment.
- The mission will comprise of the following four components:
  - ✓ Research, Innovation and Development
  - ✓ Promotion and Market Development
  - ✓ Export Promotion
  - ✓ Education, Training, Skill Development

3.13. Indian Patent Filing Growth

Current Context

Global patenting activity soared to new records in 2022, fueled by **Indian and Chinese innovators** and powered by increased levels of **innovation, entrepreneurship and digitalisation** in these countries.

Patent filings in India

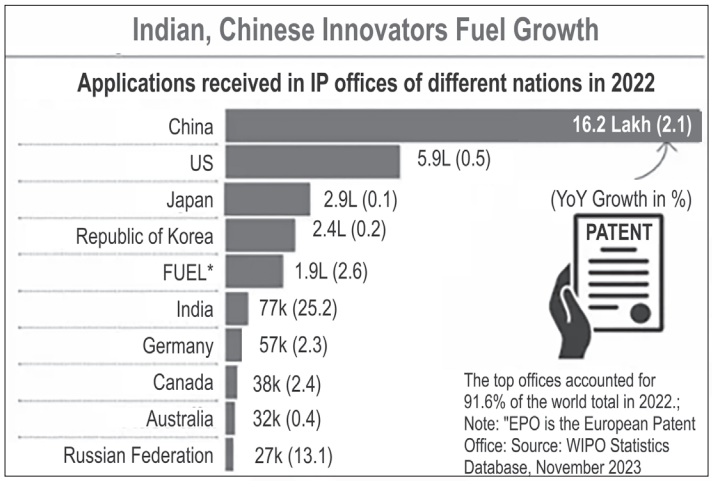
- **Patent filings by Indian applicants grew by 31.6% in 2022** according to **WIPO.**
- **The resident patent filings** in India (filed with the Indian Patent Office) **rose by 47% to 38,551** in 2022.
- So, for the first time ever, **there were more patents filed by Indian residents as against foreign filers**, reflecting India's fast-growing innovation ecosystem.

Patent filings around the world

- Innovators from around the world submitted **3.5 million patent applications in 2022**, marking a third consecutive year of growth.
- **Bulk of IP filing activity occurs in Asia**. Asia accounted for **67.9%, 67.8% and 70.3%** of **global patent, trademarks and industrial designs** filing activity respectively in 2022.
- **The largest rise in filings was reported from India**. Switzerland (6.1%), China (3.1%), Austria (2.5%) and the UK (2.5%) also reported robust growth in filings.
- Overall, **China, the US, Japan, Republic of Korea and Germany** were the countries, with the **highest numbers of patent filings in 2022**.

What is Intellectual Property?

- **Intellectual Property (IP)** refers to **creations of the mind**, such as inventions; literary and artistic works; designs; and symbols, names and images used in



commerce.

- **Intellectual Property Rights (IPR)** refers to the **legal rights given to the inventor or creator** to protect his invention or creation for a certain period of time.
- There are several types of intellectual property protection like **Patent, Copyright, Trademark, Designs, Industrial Designs, Trade Secrets and Geographical Indications**.
- IPR are also vital **for inventors, artists, scientists and businesses** as they put a lot of time, money, energy and thought into developing their innovations and creations.

Concerns related to IP

- **Lack of Funding:** Uncertainty continues to weigh on the global innovation ecosystem, with venture capital funding dropping in many parts of the world.
- **Enforcement:** Despite efforts to strengthen IP enforcement, **piracy and counterfeiting** remain significant problems in India.
- **Patent Backlog:** The backlog of patent applications in India is a major challenge which leads to **delays in granting patents and creates uncertainty** for innovators.
- **Lack of IP Awareness:** There is still a **lack of awareness and understanding of IPR** among many businesses and individuals in India.

The World Intellectual Property Organization (WIPO)

- WIPO is the global forum for **intellectual property services, policy, information and cooperation.**
- It was founded in 1967 and became a **specialized agency** of the **United Nations** in 1974.
- WIPO is a **self-funding agency** of the United Nations, with 193 member states.
- Its mission is to lead the **development of a balanced and effective international IP system** that enables innovation and creativity for the benefit of all.

Government Initiatives

- The Government of India had launched a **Scheme for facilitating Start-Ups Intellectual Property Protection (SIPP)** in 2016.
  - ✓ The scheme **facilitated startups in filing and processing of their patent**, design or trademark application through the assistance of IP Facilitators.
- **Modernization of administration:** Creation of a highly **transparent, e-enabled, efficient and accessible** IP ecosystem in India that provides legal certainty to the industry.
- **Transparency and dissemination of information:** The official website provides vast information relating to patents, trademarks, designs and geographical indications.
- **Madrid Protocol**: The **operationalization of the Madrid Protocol** for international protection of trademarks provides the user the facility of protecting his trademark in 90 countries by filing a single application in one language with one set of fees filed at the Trademarks Registry.
- **IPR Awareness Programmes:** Awareness creation is one of the major planks of the modernization scheme of IP system, as this will educate the stakeholders about the benefits of registration of their rights.

4. HISTORY, ART AND CULTURE

4.1. Mandalam-Makaravilakku Pilgrim Season

Current Context

The annual **Mandalam-Makaravilakku pilgrim season** was celebrated recently at the **Ayyappan Temple in Sabrimala, Kerala.**

About

- The most vital day of this festival is the **Makkara Vilakku** when it is believed that a light on a neighbouring hill confirms the arrival of the deity as pilgrims flock the temple with **traditional offerings** to the deity.

Ayyappan Temple in Sabarimala

- Surrounded by 18 hills in the **Periyar Tiger Reserve**, it is located in the forests of the **Sabari Hills of the Western Ghats.**
- **Pamba** river falls on the way to Sabarimala temple.
- The Sabarimala Temple in Kerala is a world-renowned **Swamy Ayyappan temple** and stands as **one of the largest annual pilgrimage sites in the world**.

Mandalam-Makaravilakku Pilgrim Season

- **Mandala Kalam**, also known as Mandala Masam, spans a **duration of 41 days** and is the **main pilgrimage season** of the renowned temple.
- **Mandala Kalam** marks the beginning of pilgrimage to Sabarimala following the traditional Malayalam calendar.
- **People of all religions are allowed to visit the Sabarimala temple**. There is no restriction based on caste or creed.
  - ✓ In **2018 in a 4:1 judgment**, **Constitution Bench of the Supreme Court** allowed **women of all ages** to worship in the Sabarimala Temple.
  - ✓ **Earlier, there were certain restrictions for women**. Only those women who have either passed their fertility age or are yet to reach puberty (**after the age of 50 and before the age of 10**) are allowed in the shrine.
  - ✓ This was because Lord Ayyappa, was believed to be a **"Naisthik Brahmachari"** and allowing young women to enter the temple is claimed to be affecting the idol's **"celibacy" and "austerity".**

Irumudikettu

The **cloth bundle** pilgrims carry during the pilgrimage, containing **traditional offerings** for the temple, such as coconut, ghee, malar (puffed rice), and rice.

4.2. Balban's Tomb

Current Context

The Archaeological Survey of India (ASI) has begun restoration and conservation work on **Ghiyas-ud-din Balban's 13th-century tomb** in the Mehrauli Archaeological Park.

Key Details

- **Balban,** one of the most powerful **Slave sultans after Iltutmish**, was buried within the archaeological park, in a building once built by the Sultan himself called the **Dar-ul-Amaan (Haven of Safety).**
- Though in ruins and devoid of decorations, Balban's tomb is **one of the earlier Indo-Islamic architectural specimens** and is unique for its architecture being the

first building to be constructed using true arches.

- Unlike the corbelled arches of Qutub Complex, the **true arches** of Balban's tomb have the keystone placed at the centre, which **evenly distributes the weight** of the superstructure.
  - ✓ From here on, **true arches become a common feature** of the Indo-Islamic architecture of Delhi.
- To the east of Balban's tomb lies the ruined, rectangular **grave of Khan Shahid**, Balban's son, who died fighting against the Mongols near Multan in **1285 AD.**

Ghiyas-ud-din Balban

- He was a part of the **Slave Dynasty** of the Delhi Sultannate that ruled since the time of **Qutub-ud-din Aibak** (**1210 AD**) till when **Jalaluddin Khilji** came to power in **1290 AD**.
- **Ulugh Khan or Balban** ascended the throne in **1265 AD** after a prolonged background of struggle between the monarchy and the Turkish chiefs.
- Balban's rising influence alienated many of the Turkish chiefs who hatched a conspiracy in **1253 AD** and **ousted Balban** from his position but he **came back to power in 1265 AD** after Sultan Mahmud died.
- **Balban and the Mongol threat:**
  - ✓ Balban used both 'Force and Diplomacy' against the Mongols.
  - ✓ He exchanged envoys with Halaku, the most important figure among the successors of Chengiz Khan.
  - ✓ In order to strengthen the **north-west frontier**, Balban constructed a series of forts like Forts of **Tabarhinda, Bhatinda, Sarsa, Bhate, Abohar** etc.
  - ✓ **There were three major invasions of Mongols during Balban era:**
    - i. Attack on Lahore in **1241 AD** although Balban was not formally in power.
    - ii. Attack in **1279 AD** but were defeated by Muhammed, Bugra Khan and Mubarak Bakhtiyar.
    - iii. Attack on Punjab in **1285 AD** under Taimur Khan but were defeated by Muhammad who also lost his life.
- **Features of his rule:**
  - ✓ **Balban organized a strong centralized army,** both to deal with internal disturbances, and **to repel the Mongols**. He reorganized the military department known as **Diwan-i-Arz** and pensioned off those soldiers and troopers who were no longer fit for service.
  - ✓ Balban adopted a policy of **'Blood and Iron'** to deal with Mewatis, Rajput zamindars and dacoits of Ganga-Jamuna Doab and Awadh.
  - ✓ **He abolished Chahalghani.** He knew that the real threat to the monarchy was from the nobles called the '**Forty**' (Chahalghani).

Archaeological Survey of India (ASI)

- It's the **apex organization** for archaeological research and protection of the cultural heritage of the nation.
- **Founder: Alexander Cunningham** (1861)- the first Director-General of ASI, also known as the **"Father of Indian Archaeology"**
- **Works under: Ministry of Culture**
- **It carries out** surveys of antiquarian remains, conducts exploration and excavation of archaeological sites, and oversees conservation and maintenance of protected monuments etc.

Ruler	Reign
Qutb ud-Din Aibak	(1206-1210 AD)
Aram Shah	(1210-1211 AD)
Iltutmish	(1211-1236 AD)
Rukn-ud-din Feroze	(1236 AD)
Razia al-Din	(1236-1240 AD)
Muiz-ud-din Bahram	(1240-1242 AD)
Ala-ud-din Masud	(1242-1246 AD)
Nasiruddin Mahmud	(1246-1266 AD)
Ghiyas-ud-din Balban	(1266-1286 AD)
Muiz-ud-din Muhammad Qaiqabad	(1286-1290 AD)

Architectural specimens from Slave Dynasty

- **Quwwat-ul-Islam Mosque:** It is one of the earliest mosques in India, erected between 1192 and 1198 by **Qutubuddin Aibak,** in Delhi.
- **Qutub Minar: Qutbu'd-Din Aibak** laid the foundation while Iltutmish completed it, in Delhi.
- **Adhai Din ka Jhonpra:** It is a historical mosque located in Ajmer, Rajasthan, built in AD 1199 by **Qutub-ud-Din-Aibak.**
- **Tomb of Nasir-ud-Din Mohammed (Sultan Ghari):** It was built in 1231 by **Iltutmish** over the remains of his eldest son Nasiru'd-Din Mahmud.
- **Tomb of Iltutmish:** Built by **Iltutmish** himself in AD 1235.
- **Balban's Tomb:** Located in Mehrauli, New Delhi, built in AD 1287.

- ✓ Balban introduced Persian customs and traditions such as **sizda, paibas** (kissing feet of Sultan), **jamnibas** (kissing hands), and **Naurauz** (Persian new year).
- ✓ **He claimed divine-royal descent** to assert his supremacy and legitimacy in the empire by saying that the Sultan was God's shadow on earth and the recipient of divine grace.
- ✓ **He is credited for asserting the sovereignty of the crown** and making it the paramount authority in contemporary society.

- **Balban died in 1286.** He was undoubtedly one of the main architects of the Sultanate of Delhi, particularly of its form of government and institutions.

4.3. Janjaatiya Gaurav Diwas

Current Context

The Prime Minister of India, in his monthly radio talk **'Mann ki Baat'**, praised the **sacrifice, valour and contributions of tribal icons** in the run up to the **Janjaatiya Gaurav Diwas**.

About

- India celebrated "**Janjaatiya Gaurav Diwas**" on **November 15th**, which is associated with the birth anniversary of **Bhagwan Birsa Munda (Dharti Aaba)** and **dedicated to freedom fighters from the tribal community**.
- He recalled others' efforts in the address as well-
  - ✓ **Tilka Manjhi's** fight against injustice
  - ✓ **Sidhho-Kanhu's** voice for equality
  - ✓ **Shaheed Veer Narayan Singh's** support for his people in difficult times.
  - ✓ **Tantiya Bheel's** birth on Indian soil

Birsa Munda

- Birsa Munda fought bravely against **colonial exploitation** by **mobilizing the tribal community**, forcing the British to introduce laws to **protect land rights** of tribals, giving a call for '**Ulgulan**' (Revolution).
- Birsa started the faith of **'Birsait'**-
  - ✓ Members of the **Munda and Oraon community** joined the sect to **oppose church practices**, such as taxation and religious conversions.
- **Birsa is celebrated for revitalizing traditional tribal culture**, which had been impacted by Christian missionary activities and conversions, with many tribals adopting Christianity.

Tilka Manjhi

- Tilka Manjhi led a significant **Adivasi rebellion against the British in 1785,** well before the First War of Indian Independence.
- **Inspired by a severe 1770 famine**, Tilka looted the Company's treasury to aid the hungry and needy, sparking the "**Santhal Hool" revolt** lasting from 1771 to 1784.
- **In 1784, this rebellion marked the first armed uprising against the British**, rooted in famine and disputes.
- After fatally wounding **East India Company** representative Augustus Cleveland, Tilka was captured.

Munda Revolt (1899-1900)

- It was led by Birsa Munda in the region South of Ranchi (in Jharkhand), in 1899-1900.
- **Causes of the revolt include**
  - ✓ The land revenue policies of the British disrupted their traditional land-economic systems and livelihoods.
  - ✓ Oppression by Hindu landlords and money lenders and their efforts at confiscating land as collateral to untenable debt.
  - ✓ Efforts of conversion by the Christian Missionaries along with staunch criticism of their traditional culture.
- **Methods of the revolt**
  - ✓ The 'Ulgulan' or the 'Great Tumult' was aimed at establishing Munda Raj by driving out the British.
  - ✓ Use of traditional symbols and native language to mobilize people to destroy symbols of "Ravana" (dikus/outsiders/Europeans) like churches, police stations etc.
  - ✓ They raised the white flag as a symbol of Birsa Raj.
  - ✓ On 3rd March, 1900, Birsa Munda was arrested by the British police and later died of cholera in the jail and the movement faded out.
- **Significance of Munda Rebellion**
  - ✓ Enactment of Chotanagpur Tenancy Act, 1908 to secure the land of the tribals against arbitrary confiscation and take over.
  - ✓ Depicted capacity of Tribals to protest against injustice, express popular discontent and resist colonial rule.

Sidhho-Kanhu

- **Sidhu Murmu** and **Kanhu Murmu** were the leaders of the **Santhal rebellion** (1855–1856), along with other leaders like **Chand** and **Bhairab.**
- The rebellion took place in present-day **Jharkhand and Bengal** (Purulia Birbhum and Bankura) in eastern India against both the **British colonial authority** and the **corrupt zamindari system.**

Shaheed Veer Narayan Singh

- He was a Chhattisgarhi landlord from Sonakhan who **led the 1857 Indian Independence Movement** in Chhattisgarh and is regarded as the "**1st Chhattisgarhi freedom fighter**".
- **In 1856, the British arrested him for looting grain during a famine and distributing it to the poor,** but escaped a year later and assembled a 500-strong army in Sonakhan.
- On December 10, 1857, he was executed at Jaistambh Chowk, Raipur, becoming the **first martyr from Chhattisgarh in the War of Independence.**

Tantiya Bheel

- **He was a dacoit** active between 1878 and 1889.
- **A member of the Bhil tribe of Madhya Pradesh**, he waged an armed struggle against the British and started dacoity against them after the Revolt of 1857.
- **He was eventually caught and hanged in 1889**.

The Great Bengal Famine of 1770

It struck Bengal and Bihar between 1769 and 1770 and affected some **30 million** people. **Crop failure** in autumn 1768 and summer 1769 and an accompanying **smallpox epidemic** were thought to be the manifest reasons for the famine

Santhal Rebellion (1855-56)

- It was a response to **British exploitation of Santhal land and resources.**
- It was led by figures like **Sidhu and Kanhu Murmu.**
- The Santhals revolted in **July 1855,** targeting oppressive symbols like landlords, moneylenders, and officials.
- **This led to clashes with British forces and a forceful British military intervention,** resulting in bloodshed and the capture of Santhal leaders.

4.4. Amrit Vatika

Current Context

At an event marking the **culmination of the 'Meri Maati Mera Desh' campaign** and the **Azadi Ka Amrit Mahotsav,** at the Kartavya Path, the Prime Minister also laid an e-foundation stone of an **Amrit Mahotsav Smarak and Amrit Vatika.**

About Amrit Vatika

- 'Amrit Vatika' to be made under **'Meri Maati Mera Desh'** in New Delhi to become a grand symbol of **'Ek Bharat Shresth Bharat'**.
- **Features:** The venture transcends being just a green space; it will be a living testament to one's shared heritage, with the soil and saplings representing every corner of India.
  - ✓ The plan is to plant **75 saplings of indigenous species** and develop the 'Amrit Vatika'.
- **Location:** The Vatika will be situated **adjacent to the Netaji Bose statue** under the Grand Canopy and the National War Memorial by fusing the soil and saplings that would arrive in 7500 urns.
  - ✓ For the Amrit Vatika, a memorial lawn to be built next to the India Gate, an area of 12,000 sqm has been earmarked.

Meri Maati Mera Desh Campaign

- Launched by Union Government in July 2023, it's envisaged as a culminating event of the 'Azadi Ka Amrit Mahotsav' celebration of 75 years of Indian Independence.
- The campaign included events at the **panchayat, village, block, urban local body, state, and national levels**.
- The agenda involves installing a memorial plaque bearing the names of those who made the supreme sacrifice, including freedom fighters and defence personnel.
- People also took a solemn pledge at the memorial site to reaffirm their commitment to the country.

Ek Bharat Shresth Bharat

- The programme aims **to enhance interaction & promote mutual understanding between people of different states/UTs through the concept of state/UT pairing.**
- The states carry out **activities to promote a sustained and structured cultural connect** in the areas of language learning, culture, traditions & music, tourism & cuisine, sports and sharing of best practices, etc.

Azadi Ka Amrit Mahotsav

- It's an initiative of the Government of India to **commemorate 75 years of independence** and the glorious history of its people, culture and achievements.
- The official journey of Azadi Ka Amrit Mahotsav started a **75-week countdown to our 75th anniversary** of independence and will end on 15th August 2023.
- Following are the **five themes** of Azadi Ka Amrit Mahotsav
  - ✓ Freedom Struggle
  - ✓ Ideas@75
  - ✓ Resolve@75
  - ✓ Actions @75
  - ✓ Achievements@75

4.5. Keraleeyam Festival

Current Context

Kerala's Chief Minister recently inaugurated the **week-long Keraleeyam festival** that seeks to shed light on the **richness of the State's ethnic traditions**.

Key Details

- The Chief Minister of Kerala compared the first edition of Keraleeyam in 2023 to the **Edinburgh International Festival,** which sought to heal the trauma and economic bleakness caused by the Second World War by **harnessing the power of art and enterprise** as a salve for social emancipation, progress and lasting peace.
- **The seven-day-long event would provide an immersive experience** that celebrates **Kerala's history and political transformation** and illuminate **modernity's impact** on the State.

Examples of other Festivals in Kerala

Sl. No.	Festival	Context
1	Pulikali	It is associated with Onam where trained artists **dressed as tigers perform this dance** which is almost 200 years old.
2	Vishu	This festival marks the **New Year** for the people of Kerala. They set up a statue of Lord Krishna with yellow cucumber, **white** cloth, ornaments, fruits, and kanikonna flowers, a practice known as **Kani Kanal.**
3	Thrissur Pooram	It is the mother of all festivals. It is a mix of music and visuals. Elephants are decorated with beautiful ornaments and displayed at the **Vadakkunnathan** temple. **Panchavadyam** is one of the main attractions of the festival.
4	Vetta & Arattu	This festival is celebrated **twice in a year,** once in October-November and other in March-April. Vetta represents **Lord Vishnu** hunting down the demon of evil in the forest.
5	Swathi Sangeethotsavam	The week-long music festival, is held annually from January 6 to 12 at the 'Kuthira Malika' palace complex at Thiruvananthapuram, Kerala. It is held in tribute to **Maharaja Swathi Thirunal,** who ruled the state of Travancore from 1813-1846 and was a patron of arts and a musician himself.
6	Karthigai	It is a **light festival** celebrated in Malayali houses. The village temple arranges for a bonfire of useless materials and every family takes a **burning torch made of palm leaves (Chootu)** from this fire to the house.
7	Nehru Trophy Boat Race	This festival was started when former **Prime Minister Jawaharlal Nehru** visited Alappuzha in 1952. Giant boats with 100 rowers participate in the race.
8	Onam	This **harvest festival** celebrates the return of the mythical ruler, King **Mahabali.** The festival starts in the first month as per the Malayalam calendar.

4.6. New entrants to UNESCO Creative Cities Network (UCCN)

Current Context

Kozhikode (Kerala) and Gwalior (Madhya Pradesh) have made it to the prestigious creative cities list of **UNESCO** for contributions in the fields of **literature and music** respectively, as announced on the **World Cities Day** (October 31).

About

- **55 new cities joined the UNESCO Creative Cities Network (UCCN)** and were acknowledged for their **strong commitment to harnessing culture and creativity as part of their development strategies**, to promote human-centred urban planning.
- **Some of the other cities added to the list are-**
  - ✓ **Bukhara (Uzbekistan)** for Crafts and Folk Art.
  - ✓ **Casablanca (Morocco)** for Media Arts.
  - ✓ **Kathmandu (Nepal)** for Films.
  - ✓ **Rio de Janeiro (Brazil)** for Literature.
- The newly designated Creative Cities are invited to participate in the **UCCN Annual Conference** (July 1-5, 2024) in Braga, Portugal, under the theme "Bringing Youth to the table for the next decade",

UNESCO Creative Cities Network

- **It was launched in the year 2004** with the aim to strengthen cultural activities, goods, services and international cooperation for sustainable development.
- **The list is updated once every 2 years and all UNESCO's member states and associate members are eligible** to be considered while updating the list.
- With the latest additions, the creative cities network now counts **350 cities** in **more than one hundred countries**, representing **seven creative fields:**
- It works in recognition to the **UN Sustainable Development Goal 11 (SDG 11)** for Sustainable Cities and Communities and acclaims cities in this regard.
- **Indian Cities in UCCN-**

World Cities Day

- The **United Nations General Assembly** designated 31 October as World Cities Day.
- The global observance, first held in **2014,** is organized by the **United Nations Human Settlements Programme (UN-Habitat)** in coordination with each year's selected host city
- **It garners the international community's interest** to address challenges of urbanization and contributing to **sustainable urban development.**

Know the cities

- **Kozhikode** is a permanent venue for the **annual Kerala Literature Festival** and hosts several other book festivals. **It is the 1st Indian city to get City of Literature tag.**
- **Gwalior** has a rich and diverse musical heritage encompassing **classical Hindustani music, folk music, and devotional music.** The city also has some prestigious music institutes and hosts popular festivals.

United Nations Educational, Scientific and Cultural Organization (UNESCO)

- It's a **specialized agency of the United Nations** which promotes world peace and security through international cooperation in education, arts, sciences and culture.
- It has **194 member states and 12 associate members,** as well as partners in the non-governmental, intergovernmental and private sector.
- **Headquarters:** Paris, France
- UNESCO was founded in **1945** as the successor to the League of Nations' **International Committee on Intellectual Cooperation.**

7 Creative Fields of UCCN	Indian Cities in UCCN
Crafts and Folk Arts	Jaipur (2015), Srinagar (2021)
Design	-
Film	Mumbai (2019)
Gastronomy	Hyderabad (2019)
Literature	Kozhikode (2023)
Media Arts	-
Music	Chennai (2017), Varanasi (2015), Gwalior (2023)

5. ENVIRONMENT, GEOGRAPHY AND DISASTER MANAGEMENT

5.1. ENVIRONMENT

5.1.1. Adaptation Gap Report

Current Context

UNEP recently released **Adaptation Gap Report 2023: Underfinanced. Underprepared-Inadequate investment and planning on climate adaptation leaves world exposed.** The Report claims, that **current ambition on raising climate finance** won't be enough.

Key findings

- **Global temperatures and climate impacts and risks continue to rise**
  - ✓ Current climate action is woefully inadequate to meet the temperature and adaptation goals of the Paris Agreement.
  - ✓ While global average temperatures are **already exceeding 1.1°C above pre-industrial** levels, current plans reflected in the **nationally determined contributions (NDCs)** are putting us on a path towards 2.4°C–2.6°C by the end of the century
- **One out of six countries** still does not have a **national adaptation planning instrument** and more must be done to close the remaining gap.
- **Progress in adaptation implementation in developing countries is plateauing.**
  - ✓ The number of adaptation actions supported through the four international climate funds was lower in 2022 than in the previous year but their value has been rising due to investments in very large projects.
- Despite the urgent need to accelerate and scale up international public adaptation finance to developing countries, **these flows have declined since 2020.**
  - ✓ In 2021, just about $21 billion went to developing countries for adaptation projects, which was down about 15 percent from the previous years.
- The **adaptation finance gap is likely 10–18 times** as great as current international adaptation finance flows – **at least 50 per cent higher than previous range estimates.**
- **Gender equality and social inclusion** are inadequately included in adaptation finance needs and flows.

Ways to bridge the adaptation finance gap

This report **identifies seven ways to bridge the adaptation financing gap.**

i. **International public adaptation finance**,
ii. **Domestic expenditure on adaptation**
iii. **Private-sector finance for adaptation**, even if relative contributions to closing the adaptation finance gap remain uncertain.
iv. **Remittances** by migrants to their home countries which often contribute significantly to GDP,
v. **Increasing finance tailored to small and medium-sized enterprises** since they comprise the bulk of the private sector in many developing countries,
vi. **Reform of the global financial architecture**, which has enormous potential to support developing countries in boosting their resilience against future climate shocks, including through changes in managing vulnerable countries' debt burden, and
vii. Implementation **of Article 2.1(c) of the Paris Agreement** on making finance flows consistent with a pathway towards low-carbon and climate-resilient development.

Adaptation Gap Report

It is an annual publication from the UNEP, released just ahead of the year-ending climate change conference, and presents the global situation of adaptation to climate change.

UN Environment Programme (UNEP)

- It is an intergovernmental organization established in June 1972 as an outcome from the United Nations Conference on the Human Environment (Stockholm Conference, 1972).
- It is the leading global authority on the environment.
- Its primary goal is to catalyze action on the environment and promote solutions to the triple planetary crisis of climate change, nature and biodiversity loss, and pollution and waste.
- Headquarter: Nairobi, Kenya.
- Other reports by UNEP
  - ✓ Global Environment Outlook (GEO) Report
  - ✓ Triple Emergency
  - ✓ Emissions Gap Report

Related Concepts

Climate Finance

- Climate finance refers to **local, national or transnational financing**—drawn from public, private and alternative sources of financing—that seeks **to support mitigation and adaptation actions that will address climate change.**
- **Initiatives for Climate Finance**
  - ✓ **The National Adaptation Fund for Climate Change (NAFCC)** was established in August, 2015 to meet the cost of adaptation to climate change for regions particularly vulnerable to the adverse effects of climate change.
  - ✓ **National Clean Energy Fund (NCEF)** was created out of a cess on coal produced/imported ("polluter pays" principle) for the purposes of financing and promoting clean energy initiatives.
  - ✓ **Under the Clean Development Mechanism,** emission-reduction projects in developing countries can earn certified emission reduction credits under the Kyoto Protocol.

Adaptation

- The **process of adjustment to actual or expected climate and its effects.** In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (IPCC).

Adaptation gap

- The **difference between actually implemented adaptation and a societally set goal,** determined largely by preferences related to tolerated climate change impacts and reflecting resource limitations and competing priorities (UNEP)

5.1.2. Air Pollution

Current Context

In the wake of winter and the festive season, the **Delhi-NCR region contends with a decline in air quality,** presenting a pressing health and environmental challenge.

About

- Pollution levels in and around Delhi have consistently been in the **"critical" category, with Air Quality Index (AQI)** readings in the **range of 400** at various locations for the past few days.
- A recent study, called **the Air Quality Life Index (AQLI),** published in August 2023 by **the Energy Policy Institute at the University of Chicago,** has identified Delhi as the **most polluted city in the world**, with residents potentially losing a significant portion of their lifespan due to pollution.

Air pollution

As per WHO air pollution is contamination of the **indoor or outdoor environment** by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere.

Reasons for increasing air pollution in Delhi-NCR

- **Vehicle Emissions**: Delhi has a **high density of vehicles**, and emissions from automobiles contribute significantly to air pollution.
- **Industrial Pollution**: The presence of industries in and around Delhi also contributes to air pollution. **Industrial emissions release pollutants** into the air, affecting air quality.
- **Construction Activities**: Dust from construction sites contributes to **particulate matter** in the air.
- **Burning of Crop Residue**: During the post-harvest season, farmers in the neighboring states of Punjab and Haryana burn crop residue, leading to the influx of smoke and pollutants into Delhi.
- **Waste Burning:** Burning **of solid waste, including plastic and other materials**, releases harmful pollutants into the air.
- **Meteorological Factors:** Certain weather conditions, such **as low wind speed and temperature inversion,** can trap pollutants close to the ground, exacerbating the pollution problem.

Impacts of air pollution

- **Health Issues:**
  - ✓ **Respiratory Problems:** High levels of particulate matter (PM) and pollutants contribute to respiratory issues such as asthma, bronchitis, and other respiratory infections.
  - ✓ **Cardiovascular Diseases:** Long-term exposure to air pollution is associated with an increased risk of cardiovascular diseases, including heart attacks and strokes.
  - ✓ **Lung Cancer:** Prolonged exposure to air pollutants like PM2.5 is linked to an elevated risk of lung cancer.
- **Vulnerable Populations:**

- ✓ **Children and Elderly:** Children and the elderly are particularly vulnerable to the health effects of air pollution. It can lead to developmental issues in children and exacerbate existing health problems in the elderly.

- **Reduced Life Expectancy:**
  - ✓ Studies suggest that the high levels of air pollution in Delhi can lead to a reduction in life expectancy for residents due to the increased risk of various health conditions.
- **Impact on Productivity:**
  - ✓ Poor air quality can affect productivity and work performance as individuals may experience fatigue, respiratory discomfort, and other health issues.
- **Environmental Impact:**
  - ✓ **Vegetation and Wildlife**: Air pollution can harm plants and wildlife. Ozone and other pollutants can damage vegetation, affecting ecosystems and biodiversity.
  - ✓ **Water Bodies:** Some air pollutants can also contribute to water pollution when they deposit into water bodies, impacting aquatic ecosystems.
- **Visibility and Transportation:**
  - ✓ Reduced visibility due to smog and haze can lead to transportation hazards, increasing the risk of accidents on the roads and disrupting air and rail travel.
- **Economic Costs:**
  - ✓ The economic costs associated with health care expenditures, lost productivity, and damage to ecosystems due to air pollution can be substantial.
- **Social Impacts:**
  - ✓ The poor air quality can contribute to social issues as people may face disruptions in daily life, school closures, and limitations on outdoor activities.

Key challenges in tackling Air-Pollution

- **Lack of Regional Coordination:**
  - ✓ Air pollution does not respect administrative boundaries, and efforts to address it require coordinated action across multiple states and regions.
- **Lack of Strict Enforcement:**
  - ✓ Despite the existence of environmental regulations, the enforcement of emission standards and pollution control measures is often lax.
- **Inadequate Monitoring and Data:**
  - ✓ Limited air quality monitoring infrastructure and real-time data make it difficult to assess the extent of pollution accurately.
- **Agricultural Practices:**
  - ✓ Crop residue burning in neighboring states is a significant contributor to air pollution in Delhi during certain seasons.
- **Dependency on Fossil Fuels:**
  - ✓ The dependence on fossil fuels for energy, including coal and diesel, contributes significantly to air pollution.

Air Quality Index (AQI)

- AQI is a number, which is a **measure of air quality.**
- The higher the AQI, the worse the air.
- There are **six categories** of AQI, namely 'Good' (0-50), 'Satisfactory' (50-100), 'Moderately polluted' (100-200), 'Poor' (200-300), 'Very Poor' (300-400), and 'Severe' (400-500).
- It is acquired by measuring emissions of **eight major pollutants** present in the air: **Particulate matter (PM2.5 and PM10), Ozone (O3), Carbon Monoxide (CO), Nitrogen Dioxide (NO2), Sulphur Dioxide (SO2), Lead (Pb) and Ammonia (NH3)** emissions.

Initiatives taken

- **The Graded Response Action Plan (GRAP):** a comprehensive framework designed to combat air pollution in the Delhi-NCR (National Capital Region). It is a set of graded measures that can be implemented based on the severity of the air quality.
- **Commission for Air Quality Management**: set up for Air Quality Management in National Capital Region and Adjoining Areas for better co-ordination, research, identification and resolution of problems surrounding the air quality index.
- **National Clean Air Programme (NCAP)**: Launched in 2019 for reducing for comprehensive mitigation actions for prevention, control and abatement of air pollution.
  - ✓ The Centre has set a **new target of a 40% reduction** in **particulate matter concentration** in cities covered under the National Clean Air Programme (NCAP) by 2026, updating the earlier goal of 20 to 30% reduction by 2024
- **Odd-Even Scheme:** The Delhi government has implemented the odd-even scheme at times, restricting the use of private vehicles based on their registration numbers, with the aim of reducing vehicular emissions.
- **Ban on Construction Activities:** Temporary bans on construction activities are often imposed during periods of high pollution to control the release of dust particles into the air.
- **Crop Residue Management**: Efforts have been made to encourage farmers to adopt alternative methods for managing crop residue instead of burning it. For example – use of **Happy seeder machines.**

- ✓ According to data from **Indian Council of Agricultural Research (ICAR),** Punjab recorded 4,059 stubble burning cases this year from September 15 to October 27, while in the same period in 2022, Punjab saw 8,147 fires.

- **Other technologies**
  - ✓ **Wind Augmentation and Air Purifying Unit (WAYU) devices**
  - ✓ Use of **Smog Towers**
  - ✓ **PUSA Decomposer**

5.1.3. Geoengineering- Cloud Seeding/Artificial Rain

Current Context

Recently, the Delhi government had announced that it was considering **Geoengineering solutions** like **'Cloud Seeding' or 'Artificial Rain'** to wash away pollutants in the air.

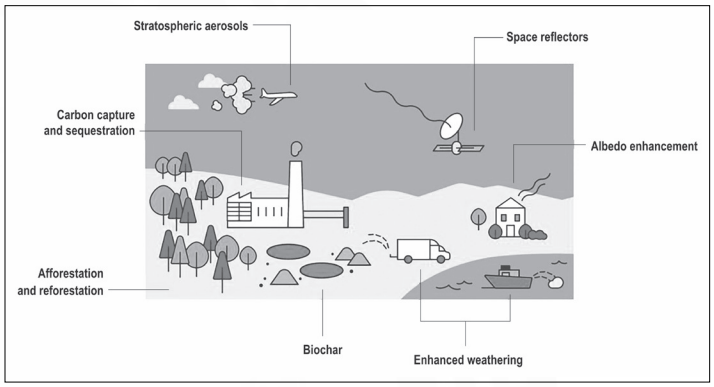
What is Geoengineering?

- Geoengineering, as per the **Oxford Geoengineering Programme**, is described as **purposeful, extensive interventions** in the Earth's natural systems **to mitigate climate change**.
- These interventions encompass technologies like **Solar Radiation Management**, **Carbon Dioxide and Greenhouse Gas Removal** from the atmosphere, large-scale afforestation, and comprehensive protection of the cryosphere.

Types of Geoengineering

GHG Removal (GGR) or Carbon Geoengineering

- It focuses on directly **extracting carbon dioxide or other greenhouse gases** from the atmosphere.
- **Techniques include**
  - ✓ **Afforestation:** Large-scale **tree planting.**
  - ✓ **Biochar:** Charring biomass and burying it to **sequester carbon in soil**.
  - ✓ **Bio-Energy with Carbon Capture and Sequestration**: Growing biomass, burning for energy, and capturing carbon emissions.
  - ✓ **Ambient Air Capture**: Using machines to **extract carbon dioxide** from the air, effective if carbon negative.
  - ✓ **Ocean Fertilization:** Adding **nutrients to specific ocean locations** to boost primary production.
  - ✓ **Enhanced Weathering**: Exposing minerals to react with atmospheric carbon dioxide and storing resulting compounds in oceans or soil.
  - ✓ **Artificial Snow: Covering the ice sheet with artificial snow** utilizing wind turbines to pump **seawater 1,500 meters up and freezing it.**
  - ✓ **Peatland restoration:** Aims to enhance **carbon sequestration** by rehabilitating degraded peatlands through measures such as rewetting, preventing degradation, and promoting the growth of peat-forming vegetation.
  - ✓ **Fake Tree**: Designed to **mimic natural carbon capture processes** by extracting carbon dioxide directly from the atmosphere.



Forest for Carbon Geoengineering

- In Boreal Forests, up to 80% of total carbon is stored in soils, mainly as dead organic matter (peat).
- Tropical forests absorb around 18% of CO2 from fossil fuels.
- The emphasis lies in trees, plants, and the soil acting as temporary sinks for carbon released by fossil fuel burning.
- The Kyoto Protocol (1997) under the UNFCCC acknowledges tree and soil absorption as a valid method for meeting emission reduction commitments.

Solar Radiation Management (SRM)

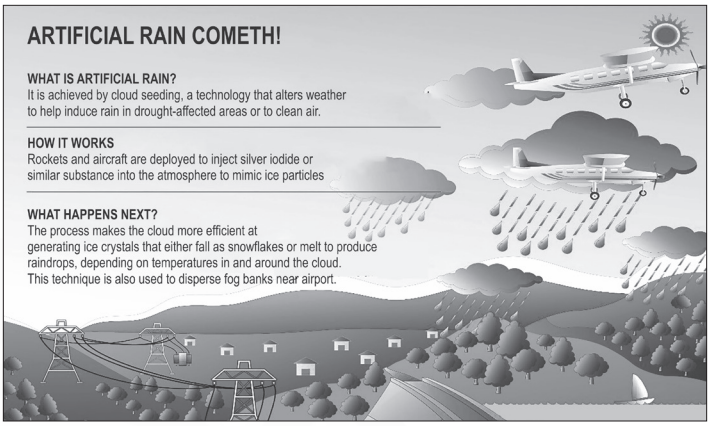
- SRM refers to deliberate interventions in the Earth's climate system aimed at **reflecting a portion of the Sun's energy back** into space to mitigate global warming.
- **Techniques include**
  - ✓ **By Enhancing/ Modification Albedo:** Increasing reflectiveness of clouds or land.
  - ✓ **Using Space Reflectors/Sunshade:** To block sunlight before reaching Earth.
  - ✓ **Introducing Stratospheric Aerosols:** To reflect sunlight in the upper atmosphere.
  - ✓ **Whitening of cloud**: Spray Sea water in sky.
  - ✓ **Copy Volcano**: Inject H2S into the atmosphere to reflect sunlight.

Artificial Rain (Cloud Seeding)

- **Definition:** Artificial rain, also known as Cloud Seeding,

is a **method used to enhance precipitation** by dispersing substances into the air **to encourage the formation of rain or snow.**

- **Technique:** Seeding clouds with materials like **silver iodide, potassium iodide, or dry ice**, which act as nuclei for water droplets to form around.
- **Mechanism:** These particles **attract moisture**, leading to the growth of larger droplets, potentially **stimulating precipitation** in clouds that might not otherwise produce rain or snow.
- **Effectiveness:** Varies depending on atmospheric conditions and other factors.



Case Studies

- **With respect to Delhi Air-Pollution**
  - ✓ The Delhi government has unveiled a plan to combat escalating air pollution by implementing Cloud Seeding, an approach also approved by the Supreme Court.
  - ✓ Collaborating with scientists from IIT Kanpur, they aim to induce artificial rain using silver iodide aerosols in cloud seeding.
  - ✓ This innovative measure seeks to stimulate precipitation and alleviate air pollution in Delhi, showcasing proactive efforts to address environmental challenges.
- **Other cases**
  - ✓ Cloud seeding in India has been primarily conducted during the monsoon season in states like Karnataka, Maharashtra, and Tamil Nadu.
  - ✓ **IIT Kanpur conducted** experiments during **the pre-monsoon months of April and** May **in 2018,** on their campus. Out of six trials, five resulted in rain.

5.1.4. Carbon Border Adjustment Mechanism (CBAM)

Current Context

Commerce and Industry Minister has indicated that India is **mulling a domestic tax option** on certain sectors and using that levy to support the **green energy transition** to deal with **the European Union's Carbon Tax.**

About

- At the **Energy Transition Dialogues** hosted by **Global Energy Alliance for People and Planet**, India strongly criticised the **Carbon Border Tax**, and is in dialogue with the EU on the issue.
- **India is looking at potentially taxing high-carbon goods locally**, and then using the proceeds to support its green energy transition, to avoid the **European Union's carbon tax** on imports

Carbon Border Adjustment Mechanism (CBAM)

- CBAM is **a tariff on carbon-intensive products** to **offset carbon leakage** and it may see up to 35% tariff on imports of high-carbon goods such as steel, iron ore and cement from India.
- CBAM is a part of the "**Fit for 55 in 2030 package**" which is the EU's plan **to reduce greenhouse gas (GHG) emissions** by at least **55% by 2030 compared to 1990 levels** in line with the European Climate Law.
- The CBAM is expected to achieve three objectives:
  i. **Reduce EU's emissions**;
  ii. For EU, **not to lose competitiveness** in carbon-intensive goods; and
  iii. To make the **targeted countries reduce the carbon intensity** of their exports.
- The EU has decided to impose Carbon Border Adjustment Mechanism (CBAM), or carbon tax, which will cover products such as **cement, steel, aluminium, oil refinery, paper, glass, chemicals and electricity generation**.

Carbon Leakages

According to the European Commission, carbon leakage occurs when companies based in the EU move carbon-intensive production abroad to countries where less stringent climate policies are in place, or when EU products get replaced by more carbon-intensive imports.

Concerns and Impact

- The countries most affected will be **Russia, Ukraine, Turkey, India and China.**
- The European Union's decision to impose a carbon tax

on certain sectors like steel **is "ill-conceived"** and it **would impact the manufacturing sector of the EU**.

- It is a **non-tariff barrier** hindering a robust and reliable global supply chain.
  - ✓ Such taxes sought to be imposed are a matter of concern because there is a **lot of uncertainty** around these developments.
- It is **perceived as unjust from India's perspective** that carbon pricing in the country is expected to be on par with the pricing structure in Europe.
- This move is against the **Principle of Equity** and is seen as a **Trade Barrier**.
- The CBAM would lead to **Trade Distortion**, particularly for developing and least developed countries.

Impact on India

- This could affect the competitiveness of Indian products in international markets, especially compared to goods from regions with lower carbon intensity.
- **(CBAM) will have an adverse impact on India's exports** of metals such as iron, steel and aluminium products to the EU.
  - ✓ **26.4 percent of India's exports** of products are potentially covered by CBAM.
- **Economic Adjustment:** Indian industries, particularly those with high carbon emissions, might need to make adjustments to comply with CBAM. This could involve investments in cleaner technologies, changes in production processes, or other measures to reduce carbon intensity.

Global Energy Alliance for People and Planet (GEAPP)

- The Rockefeller Foundation and its partners invested $10 billion to establish the Global Energy Alliance for People and Planet (GEAPP), at COP26 in November 2021.
- The GEAPP is an alliance of philanthropy, governments in emerging and developed economies, and technology, policy, and financing partners.
- Its mission is to accelerate a renewable energy tipping point that powers progress for people and planet.
- GEAPP in India has announced strategic partnerships to support India's goal of achieving clean energy independence by 2047.

Way Ahead

- **India is considering a two-track approach**: Resisting CBAM in multilateral forums and exploring the possibility of imposing a reciprocal tax on exports to the EU.
  - ✓ **As per Minister of Commerce and Industry** India would neutralise it by levying its **own carbon tax.**
  - ✓ Resisting CBAM in Multilateral Forums
- **Building alliances with developing nations:** India and South Africa, along with some other developing nations, are gearing up to challenge the European Union's (EU's) carbon border adjustment mechanism (CBAM) at the World Trade Organization (WTO).
- **Develop standards to measure carbon embedded into India's products:** India's Bureau of Energy Efficiency (BEE) under the Power Ministry is working on such standards.

5.1.5. Noise Pollution

Current Context

Despite the **Supreme Court ban on fireworks in Delhi, noise levels exceeded safe standards** this Diwali.

Key Details

- The decibel level **ranged from 53.7 dB(A) to 84.5 dB(A)** compared to a normal range of **46.4-69.5 dB(A).**
- The noise levels were **higher in residential, commercial, and industrial areas** compared to last year.

Causes of Noise Pollution

- **Industrialized urban areas** contribute to noise pollution.
- **High-volume music** played in social events like **weddings, public gatherings etc**. create noise pollution.
- During **Deepavali**, **firecrackers (even 'green' ones)** routinely produce more than **90 dB** of sound.
- **Intensity of vehicles** on the roads is one of the major reasons.
- **Construction activities** like mining, construction of bridges, dams, buildings, etc. is a major contributor.

Noise Pollution

- The Central Pollution Control Board defines noise as "unwanted sound". Thus, Noise Pollution may be defined as periodic exposure to heightened sound levels which cause harmful effects in humans and other living beings.
- WHO claims, sound intensities less than 70 dB are not damaging for living organisms, regardless of the duration of exposure.
- Exposure for more than 8 hours to noise above 85 dB may be hazardous.

Harmful impacts of Noise Pollution

- Research has found links between loud environs and **sleep disorders, tinnitus, stress, anxiety, hearing loss** etc.

- More than **80 dB(A)** in offices has been associated with **hypertension** whereas above **50 dB(A)** at night, when the body is unaccustomed to loud noises, could **increase cortisol levels**.
- **Traffic noise** has burgeoned in cities where haphazard development has forced motorists to **overuse horns**.
- **Old buildings and even new constructions develop cracks** under the stress of explosive sounds.
- A number of **noise-pollution-related diseases** and dysfunctions **affect the health of children**, and also negatively affects their school performance.
- **Oil drills, sonars, recreational watercrafts** etc. cause noise pollution for marine life. It interferes with **cetaceans**' (whales and dolphins) feeding habits, reproductive patterns and migration routes, and can even cause hemorrhage and death.
- Noise pollution **affects dolphins' ability to communicate** as per studies.
- **Animals and especially birds** also fall prey to the harmful impacts of noise pollution due to traffic, firecrackers etc.

Steps taken

- **Noise Pollution (Regulation and Control) Rules, 2000** regulate and control noise pollution in India.
- In 2018, the **Council of Scientific and Industrial Research** launched less noxious and less noisy **Green Crackers**, whose use various statutory bodies have mandated.
- **The Noise Pollution (Regulation and Control) Rules 2000** stipulate
  i. Firecrackers **cannot be burst in 'silence zones'**, designated by State governments, and anywhere after 10 p.m.
  ii. From 6 a.m. to 10 p.m. (i.e., 'daytime') and in industrial areas, firecracker noise cannot exceed 75 dB(A) Leq.
  iii. The **thresholds in commercial and residential areas** are 65 dB(A) Leq and 55 dB(A) Leq, respectively.
- **Standards for motor vehicles, air-conditioners, refrigerators, diesel generators and construction equipments** are prescribed under the **Environment (Protection) Act, 1986**.
- **The Central Pollution Control Board (CPCB)** ensures monitoring and compliance to set standards.
- Noise emanating from industry is regulated by **State Pollution Control Boards/Pollution Control Committees (SPCBs)/(PCCs)** for states/Union Territories under the **Air (Prevention and Control of Pollution) Act, 1981.**
- **National Ambient Noise Monitoring Network (NANMN)** established 70 noise monitoring stations in 2011 across seven cities.
- **The Supreme Court in 2005** banned the **use of loudspeakers and music systems** between 10 pm to 6 am except in the cases of public emergencies.

Issues with Regulations

- Different **loudness zones** are seldom publicly demarcated while some places are both residential and commercial.
- **The rules are unclear** about the sanctions to be meted out to offenders.
- **Enforcement remains obscure.** So, focusing on marginal improvements to firecrackers before every festival is becoming a red herring.

5.1.6. National Mission for Clean Ganga (NMCG)

Current Context

The 7th edition of **Ganga Utsav** was organized recently by **National Mission for Clean Ganga** in New Delhi.

About

- The NMCG, listed as a society as per the **Societies Registration Act, 1860**, acted as the implementation arm of the **National Ganga River Basin Authority (NGRBA)**, constituted under the **Environment (Protection) Act (EPA), 1986**.
  - ✓ Later, the NGRBA was discontinued (2016) and the **National Council for Rejuvenation, Protection, and Management of River Ganga** came instead, headed by the **Prime Minister**.
- The primary objective of NMCG is **pollution abatement and rejuvenation** of the Ganges by adopting a river basin approach through programs like the **Namami Gange** and to **maintain minimum ecological flows** in the river Ganga
- NMCG is placed under the **Ministry of Jal Shakti** and has a two-tier management structure, both of which are headed by the Director General, NMCG-
  - ✓ Governing Council
  - ✓ Executive Committee

Programs under the NMCG

- **Namami Gange Programme** is an Integrated Conservation Mission, approved as a 'Flagship Programme' by the Union Government in June 2014 to accomplish the twin objectives of effective abatement of pollution and conservation and rejuvenation of National River Ganga.

- **Ganga Praharis** initiative to train and empower local communities as guardians of the river.
- **Ganga Aamantran Abhiyan** to promote adventure tourism and ecological awareness along the river.
- **Ganga Utsav** to celebrate the cultural and spiritual significance of the river.
- **Ganga Quest**, an online quiz competition to educate students about the river.
- **Ganga River Basin Management Plan** formulation with inputs from experts and stakeholders.

List of Initiatives on Ganga

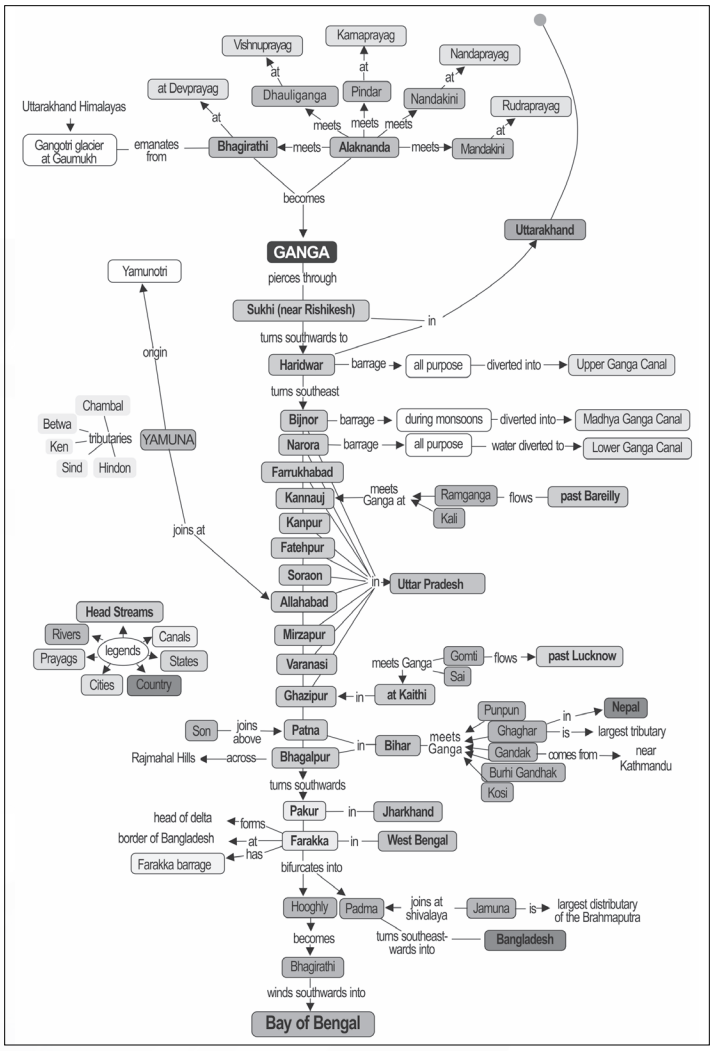
- Namami Gange Programme
- Ganga Action Plan
- National River Ganga Basin Authority (NRGBA)
- Clean Ganga Fund
- Bhuvan-Ganga Web App

Challenges

- **Delays in commissioning of Waste Management Plans** due to problems with land acquisition.
- **Lack of initiative** from the Local-level Governments create bottlenecks in MSW segregation and recycling, creating a cadre of village and town-level volunteers etc.
- **NMCG is a Rs 20,000 crore mission** but only Rs 14,745 crore has been released to States for infrastructure work, as of June 2023.
- Many towns and cities along the river **lack proper waste treatment infrastructure**, allowing untreated waste to enter the river.
- The **Quality Council of India** flagged the issue of rubbish heaps found near ghats posing a threat to the cleanliness of the Ganga.

Way Forward

- The NMCG's vision to develop a **Water Quality Index**, on the lines of the AQI must be spearheaded.
- Success of the mission must entail **synergy between Administrative vision and Civil Society participation.**
- Greater **Inter-Agency coordination and dedicated plans** for implementation can boost the success of the NMCG which shall translate into manifold benefits.



5.1.7. Reference Fuel Production

Current Context

Recently, the **Union Petroleum and Natural Gas Minister** launched India's **first home-produced Reference Fuel** in New Delhi.

About Reference Fuel

- **Reference fuels (Gasoline and Diesel)** are **premium high-value products**, used for **calibration and testing of vehicles** by Auto OEMs and organizations involved in testing and certification in the automotive field.
- **Specification requirements of reference fuels** are more stringent than commercial gasoline and diesel.
- Fuel retailers like IOC sell petrol and diesel of **primarily two kinds - regular and premium**, through their fuel station network.
- The **biggest difference** between the normal and premium fuel lies in the **octane number**.
  - ✓ The **regular fuel** boasts an octane number of 87, but premium fuel has an octane number of 91 or even more.
  - ✓ The **octane number** is nothing but a unit to measure the **ignition quality of petrol.**
- However, for vehicle testing purposes, the fuel has to be of a **higher grade than regular or premium petrol and diesel**.

What is 'Gasoline'?

- Gasoline or petrol is a **derivative product of crude oil/ petroleum.**
- It is derived during **fractional distillation process** and has a translucent liquid form.
- It's not used in its crude form. Different **additives are added** like ethanol to use it as fuel for passenger vehicles.

Key terms

- **Octane Number:** It measures the fuel's **resistance to engine knocking.** Higher octane numbers signify better resistance to premature combustion in gasoline.
- **Cetane Number:** Indicates the **ignition quality of diesel fuel.** A higher cetane number signifies easier ignition.
- **Flash Point:** It is the **lowest temperature** at which a substance produces enough vapor to ignite momentarily.

  - ✓ The host of specifications -- from **Cetane number to flash point, viscosity, sulphur and water content, hydrogen purity and acid number** -- are listed under government regulations, such fuels are referred to as 'reference' petrol/diesel.

Uses of Reference Fuel

- Reference fuel is used **for developing engines and assessing its performance**. Earlier, India used to exclusively import it from other nations.
- These fuels are **critical for calibrating and testing by automobile manufacturers** and **testing agencies** like the International Centre for Automotive Technology (ICAT) and the **Automotive Research Association of India.**
- These reference fuels are used **for emission testing** of vehicles equipped with **spark ignition engines.**

Importance

- The **demand of reference fuels** in India is currently **met by importing** from other countries. This achievement not only **reduces India's dependence on imports** but also catapults India's energy industry to select global players armed with **exclusive competencies**.
- **IOC in line with the government's objective** of becoming **Atmanirbhar, or self-reliant**, has started producing the fuel at its refineries.
- This puts India into an **exclusive club of reference fuel producers** and is in line with international benchmarks.
- IOC has indigenously developed products that will **replace imports, ensuring a reliable supply** at a much **lower cost for vehicle manufacturers** and testing agencies.
- The indigenously developed product by Indian Oil **meets Automotive Industry Standard (AIS)** specifications, substitutes imports, and is available at better price with reduced lead time.
- It is part of PM Modi's **vision of transforming India into an 'energy-independent' nation by 2047,** which includes:
  - ✓ Diversification of energy supplies
  - ✓ Increasing India's exploration and production footprint
  - ✓ Alternate energy sources and meeting energy transition through gas-based economy
  - ✓ Green Hydrogen and EVs.

Producing refinery

- **IOC's Paradip refinery** in Odisha will produce 'reference' grade petrol and its **Panipat unit** in Haryana will produce such quality diesel.
- **Indian Oil Corporation Limited** has established facilities for production of **Reference Gasoline Fuels (E-5, E-10 and E-20) at its Paradip Refinery** and **Reference Diesel Fuel (B-7) at its Panipat** Refinery.

5.1.8. World Biosphere Reserve Day

Current Context

On the second anniversary of **World Biosphere Reserve Day, UNESCO** in partnership with the **Ministry of Environment, Forests and Climate Change** and the **National Centre for Sustainable Coastal Management,** concluded the **10th South and Central Asian Biosphere Reserve Network Meeting (SACAM)** in Chennai (November 1-3).

About

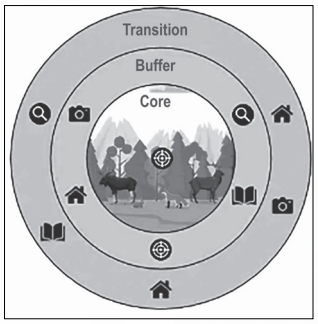
- **World Biosphere Reserve Day is celebrated on November 3** each year to raise awareness of the importance of biosphere reserves and to promote their conservation and sustainable use.
- With the theme "**Ridge to Reef**," the SACAM provided a **platform for exchanging knowledge and fostering collaborations** in the realm of sustainable environmental practices in the **South and Central Asia Region.**

Biosphere Reserve

- Biosphere Reserve (BR) is an **international designation by UNESCO** for representative parts of natural and cultural landscapes extending over large area of terrestrial or coastal/marine ecosystems or a combination thereof.
- **They are sites for** testing interdisciplinary approaches to

understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity.

- BRs are thus **special environments for both people and the nature** and are living examples of how human beings and nature can co-exist while respecting each other's needs.
- **The Biosphere Reserve consists of three main zone - Core, Buffer and Transition.**
  - ✓ **Core Zone**: In the heart of each BRs lies the **strictly protected core zone**, providing habitat for flora and fauna, and protecting water, soil, air, and biota as a whole ecosystem.
  - ✓ **Buffer Zone:** There is a buffer zone surrounding the core zone, where **people live and work in harmony with nature**; a zone that also functions as a laboratory for scientists to study nature, and for training and education.
  - ✓ **Transition Zone:** This is the **outermost edge** where communities practise socio-culturally and ecologically sustainable human activities.
- **Designated by UNESCO** to promote the **conservation of biodiversity, sustainable development, and research**, biosphere reserves are also supported by other United Nations agencies.



  - ✓ For example, the **United Nations Development Programme**, the **United Nations Environment Programme**, as well as **the International Union for Conservation of Nature.**
- According to UNESCO, there are currently **748 biosphere reserves across 134 countries, including 22 transboundary sites**, enhancing the friendly cooperation between neighbouring countries.
  - ✓ They impact the lives of more than **250 million people** in 134 countries; 12 sites can be found in India alone.

Importance

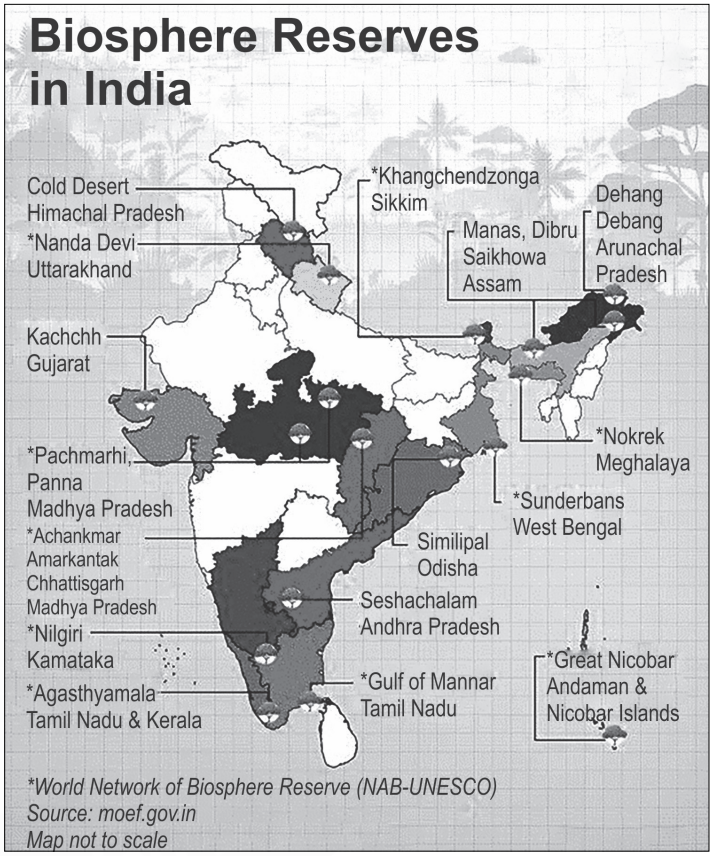
- **Biosphere reserves are vital for the future of our planet**. They are a living testament to the resilience of nature, that even amidst human activity, finds a way to flourish.
- **They are home to a wide variety of ecosystems** — from tropical rainforests to alpine deserts, and thereby provide home to countless unique and endangered plants and animals species.

South and Central Asia MAB Network (SACAM)

The South and Central Asia MAB Network (SACAM) was created in 2002 and comprises Afghanistan, Bangladesh, Bhutan, India, Iran, Kazakhstan, Maldives, Nepal, Pakistan and Sri Lanka.

Man and the Biosphere (MAB)

The UNESCO Man and the Biosphere (MAB) programme, launched in 1971, is an Intergovernmental Scientific Programme that aims to establish a scientific basis for the improvement of relationships between people and their environments.



- In addition to playing a vital role in the **protection of biodiversity** and **ensuring the sustainable use of natural resources**, they also **provide opportunities for sustainable economic development and livelihood**.
- In recent years, biosphere reserves have become **crucial in our fight against climate change**, as these areas are home to many of the world's carbon sinks helping to absorb carbon dioxide from the atmosphere.
  - ✓ **Carbon sinks**, like forests and the ocean, provide solutions in implementing adaptation strategies to fight climate change.

Convention on Migratory Species (CMS)

- It is an **international agreement** that aims to **conserve migratory species** throughout their ranges.
- The agreement was signed under the auspices of the **United Nations Environment Program (UNEP)** and is concerned with conservation of wildlife and habitats on a global scale.
- CMS is also known as the **Bonn Convention.**
- It is the **only convention** that deals with taking or harvesting of species from the wild.
- **It was signed in 1979** in Bonn, West Germany and entered into force in 1983.

BRs in India

- In India, at present there are **18 notified biosphere reserves** spanning 60,000 sq km.
- The **blue mountains of the Nilgiris** stretching over Tamil Nadu, Karnataka and Kerala, was the **first biosphere reserve in India.**
- The largest biosphere reserve is the **Gulf of Kachchh** (Gujarat) and the smallest is **Dibru-Saikhowa (Assam).**

Threats to BRs

- In times of **global challenges** such as **climate change, biodiversity loss and sustainable development**, the role of biosphere reserves becomes even more important.
- Despite these sites being the most vital ecosystems protecting nature, these oases are not without threats such as **deforestation, invasive species and land use changes** such as mining.
- With **increasing urbanisation** and **constant growth of the world population**, exploitation by humans is ever increasing.

Conservation efforts in India

- A scheme called **Biosphere Reserve** is being implemented by the **Government of India since 1986**.
- **There have been significant advancements in the conservation of biosphere reserves on the local level**.
  - ✓ For example, in the **Sundarban Biosphere Reserve** in India, local communities are working together **to manage mangrove forests and protect the biodiversity of the region.**
  - ✓ In the **Gulf of Mannar Biosphere Reserve** in India, local communities, including women, are contributing towards conservation efforts by forming self-help groups, while the youth are getting engaged in eco-tourism.
  - ✓ Recently recognised with the **UNESCO Michel Batisse Award for Biosphere Reserve Management 2023,** the Gulf of Mannar Biosphere Reserve Trust has also introduced the concept of **'plastic checkpoints'.**
    - **Community members** check all vehicles and tourists for plastic waste, which is collected, recycled and used for the construction of roads.

5.1.9. Migratory Birds

Current Context

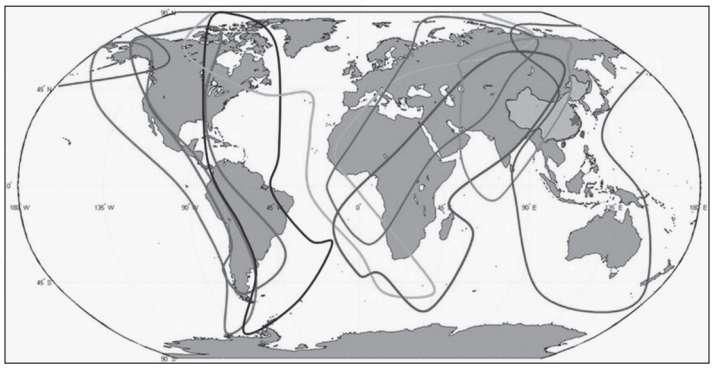
The number of **migratory birds declined in Delhi/NCR region** as compared to previous years.

About

- There are no migratory birds at **Okhla Bird Sanctuary** due to unavailability of water and the numbers were thin at **Dhanauri** too.

Birds' Migration

- Bird migration is a **seasonal activity**. Generally, birds migrate from the northern hemisphere during the winter season to warmer regions of tropical/equatorial regions.
- India is considered as a preferred **wintering destination** for several species of migratory birds like **Bar headed Geese, Amur Falcons, Black necked cranes, Demoiselle cranes**, etc.
- According to the **Zoological Survey of India (ZSI),** the total number of migratory fauna from India comes to **457 species**.
  - ✓ **Birds comprise 83%** (380 species) of this figure.
  - ✓ Globally, more than 650 species are listed under the CMS appendices.



Reasons for decline

- **The decline in the number** of migratory birds is **attributed to various factors** including **wetland**

Some examples of migratory birds in India

The Asian elephant, Great Indian Bustard, Bengal Florican, Oceanic White-Tip Shark, Urial and Smooth Hammerhead Shark, Snow Leopard, Amur Falcons, Bar Headed Goose.

reclamation, pollution of wetland through domestic sewage, **hunting**, **trapping** in the migratory routes, indiscriminate use of **pesticides & fertilizers**, **reduction of habitat**, **climate change**, etc.
- ✓ **Effects of climate change** on migratory birds and change in their lifecycle.

- **As per the experts**, **high temperatures**, **poor habitat health**, alternative sites along the migratory routes, the delayed winters and pollution could be behind the low bird count so far.

Government efforts

- The Ministry has launched **the 'National Action Plan for Conservation of Migratory Birds along the Central Asian Flyway'** in November 2018.
  - ✓ The Action Plan emphasizes on **coordination and cooperation** between various Central Government Ministries, State Government Departments, managers of Protected Areas, local communities, Civil Societies and Private sector.
- **Rare and endangered species of birds** including migratory birds are included in **Schedule-I of the Wild Life (Protection) Act, 1972** thereby according them highest degree of protection.
  - ✓ **Stringent punishments** have been provided in the **Wild Life (Protection) Act, 1972** for violation of provisions of the Act.
  - ✓ Important **habitats of birds, including migratory birds** have **been notified as protected Areas** under the **Wild Life (Protection) Act, 1972** for better conservation and protection of birds and their habitats.
- **Wildlife Crime Control Bureau** has been established for control **of illegal trade in wildlife** and its parts and products.
- India is **a signatory to the Convention on Migratory Species (CMS)** and India has also signed Memorandum of Understanding (MOU) with CMS on Conservation of Siberian Cranes and Raptors.

5.1.10. One year of Project Cheetah

Current Context

Project Cheetah, India's ambitious attempt **to introduce African cats in the wild** in the country, has completed one year.

Outcomes of Project Cheetah in one Year

- **According to the Cheetah Reintroduction Project,** Cheetahs, meant for a **total of 142 months** in the wild, spent less than **27 months combined**.
  - ✓ **The project lost 40% of its functional adult population**. Of the 20 cats that arrived in India, **six died** and **two were unfit for the wild.**
    - **Four cubs were born in India, three of which died**, and the fourth is being raised in captivity.
    - **One female Cheetah has given birth to cubs on the Indian soil after 75 years**. One surviving cub is now 6 months old and doing well, showing normal growth pattern.
- **Establishment of home ranges**: Only three cheetahs, Namibian imports **Asha, Gaurav, and Shaurya**, have spent more than three months at a stretch in the wild. Even they have been stuck inside bomas since July.
  - ✓ It is **unlikely any of the cats would have established** "**home ranges**" in Kuno.
- **Reproduction:** The goal, as per the Action Plan, was to make Cheetah successfully reproduce in the wild.
  - ✓ However, **Siyaya aka Jwala**, the Namibian female that gave **birth to four cubs** in Kuno, was captive raised herself.
  - ✓ She was unfit for the wild and her cubs were born inside a hunting boma.
- **Livelihood:** The project has indeed generated a number of **jobs and contracts for the local communities**, and the price of land has appreciated significantly around Kuno.

Project Cheetah

- The Cheetah Reintroduction Project was commenced on September 17, 2022, to reintroduce the population of cheetahs, which were declared extinct in the country in 1952.
- It involves the translocation of cheetahs from South Africa and Namibia to Kuno National Park in Madhya Pradesh.
- The project was implemented by the National Tiger Conservation Authority (NTCA) in collaboration with the Madhya Pradesh Forest Department, Wildlife Institute of India (WII), and cheetah experts from Namibia and South Africa.

  - ✓ So far, **no cheetah has died due to unnatural causes** like poaching, hunting, snaring, accident, poisoning, and retaliatory killing.

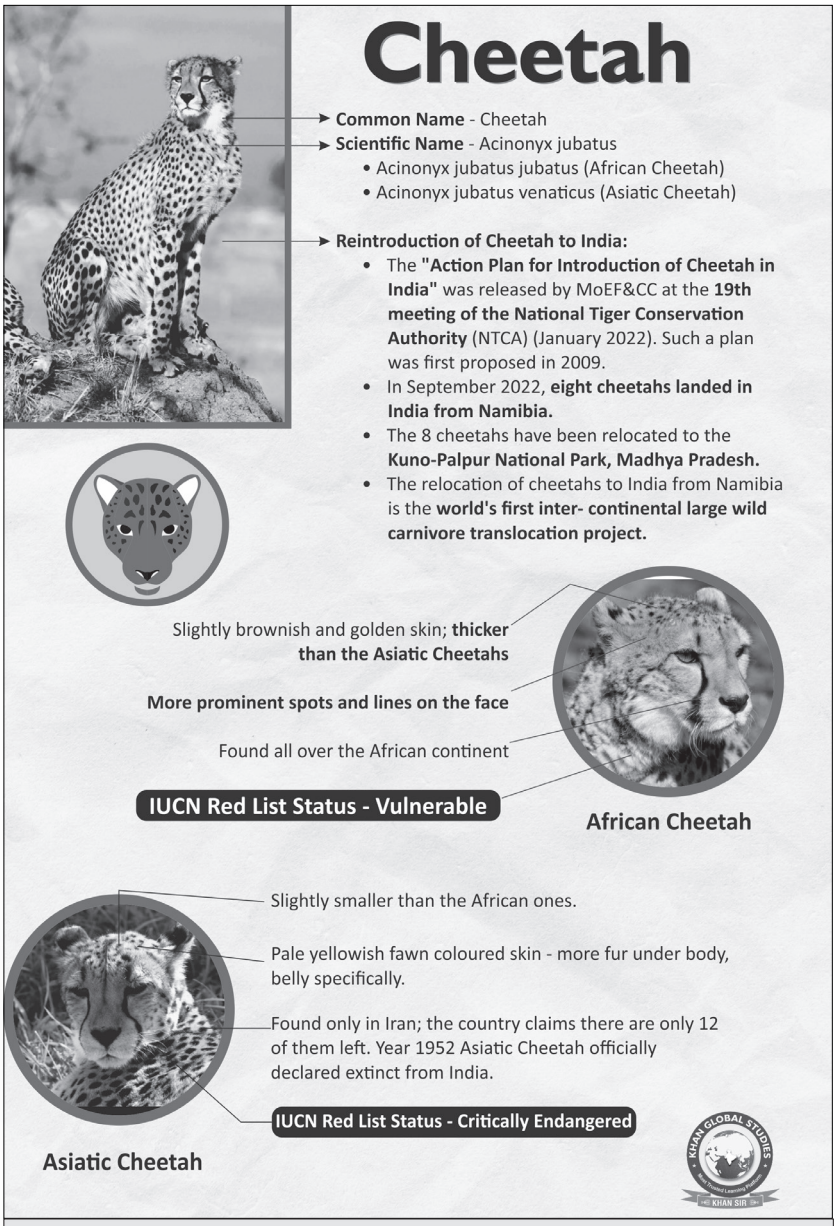
Kuno National Park

It's located in Sheopur district of Madhya Pradesh in Central India. It lies in North-West of Madhya Pradesh close to the state border with Rajasthan, thus the effects of Rajasthan's vegetation can be experienced in the forests of Kuno.

- ✓ **No human-cheetah conflict** has been reported in the area.
- ✓ **This has been possible due to huge community support** from the local villages.

Implementational bottlenecks

- **Three of the eight Namibian cheetahs were captive-raised, reportedly as "research subjects".**
- **India failed to support Namibia** for "**sustainable utilisation and management of biodiversity at international forums".**
  - ✓ **India abandoned its decades-old stand** by abstaining at the CITES vote against trade in ivory.
- **Kuno's inability to support a genetically self-sustaining population** necessitates a paradigm shift towards a **meta-population approach**.
  - ✓ Replicating the proposed **South African Model of Periodic Translocation for Genetic Viability** can have negative impacts on forest connectivity for natural wildlife dispersal, especially since cheetahs cannot travel long distances between scattered populations on their own.
- **The Cheetah Action Plan estimated** feasibility of long-term persistence with a **Carrying Capacity of 50+ Cheetahs** at the Kuno NP.
  - ✓ However, a periodic assessment in 2020 suggested **21 Cheetahs to be Kuno's limit**.



Ideal situation vs what happened in Kuno

MONTHSTHE CATS SHOULD HAVESPENT IN WILD IN INDIA

	Namibian		South African	
	Male	Female	Male	Female
Numbers	3	5	7	5
Months ideally in the wild	10	9	6	5
"Cheetah months' ideally in wild	30	45	42	25

Source: Project Cheesah Annual Repon

Total 'cheetah months' that should ideally have been spent in wild

142

MONTHS ACTUALLY SPENT INWILD IN INDIA

Namibian		South African	
Cheetah	Months in the Wild	Cheetah	Months in the Wild
Pawan	1.75	Gamini	2
Asha	4.37	Agni	1.25
Gaurav	4	Vayu	1.3
Shaurya	4	Nirva	2.5
Dhatri*	2	Veera	1.1
Jwala, Nabhar and Sasha's not released in the wild		Dheera	0.75
		Pravash	0.5
		Pavak	0.5
		Suraj*	0.75
TOTAL	16.12	Uday", Daksha and Tejas not released in the wild	
		TOTAL	10.65

26.77

Total months spent by all cheetahs in the wild

"Dend aduit, #Unft for the wiki

How the Cheetah project should have gone and what has happened since.

5.1.11. Sunflower Sea Starfish Face Extinction

Current Context

Recently, Scientists estimate that **more than 5 billion sunflower sea stars,** once a mighty **predator,** have died in the **Pacific Ocean because of warming waters.**

About

- **The Nature Conservancy** estimates that **5.75 billion** sunflower sea stars died over the span of three years, a **94 percent global decline**.

Sunflower Sea Stars

- It **(Pycnopodia helianthoides)** is among the **largest and fastest sea stars** in the world, with its **16 to 24 limbs reaching** a diameter of up to one metre.
  - ✓ The sunflower sea star is a **colorful creature**, with skin that can be purple, orange, brown, or yellow. It has **white spines all over its body**.
- **Habitat and Food:** It moves quickly and **decisively in Kelp Forests**, feeding on **sea urchins** and other types of invertebrates that feast on kelp beds.
  - ✓ It lives along the vast majority of the **Pacific coast of North America**.
  - ✓ They are **opportunistic hunters** of a wide range of marine invertebrates, and in some areas are important predators that regulate surrounding ecosystems.
- **Conservation Status:** IUCN Red List-Critically Endangered
- **Ecological Impact:** Without enough Sunflower Sea Stars, Urchins will destroy nearly all of **California's Kelp Forests**- **"the lungs of the ocean."**

Revival Efforts

- **The Birch Aquarium** at Scripps Institution of Oceanography near San Diego successfully **spawned three sunflower sea stars earlier this month**, the latest success story in a sprawling collaborative effort among institutions to help **sea stars reproduce and eventually reintroduce** them to the wild.
- Researchers at **several zoos and aquariums across the United States** have been working furiously to restore the population, led in part by the **Aquarium of the Pacific in Long Beach**, Calif., and the **Henry Doorly Zoo and Aquarium in Omaha.**

Kelp Forests

These are **under water areas** with high density of kelp. It covers **large part of the world coastline.** Also, they are considered as one of the **most productive and dynamic ecosystems** on the earth.

Causes of Death

- **Climate change** and **warming waters,** spurred by **Sea Star Wasting Disease** are the greatest causes.
- **Star Wasting Disease,** a degenerative disease that has been linked to the effects of climate change.
  - ✓ **From 2013 to 2017**, it killed more than 90 of sunflower sea star populations in what have been described as the **largest marine disease outbreak ever recorded.**

5.2. GEOGRAPHY

5.2.1. Partial Lunar Eclipse

Current Context

Recently, the moon entered the **penumbra stage**, a dark area on the earth caused by the moon, at midnight on the night of October 28 and 29.

About

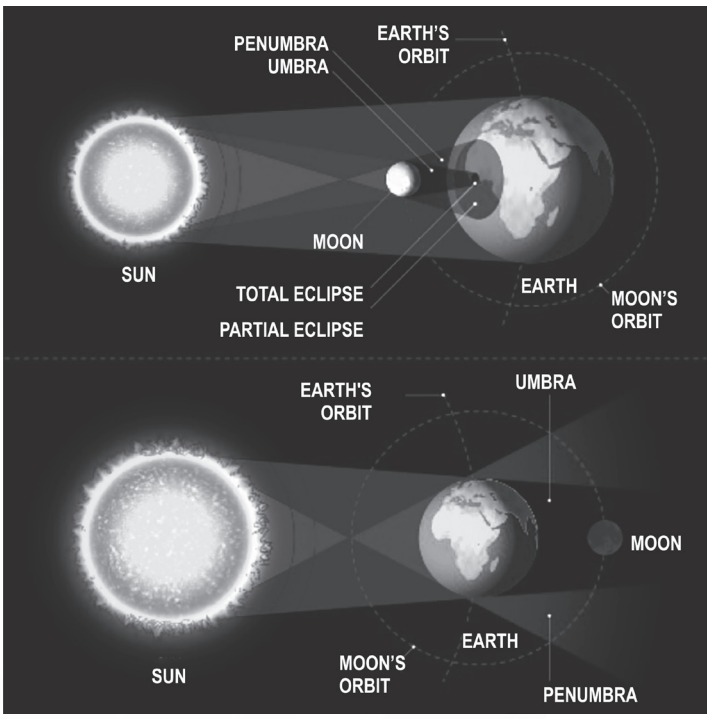
- The spectacle was visible from all corners of India, with the best viewing time around midnight.
- **This Partial Lunar Eclipse** was also visible in a vast region spanning the Western Pacific Ocean, Australia, Asia, Europe, Africa, eastern South America, northeastern North America, the Atlantic Ocean, the Indian Ocean, and the South Pacific Ocean.
- **The next lunar eclipse,** which will be **visible from India on 7 September 2025,** will be a **Total Lunar Eclipse.**
- **The last lunar eclipse** which was **visible from India was on 8 November 2022,** was a Total Eclipse.

Lunar eclipse

- Lunar eclipse takes place when the **Moon moves into the Earth's shadow**.
  - ✓ The Earth has to be directly between the Sun and the Moon, and a **lunar eclipse can only take place during a Full Moon**.
- **A lunar eclipse is marked by two stages** of the moon coming under the shadow of the earth.
  - ✓ First, the Moon moves **into penumbra** – the part of the Earth's shadow where **not all of the light from the Sun is blocked out**. Part of the Moon's disc will look dimmer than a regular full Moon.
  - ✓ And then the Moon moves into the **Earth's umbra,** where direct **light from the Sun is totally blocked out by the Earth.** This means the only light reflecting off the Moon's disc has already been refracted, or bent, by the Earth's atmosphere.
- **The umbral phase** is the most significant part of the eclipse.
  - ✓ During this phase, the **moon is directly aligned with the earth and is fully or partially immersed** in the earth's umbra.
  - ✓ The moon can take on a reddish or coppery hue during this phase, often referred to as a **'Blood Moon'**, due to the earth's atmosphere scattering and refracting sunlight, allowing only longer-wavelength red and orange light to reach and illuminate the moon.

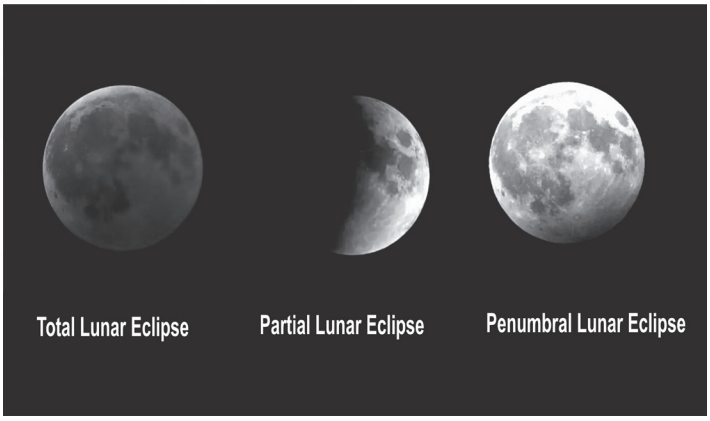
Types of lunar eclipses

- **Total Lunar Eclipse:** A lunar eclipse occurs when the Sun, Earth, and Moon align so that the Moon passes into Earth's shadow. In a total lunar eclipse, **the entire Moon falls within the darkest part of Earth's shadow**, called the umbra.



Full Moon

- It's the lunar phase when the Moon appears fully illuminated from Earth's perspective.
- It occurs when Earth is located between the Sun and the Moon.
- This means that the lunar hemisphere facing Earth (the near side) is completely sunlit and appears as an approximately circular disk.



- **Partial Lunar Eclipse:** An **imperfect alignment** of Sun, Earth and Moon results in the Moon passing through only part of Earth's umbra. The shadow grows and then recedes without ever entirely covering the Moon.
- **Penumbral eclipse:** The Moon travels through Earth's penumbra, or the faint outer part of its shadow. The Moon **dims so slightly that it can be difficult to notice**.

Other related Phenomena	
Geo-Astronomical Phenomena	**Geographical Events**
New Moon	Solar Eclipse
New Moon and Apogee (Moon farthest from Sun)	Annual Solar Eclipse
Full Moon	Lunar Eclipse
New/Full Moon and Perigee (Moon nearest to Sun)	Brighter Ring- Pink/Egg/Fish/Sprouting Grass Moon
Revolution of Moon around Earth	New/Full Moon
Revolution of Moon around Earth in Elliptical Orbit	Peri/Apogee
Revolution of Moon on tilted Orbital Plane	Solar/Lunar Eclipse
Revolution of Moon on tilted Orbital Plane in Elliptical Orbit	Different sizes of Moon in different Eclipses

5.2.2. Normal Monsoon

Current Context

The monsoon season, this year, has ended with **94% overall rainfall,** making it the **8th year in succession** that the seasonal rainfall has been broadly in **the normal range.**

About

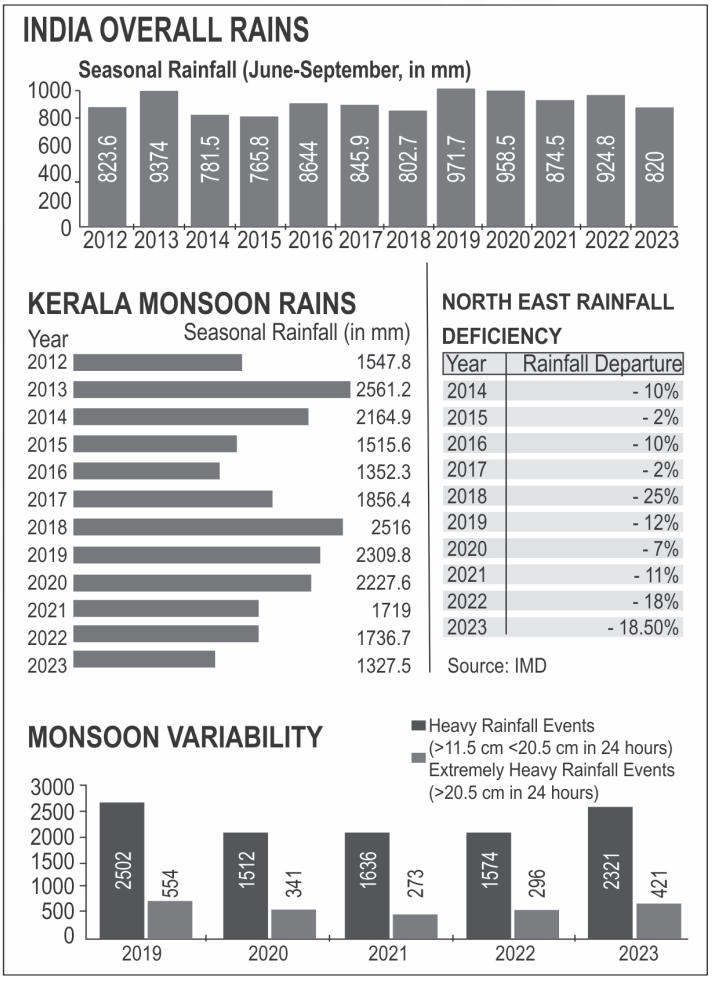
- **At the district level, the rainfall has been highly erratic.**
  - ✓ There have been **large variations in the distribution** of rainfall, in spatial as well as temporal terms.
  - ✓ While some days produced very heavy rainfall, prolonged periods went extremely dry.
- **Similarly, majority of the districts received very little rainfall** during most of the season.
- **This rainfall variability only seems to be increasing**, possibly because of climate change.

What is Monsoon?

- Monsoon is colloquially associated to the **rainy season in India** that continues from approximately, the month of **June, till the month of September**.
- The **seasonal reversal of monsoon winds (South-West and North-East winds)** is the most prominent feature of the Indian Monsoons.

District level variation

- **During the four-month monsoon period, there have been very few instances of districts receiving normal daily rainfall.**
  - ✓ Out of the nearly 85,000 district rain-days — 121 days of rainfall for each of the 718 districts — only 6% were found to be normal.
- **The season also produced the second largest number of extreme rainfall events in the past five years,** which



State level Variation

- Bihar, Jharkhand and West Bengal received particularly poor rainfall, each ending with a deficiency of more than 20%.
- Nagaland, Manipur, Mizoram and Tripura also had more than 20% deficit.
- Kerala is one of the rainiest states in the country, but this year it finished with the largest deficit, 34%.

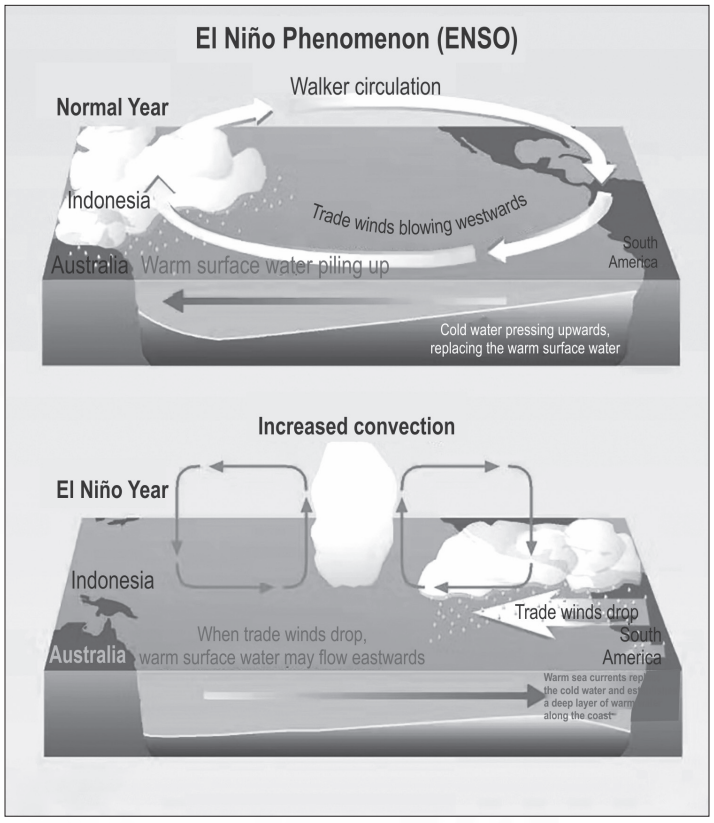
compensated for the deficit on the dry days and brought in an illusion of normalcy.

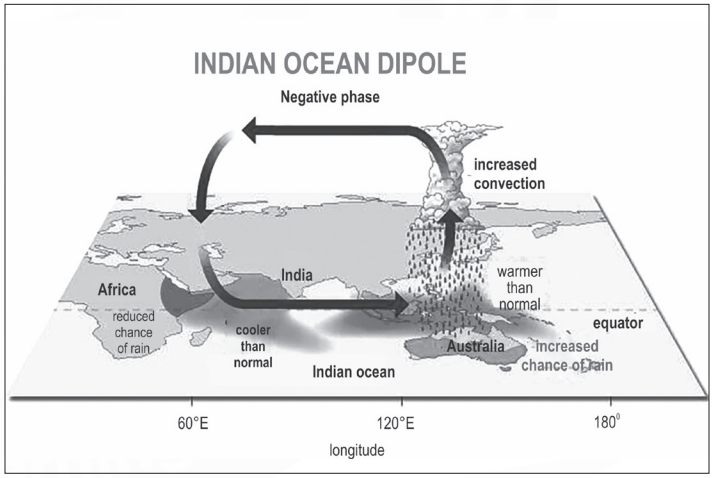
Regional level variation

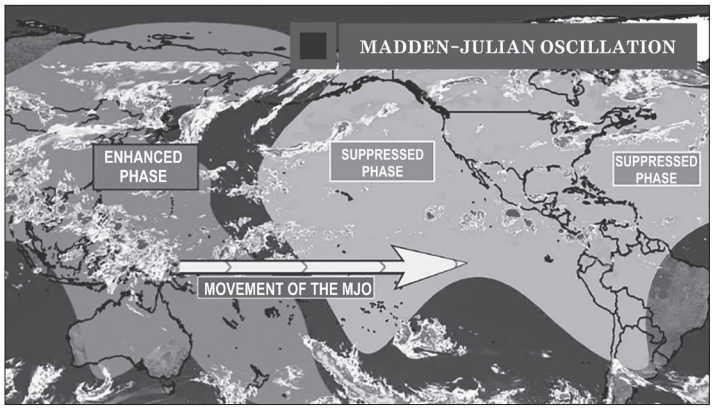
- **Northwest and Central parts** of the country received **more than 100% rains** during the season, while eastern and **North-Eastern regions got barely 80%.**
- **The Southern part** of the country also had large deficits for most of the monsoon season and ended with 92% rains.

Monsoon Rainfall Variation

- **Major factors which play role in rainfall variation include:**
  - ✓ **El Nino:** This year's monsoon, for example, was expected to be hit by the prevailing El Nino in the **eastern Pacific Ocean.**
    - In previous years, El Nino events have resulted in **large rainfall deficits** during monsoon.
    - **But it did not have a similar impact on the rainfall this year**, at least in overall quantitative terms.
  - ✓ **Climate change has introduced a greater degree of uncertainty in weather events.**
    - The **unpredictability in monsoon rainfall** is likely to continue even if some drastic measures are taken to immediately bring down greenhouse gas emissions, known to be the cause of global warming and climate change.
  - ✓ **Indian Ocean Dipole (IOD):** The IOD is defined by the difference in the sea surface temperatures between the western parts of the **Indian Ocean** near Africa and the eastern parts of the ocean near **Indonesia**.
  - ✓ **Madden-Julian Oscillation (MJO):** It's a large-scale atmospheric disturbance originating in **tropical Africa** and travelling eastward, typically lasting 30 to 60 days.
    - It is known for increasing convection in the **Bay of Bengal and the Arabian Sea.**







Indian Meteoritical Department Categories of Rainfall Distribution in India

The IMD maintains **five rainfall distribution categories** on an all-India scale:

- **Normal or Near Normal:** When % departure of actual rainfall is +/-10% of LPA (Long Period Average), that is, between 96-104% of LPA.
- **Below normal:** When departure of actual rainfall is less than 10% of LPA, that is 90-96% of LPA.
- **Above normal:** When actual rainfall is 104-110% of LPA.
- **Deficient:** When departure of actual rainfall is less than 90% of LPA.
- **Excess:** When departure of actual rainfall is more than 110% of LPA.

What is 'Long Period Average'?

- LPA of rainfall is the **rainfall recorded over a particular region for a given interval** (like month or season) average over a long period like 30 years, 50-years etc.
- It acts as a **benchmark while forecasting the quantitative rainfall** for that region for a specific month or season.
- Currently, the **average rainfall recorded** over the country for the period ranging from **1971 to 2020,** which is **87 cm.**

Indian Meteorological Department (IMD)

- It was established in **1875** as the **National Meteorological Service** of the country and the **principal government agency** in all matters relating to meteorology and allied subjects.
- **Concerned Ministry:** Ministry of Earth Sciences
- **Headquarters:** New Delhi
- It undertakes **meteorological observations,** provides **current and forecast meteorological information** for optimum operation of weather-sensitive activities, **warns against severe weather phenomena** and provides essential meteorological **statistics.**

5.2.3. Critical Minerals

Current Context

The Centre is set to auction **20 blocks of critical minerals** within the next two weeks, as part of a broader effort to **harness indigenous technology for mining and processing.**

About

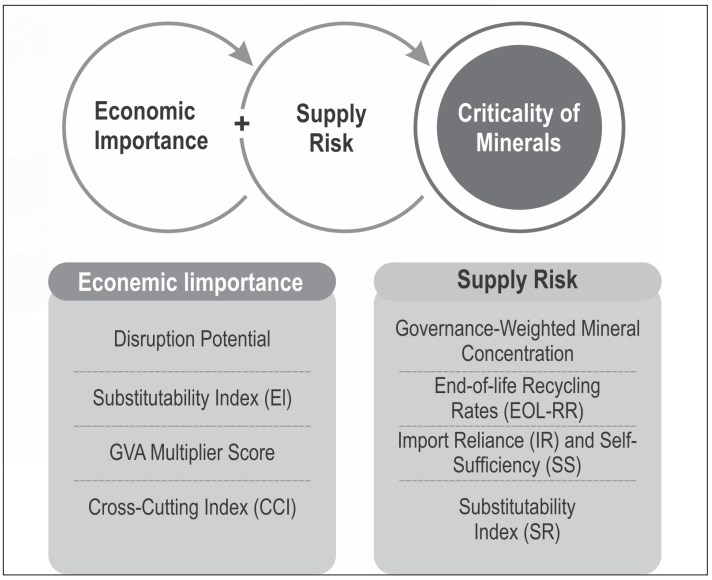
- The move aligns with the government's strategy to **secure minerals** essential for **advanced technology sectors** and follows significant reforms designed to **boost private sector engagement** in mineral exploration.

List of Critical Minerals notified by the Government

Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.

Critical Minerals

- **Critical minerals** are those minerals that are essential for economic development and national security.
- **The lack of availability** of these minerals or concentration of extraction or processing in a few geographical locations may lead to **supply chain vulnerabilities** and even disruption of supplies.
- **Government has released a list of 30 critical minerals for India.**
  - ✓ The list **includes 17 Rare Earth Elements (REEs) and six Platinum-Group Elements (PGE),** each designated based on their economic importance and limited availability in India's geological reserves.



Government changed its mining rules to boost exploration

- **Ministry of Mines** has increased focus on exploration of these minerals in the country through **Geological Survey of India (GSI)** and other agencies.
- The Parliament recently passed **Mines and Minerals (Development & Regulation) Amendment Bill, 2023** with focus on Critical Minerals, introducing **major reforms in Mining Sector.**

- **The Bill provides to remove certain minerals from the list of atomic minerals**, *viz.* lithium, beryllium, titanium, niobium, tantalum and zirconium.
  - ✓ **They are critical for** technological and energy needs in space industry, electronics, technology and communications, energy sector, electric batteries and are critical in net-zero emission commitment of India.
- Recently, the **Geological Survey of India (GSI)** discovered **5.9 million tonnes of Lithium** reserves in the Salal-Haimana area of **Jammu & Kashmir**.

Global examples

- **The number of critical minerals varies among countries depending upon their demand and usage.**
  - ✓ **The US** has designated **50 as critical minerals**.
  - ✓ **Japan** has identified a set **of 31 minerals** as critical for their economy.
  - ✓ A total of **18 minerals were identified** as critical to the **UK Economy.**

Significance

- **Critical minerals have become essential** for economic development and national security in the country.
- **Reduced Import Dependence:** Encouraging **indigenous mining would lead to reduction in imports** and setting up of related **industries and infrastructure projects.**
  - ✓ **Ten minerals on the list are 100 per cent import-dependent**, viz. lithium cobalt, nickel, vanadium, niobium, germanium, rhenium, beryllium, tantalum, and strontium.
  - ✓ The proposal is also expected to **increase generation of employmen**t in the mining sector.
- **Modern Technology Development:** From solar panels to semiconductors, wind turbines to advanced batteries for storage and transportation, the **world needs critical minerals** to build these products.
- **High-end Sector:** These are essential for the **advancement of many sectors**, including high-tech electronics, telecommunications, transport, and defence.

Geological Survey of India

- It's a scientific agency founded in **1767,** is one of the oldest organisations in the world and the second oldest survey organization in India after Survey of India.
- **Headquarters: Kolkata**
- **Attached Ministry: Ministry of Mines.**
- **Role of GSI:**
  - ✓ Spearheading **geological surveys and studies** in India.
  - ✓ Provides **earth-related scientific information** to relevant stakeholders like the government, industry and general public.

CRITICAL MINERALS: INDIA'S NET IMPORT RELIANCE (2020)

Critical Mineral	%age	Major import sources
Lithium	100%	Chile, Russia, China, Ireland, Belgium
Cobalt	100%	China, Belgium, Netherlands, US, Japan
Nickel	100%	Sweden, China, Indonesia, Japan, Philippines
Vanadium	100%	Kuwait, Germany, South Africa, Brazil, Thailand
Niobium	100%	Brazil, Australia, Canada, South Africa, Indonesia
Germanium	100%	China, South Africa, Australia, France, US
Rhenium	100%	Russia, UK, Netherlands, South Africa, China
Beryllium	100%	Russia, UK, Netherlands, South Africa, China
Tantalum	100%	Australia, Indonesia, South Africa, Malaysia, US
Strontium	100%	China, US, Russia, Estonia, Slovenia
Zirconium (zircon)	80%	Australia, Indonesia, South Africa, Malaysia, US
Graphite (natural)	60%	China, Madagascar, Mozambique, Vietnam, Tanzania
Manganese	50%	South Africa, Gabon, Australia, Brazil, China
Chromium	2.5%	South Africa, Mozambique, Oman, Switzerland, Turkey
Silicon	<1%	China, Malaysia, Norway, Bhutan, Netherlands

Source: Unlocking Australia-India Critical Minerals Partnership Potential", Australian Trade and Investment Commission, July 2021

Recent India-Australia collaboration

Indian and Australian governments decided to jointly invest $3 million each for five critical mineral exploration projects in Australia.

- **Environment sustainability:** They are also vital to power the **global transition to a low-emission economy**, and the renewable energy technologies required to meet the **'Net Zero' commitments**.

5.2.4. Rare Earth (RE) resources: Tantalum

Current Context

A team of researchers from the **Indian Institute of Technology (IIT), Ropar** has found the presence of **Tantalum**, a rare metal, near the **Sutlej River in Punjab**.

About

- **The Annual Report of the Union Ministry of Mines (2020-21)** identified it as one of the 12 critical and strategic minerals.
- **Tantalum may be making to the rivers** due to the **movement of Indian plate towards the Eurasian plate** which causes seismic activity in the Himalayan region.

Rare Earth (RE) resources

- **The Rare-Earth Elements (REE),** also called the

Rare-Earth Metals are a set of **17 nearly indistinguishable lustrous silvery-white soft heavy metals**.
- ✓ Compounds containing rare earths have **diverse applications** in electrical and electronic components, lasers, glass, magnetic materials, and industrial processes

- The **Rare Earth (RE) resources in India** are reported to **be the fifth largest in the world**.
  - ✓ Though India has **6% of the world's Rare Earth Reserves**, it only **produces 1% of global output.**
  - ✓ **In 2018-19, 92% of rare earth metal imports by value and 97% by quantity were sourced from China.**
- **The 17 Rare Earth Elements (REE)** include the **15 Lanthanides** (Atomic numbers 57 — which is Lanthanum — to 71 in the periodic table) plus Scandium (Atomic number 21) and Yttrium (39).

World Reserves and Leading Producers

- The Total World Reserves are estimated at 120 million tonnes of rare earth oxides equivalent content (REO) of which China alone accounts for 44 million tonnes (37%) followed by Brazil & Vietnam (18% each) and Russia (10%).
- China holds the leading position among producers of rare earth oxides while other major producers are Myanmar, Australia, USA, Russia and Malaysia.

What is Tantalum?

- Tantalum is a **rare metal with the Atomic number 73** which is grey, heavy, very hard, and one of the most corrosion-resistant metals in use today
- Tantalum also has an extremely high melting point, exceeded only by Tungsten and Rhenium.

Properties of Tantalum

- When exposed to air, it forms an **oxide layer that is extremely difficult to remove**, even when it interacts with strong and hot acid environments.
- When pure, tantalum is **ductile,** meaning it can be stretched, pulled, or drawn into a thin wire or thread without breaking.
- It is **almost completely immune to chemical attack at temperatures below 150°C**, and is attacked only by hydrofluoric acid.

Discovery

Tantalum was discovered by **Anders Gustaf Ekenberg**, a Swedish chemist, in **1802** in minerals obtained from Ytterby, Sweden

Uses of Tantalum

- **Electronic sector:** Most prominently used in this sector.
  - ✓ **The capacitors** made from tantalum are capable of storing more electricity in smaller sizes without much leakage than any other type of capacitor.
  - ✓ **This makes them ideal for use in portable electronic devices** such as smartphones, laptops, and digital cameras.
  - ✓ **As a substitute for Platinum:** As tantalum has a high melting point, it does not readily react with bodily fluids and is hence, used to make **surgical equipment and implants**, like artificial joints.
- **Cutting edges of high-speed machine tools:** A composite consisting of Tantalum Carbide (TaC) and Graphite is **one of the hardest materials known** and is used on the cutting edges of high-speed machine tools.
- **Other uses:** The rare metal is also used to make components for **chemical plants, nuclear power plants, aeroplanes and missiles.**

5.2.5. Launch of Bharat Organics, a brand of NCOL

Current Context

Recently, Cooperation Minister launched the **'Bharat Organics',** which is a brand of the newly created **National Cooperative Organics Ltd (NCOL),** and asserted that it will emerge as the most **"trusted"** brand in India and abroad.

About

- NCOL would provide a platform to all the farmers doing **natural farming** across the country and to make arrangements for **marketing of their products**.
- **About 50% of profits** from the sale of organic products through the cooperative will be transferred directly to member farmers.

Promotion of Organic Products through Cooperatives

- **Natural farming** is one of the goals set by PM in the year of **Amrit Mahotsav** for building a self-reliant India.
- The Union Cabinet under the leadership of PM approved the formation of **National Cooperative Organics Limited (NCOL)** on January 11, 2023.
- The **'Bharat Organics'** brand has launched **six organic products, including tur dal, chana dal, sugar, rajma,**

basmati rice, and Sonamasoori rice, which will be available through Mother Dairy's Safal outlets and online platforms.

- **By the year 2024, more than 25,000 members will join NCOL** and this organization has also started the work of creating a database of organic farmers.
- **The government has decided to set up about 100 mobile laboratories and 205 laboratories by next year** in collaboration with **Food Safety and Standards Authority of India (FSSAI)** and other government institutions.

National Cooperative Organics Ltd (NCOL)

- Headquartered in **Gujarat** and operates under the **Multi State Cooperative Societies Act, 2002.**
- The **NDDB** is the chief promoter of NCOL.
- **NCOL aims to cover the entire supply chain of organic products** through cooperative networks.
- **Various activities undertaken by NCOL include** aggregation, certification, production, testing, procurement, storage, processing, branding, packaging, labeling, and marketing.
- NCOL **is one of three new cooperatives** recently established by the government. The other **two cooperatives focus on certified seeds and exports.**

Organic Agriculture

- Organic agriculture is practiced in **190 countries on 749 lakh hectares of land**.
- **India ranks 4th globally in organic agricultural land and first in the number of producers**, according to 2020 data.
- **India has 27 lakh hectares of land** under certified organic certification, producing **29 lakh tonnes of certified organic products in 2022-23.**
- Export and Leading States in Organic Agriculture:
  - ✓ Export of organic produce reached **3,12,000 tonnes in 2022-23**, valued at Rs 5,525 crore, with major **exports** to the **US, EU, Canada, and other countries**.
  - ✓ Leading states in certified organic land include **Madhya Pradesh, Uttarakhand, Goa, Maharashtra, Gujarat, and the North Eastern region**.
- **Sikkim is India's first fully organic state**, with a cultivated area of **56,000 hectares.**

Government Initiatives to Promote Organic Farming

- The Indian government has implemented two national schemes, **Paramparagat Krishi Vikas Yojana (PKVY)** and **Mission Organic Value Chain Development** for **North East Regions (MOVCD-NER)**, to encourage organic farming since 2015.
- Additional support for organic farming is provided through national programs such as **Rashtriya Krishi Vikas Yojana (RKVY), Mission for Integrated Development of Horticulture (MIDH), and the All-India Network Programme on Organic Farming under the Indian Council of Agricultural Research (ICAR).**
- **Certification Of Organic Farming** is achieved through either the **Participatory Guarantee System (PGS) or third-party certification** by **the Agriculture Processed Food and Export Development Authority (APEDA) under the Ministry of Commerce**.
- **These schemes provide support for forming farmer clusters or producer organizations**, input procurement, value addition, post-harvest infrastructure development, packaging, branding, publicity, transportation, and organic fairs.

Cooperatives Societies

- Cooperatives are grassroots organizations aimed at leveraging collective bargaining power in the marketplace.
- They involve various arrangements, like sharing resources or capital, for a common gain that might be challenging for an individual producer.
- The Constitution of India under Article 19(1)(c) and Article 43B lays down the principles of cooperative societies.
- Across the country, there are 7.89 crore cooperative societies with a total membership of 29 crore.
- Amul stands out as India's most renowned cooperative society.
- Government has created the new Ministry of Cooperation to provide a separate administrative, legal and policy framework for strengthening the cooperative movement in country

National Dairy Development Board (NDDB)

- It aims to promote, finance, and support producer-owned and controlled organizations.
- It provides sustainable livelihoods to dairy farmers through innovative income-generating activities.

Organic Agriculture and Farming

It is a method of agricultural production that excludes the use of synthetic substances, such as pesticides, synthetic medicines or fertilisers, and genetically modified organism

5.3. DISASTER MANAGMENT

5.3.1. Earthquakes

Current Context

Recent **earthquakes** across **various regions of the Earth** have wreaked havoc by creating massive devastations in their area.

About Earthquakes

- An earthquake is a natural phenomenon that occurs when there is a **sudden release of energy** in the Earth's crust, resulting in the generation of **seismic waves**.
- This release of energy is typically caused by the **movement of tectonic plates** beneath the Earth's surface.
- This causes a release of energy, and the **energy waves travel in all directions**.
  - ✓ The point where the energy is released is called the **Focus** of an earthquake, alternatively, it is called the **Hypocentre**.
  - ✓ The energy waves travelling in different directions reach the surface. The point on the surface, nearest to the focus, is called **Epicentre.**
- **Earthquakes can vary in magnitude and intensity**, ranging from minor tremors that may go unnoticed to major, destructive events.
- As compared to these, **the earthquakes associated with volcanic eruption, rock fall, landslides, subsidence, particularly in the mining areas, impounding of dams and reservoirs, etc**. have limited area of influence and the scale of damage.

Examples of Recent earthquakes

Morocco: The most powerful earthquake hit in Morocco on 8 September 2023, killing more than 2,400 people.
The quake was of **magnitude 6.8** with an **Epicentre** located in the **Al-Haouz province,** in the Atlas Mountains of the historic city of Marrakech.

Afghanistan: A powerful **6.3** magnitude earthquake struck **Western Afghanistan** on 15 October 2023.

Nepal: At least **128 people were killed** and dozens injured in Nepal when a strong earthquake struck the western area of **Jajarkot in Khathmandu,** Nepal on November 2, 2023.

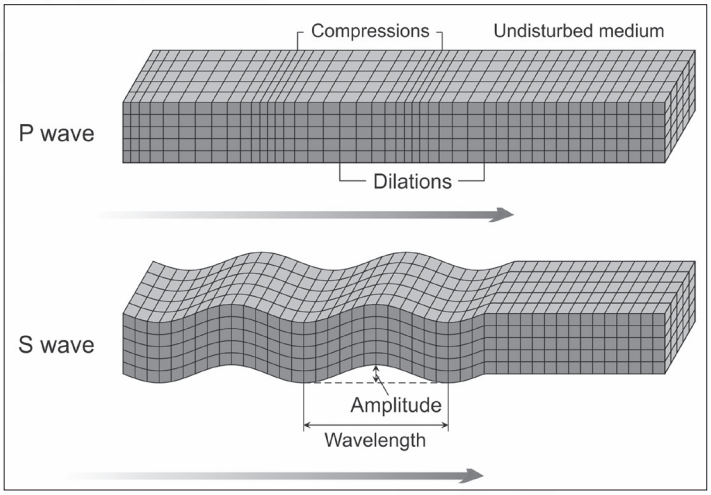
Iceland: A swarm of intense earthquakes in the **Reykjanes Peninsula,** Iceland began on 24 October 2023, due to a **magmatic intrusion underneath,** with 20,000 tremors recorded by that time, the largest of which exceeded magnitude **5.2.**

Earthquake waves

- Earthquake waves are basically of two types - **Body Waves and Surface Waves.**
- **Body waves** are generated due to the **release of energy at the focus** and **move in all directions** travelling through the body of the earth.
  - ✓ Travel **only through the interior** of the earth. **Faster** than surface waves.
- There are 2 types of body waves**: P- primary waves** and **S-secondary waves**.
  - ✓ **P waves travel through gaseous, liquid and solid** materials whereas **S waves travel only through solid materials.**
- **Surface Waves:** When the **body waves interact with surface rocks**, a new set of waves is generated called surface waves. These waves move **along the earth's surface**.
  - ✓ **Surface waves are transverse waves** in which particle movement is perpendicular to the wave propagation. Hence, they create crests and troughs in the material through which they pass.
  - ✓ They are the **most damaging waves**.
  - ✓ Common surface waves are **Love waves** and **Rayleigh waves**.
- **Speed of different Waves in descending order:** Primary Waves > Secondary Waves > Love Waves > Rayleigh Waves.

Measuring Earthquakes

- Moment Magnitude Scale **(Mw)**
- Richter scale **(Magnitude)**
- Mercalli scale **(Intensity)**



Shadow Zone

- **Earthquake waves get recorded on seismo- graphs** located at far-off locations.
- **However, there exist some specific areas where the waves are not reported**. Such a zone is called the '**shadow zone**'.
- The zone between 105° and 145° from the Epicentre

(approximately) is identified as the shadow zone for both the types of waves.

- ✓ **P waves** are refracted by the liquid outer core and are not detected between **105° and 145°**
- ✓ **S waves** cannot pass through the liquid outer core and are not detected beyond **103°**

Causes of Earthquakes

- **Tectonic activity:** These are generated due to sliding of rocks along a **Fault Plane**.
- **Volcanic explosion:** These are confined to areas of **Active Volcanoes**.
- **Intense mining activity:** Sometimes the roofs of underground mines collapse causing minor tremors. These are called **Collapse Earthquakes**.
- **Explosion of chemical or nuclear devices:** Ground shaking may also occur due to the explosion of chemical or nuclear devices. Such tremors are called **Explosion Earthquakes**.

Impacts

- Some of the common impacts of earthquakes include **structural damage to buildings, fires, damage to bridges and highways, initiation of slope failures, liquefaction, and tsunami**.
- **The types of impacts depend to a large degree on where the earthquake is located**, whether it is predominantly urban or rural, densely or sparsely populated, highly developed or underdeveloped, and of course on the ability of the infrastructure to withstand shaking.

Distribution of Earthquakes

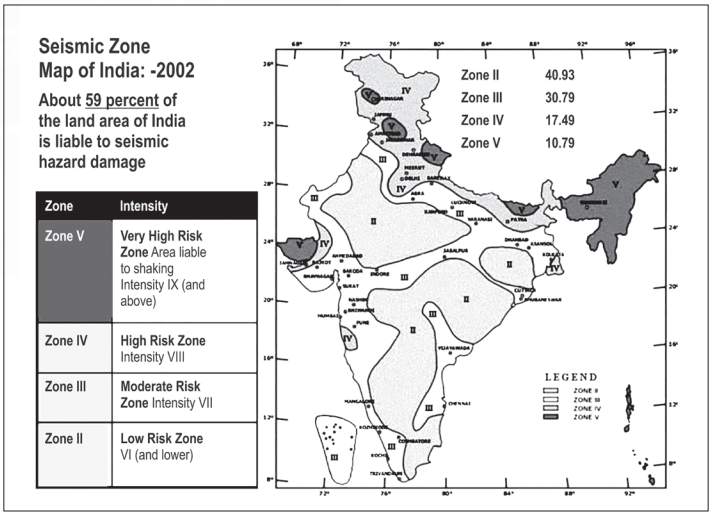
- The world's greatest earthquake belt, **the Circum-Pacific Seismic Belt,** is found along the rim of the Pacific Ocean, where about **81 percent** of our planet's largest earthquakes occur.
  - ✓ It has earned the nickname **"Ring of Fire".**
- The **Alpine-Mediterranean earthquake belt** (mid Continental belt) extends from Java to Sumatra through the **Himalayas, the Mediterranean**, and out into the Atlantic.
- The **third prominent belt follows the submerged mid-Atlantic Ridge.** The ridge marks where two tectonic plates are spreading apart (a **Divergent Plate Boundary**).

India and Earthquakes

- **India is one of the highly earthquake-affected countries** because of the presence of technically active young fold mountains, the Himalayas.
- **Earthquake Mitigation and Preparedness Measures in India include**
  - ✓ **The National Center for Seismology (MoES):** Submits earthquake surveillance and hazard reports.
  - ✓ **National Earthquake Risk Mitigation Project (NERMP):** Strengthening the structural and non-structural dimensions of earthquake mitigation efforts
  - ✓ **National Building Code:** Comprehensive building code and a national instrument providing guidelines for regulating the building construction activities across the country.
  - ✓ **National Retrofit Program (MHA):** The NDMA, along with experts from various IITs and requisite ministries, came out with guidelines on 'seismic retrofitting' which inspired this program.

International cooperation

- Sendai Framework for Disaster Risk Reduction (India is a signatory)
- United Nations International Strategy for Disaster Reduction (UNISDR).
- Shanghai Cooperation Organization Joint Exercise on Urban Earthquake Search and Rescue
- BIMSTEC Disaster Management Exercises



Zone	Intensity
Zone V	Very High Risk Zone Area liable to shaking Intensity IX (and above)
Zone IV	High Risk Zone Intensity VIII
Zone III	Moderate Risk Zone Intensity VII
Zone II	Low Risk Zone VI (and lower)

- ✓ **The government launched two Mobile apps for information dissemination**-
  - India Quake
  - Sagar Vani

- ✓ Architecture under the Disaster Management Act (2005)
  - **The NDMA Guidelines of 2007 on Earthquake Preparedness** based on the six pillars of,
    - i. Earthquake resistant construction of new structures.
    - ii. Selective seismic strengthening and retrofitting of existing structures.
    - iii. Regulation and enforcement.
    - iv. Awareness and preparedness.
    - v. Capacity development.
    - vi. Emergency response.
  - **The National Disaster Response Force (NDRF)** as the first responder

5.3.2. Urban Flooding

Current Context

A new study, published in **Nature journal and led by the World Bank** has found that **flooding risks have been exacerbated by the rapid and continuous expansion of cities.**

Key takeaways

India's Level

- **India's urban areas have been flooding more often**, leading to loss of life and livelihood, and can push governments into economic crises.
  - ✓ **A State Bank of India report** estimated the economic losses due to the **2023 North India floods and Cyclone Biparjoy in Gujarat** together, to be Rs 10,000-15,000 crore.
- **Since 1985, human settlements in flood-prone areas have more than doubled** in the last four decades, reiterating the risk of **unsustainable urbanization** while highlighting the urgent need to account for flood-related risks.

Global level

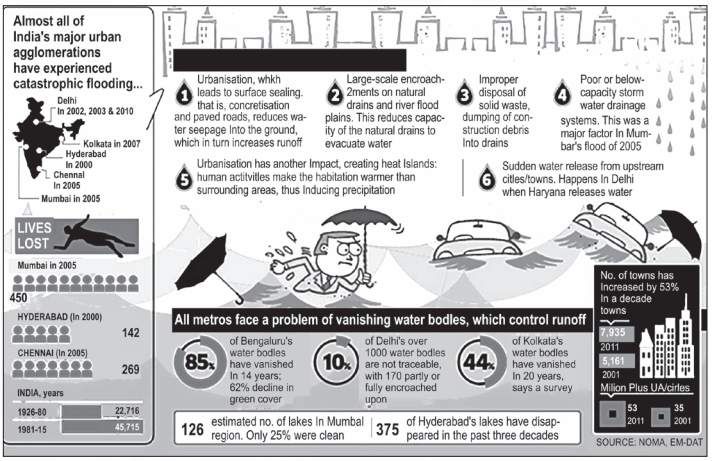
- **The researchers found that East Asia had the highest rate of settlement expansion in flood-prone areas versus those that are flood-safe.**
  - ✓ **Sub-Saharan Africa and North America** on the other hand had the least expansion into flood-prone areas.
- **Middle-Income Countries** have more urban settlement in flood-prone zones than that in low and high-income countries.
  - ✓ In the **World Bank's** estimate, **India is a low-middle-income country (LMIC).**
- **India isn't among the 20 countries** whose settlements are most exposed to flood hazards but the study found **India to be the third highest contributor to global settlements**, after China and the U.S., and **also third** – after China and Vietnam – among countries with **new settlements expanding into flood-prone areas** (1985-2015).

Reasons

- **Climate change is worsening monsoons in India** by increasing the rate of evaporation from oceans and creating more cyclonic storms in the water bodies surrounding India.
- **There has been an increasing trend of urban flood disasters** in India over the past several years whereby major cities in India have been severely affected.
  - ✓ The **new structures also impeded the flow of water** into canals, increasing the probability and intensity of floods.
    - **The most notable amongst them** are Hyderabad

World Bank

- It's an international financial institution that provides loans and grants to the governments of low- and middle-income countries for the purpose of pursuing capital-intensive projects.
- It's the collective name for the International Bank for Reconstruction and Development (IBRD) and International Development Association (IDA), two of five international organizations owned by the World Bank Group.
- It was established along with the International Monetary Fund at the 1944 Bretton Woods Conference.



in 2000, Kolkata in 2007, Jamshedpur in 2008, Guwahati and Delhi in 2010, Chennai in 2021.

- **Encroachments** are also a major problem in many cities and towns.
- **Between 1901 and 2022, the cities' population is estimated to have grown from 1.6 lakh to more than a crore** leading to urbanization of flood-prone areas and birth of new risks.

Factors

- **Rural to Urban Migration:** Settlements often expand into flood-prone areas as cities grow.
- **Economic Factor:** Low-income populations often cannot afford to live in safer, less flood-prone areas.
- **Lack of Regulatory Enforcement:** In some countries, land-use planning and zoning regulations might not be effectively enforced.
- **Cultural and Historical Ties:** Some communities have deep cultural or historical connections to flood-prone regions, and this can influence their decisions to remain or settle in these areas despite the risks.
- **Tourism and Recreation:** Coastal and riverfront areas, despite their vulnerability to flooding, continue to draw tourists and recreation enthusiasts because of their inherent appeal.

NDMA Guidelines

- Establishing
  - ✓ **A Technical Umbrella for Urban Flood Forecasting and Warning** both at the National and State/UT levels.
  - ✓ A **'Local Network Cell'** by the **IMD**.
  - ✓ **Urban Flood Early Warning** System.
- **Establishment of Local Network of Automatic Rainfall Gauges (ARGs) for Real-time Monitoring** with a density of 1 in every 4 sq km in all 2325 Class I, II and III cities and towns.
- **Strategic Expansion of Doppler Weather Radar Network** in the country to cover all Urban Areas for enhanced Local-Scale Forecasting Capabilities with maximum possible Lead-time.
- **India Meteorological Department (IMD) will develop a Protocol for Sub-Division of Urban Areas on the basis of Watershed** and issue Rainfall Forecast on the Watershed-basis.
- **Catchment** will be the basis for Design of Stormwater Drainage System.

Urban and Riverine Flooding

- Urbanization leads to developed catchments which increases **flood peaks** about 1.8 to 8 times, **flood volumes** by up to 6 times.
- **Higher population density** of Urban areas increases disaster vulnerability and exacerbate risk of exposure to infections and outbreaks.
- Urban areas behold **far higher intensity of infrastructural establishments** which are exposed to the fear of damage, impacting national economy and livelihood.

Aapada Mitra Scheme

NDMA approved this **Centrally Sponsored Scheme** in 2015, focusing on training **community volunteers** in disaster response in the **30 most flood-prone districts of 25 States** in India.

Important Terms

- **Nowcasting:** Short-range forecasting technique that maps current weather and then uses estimates of speed-direction movements to provide short-period predictions.
- **Rain Gardens:** Porous soil covered with mulch to receive and manage storm water run-off.

Doppler Weather Radar

It is a specialized radar that uses the **Doppler effect to produce velocity data** about objects at a distance.

Doppler effect

When the **source and the signal are in relative motion** to each other there is a **change in the frequency** observed by the observer. **If they are moving closer frequency increases** and vice versa.

- **Watershed** will be the basis for all Urban Flooding Disaster Management Actions

Way Forward

- Every city needs to do a **proper scientific mapping** of the flood prone areas.
- **Better storm-water management plans** have to be put in place in the flood-prone areas of cities.
- Urban governments also need to **make housing in such areas more resilient to floods** as well as upgrade and protect low-income housing.
  - ✓ **For example, riverside settlements that use stilt houses** – like those used by the **Mishing and the Miyah communities** along the banks of the Brahmaputra.

5.3.3. Uttrakashi Tunnel Collapse

Current Context

With the rescue of the **41 workers, who had been trapped** inside the **partially collapsed Silkyara tunnel** in Uttarkashi district of Uttarakhand since November 12, one of the most challenging rescue operations have been completed successfully, in the country.

Silkyara Tunnel

The Tunnel is one of the longest under the **Chardham Project of the Ministry of Road Transport and Highways,** and will link the **Gangotri and Yamunotri** axis under the Radi pass area.

Causes of Collapse

- It could have happened due to **a loose patch (of rock),** which wasn't visible during the construction.
- The patch might have consisted of **fractured or fragile rock**.
- Another reason could be the **seepage of water** through a loose patch.
- **Water erodes loose rock particles over time**, creating a void on the top of the tunnel, which can't be seen.

Tunnel Collapse as a Man-Made Disaster

- **According to the National Disaster Management Authority (NDMA),** the Structure collapses are often caused by **engineering failures**.
- **Industrial Hazards, Structure Collapse (Tunnel), Power Outage and Fire** are covered under Man-Made Disaster.
  - ✓ Thus, this could be qualifying as a potential man-made disaster.

The Char Dham highway

- The Char Dham highway is one of the **most ambitious projects** of the government.
- It aims to **connect four revered pilgrimage sites (Badrinath, Kedarnath, Gangotri, Yamunotri)** through 889 km (551 miles) of two-lane road being built at a cost of $1.5 billion.
- This project can act as the **strategic feeder roads** which connect the **India-China border** with the nearby Army camps.

Man-made Disasters

- These are events which are caused by man, either **intentionally or by accident,** that can directly or indirectly cause **severe threats,** to public health and/or well-being.
- Because their occurrence is **unpredictable,** man-made disasters pose a challenging threat that must be dealt through **vigilance, proper preparedness and response.**

Fragility of the Himalayan region

- **The Himalayas are still young** (they were formed between 40 million and 50 million years ago) and they are **still growing** due to the collision between the **Indian and the Eurasian tectonic plates.**
- **There are some patches where the rock is indeed too fragile for a tunnel**.

Incidents of Collapses in the Himalayas

- **Subansiri Lower Hydroelectric Power Project:** A major landslide disrupted construction and blocked diversion tunnels of the project.
- **Teesta River Flash Floods:** Flash floods damaged the Chungthang Dam and Teesta hydropower stations, leading to significant financial losses.
- **In 2021, at least 200 people, most of them construction workers, were killed after part of a Himalayan glacier broke away, causing flash floods in Uttarakhand** in a disaster that experts partly blamed on excessive development.
- **Other Incidents of Tunnel Collapse in Himalayas:**
  - ✓ **Kiratpur- Nerchowk** Tunnel collapse in Himachal Pradesh, 2015.
  - ✓ **Tehri Hydropoject** Tunnel Collapse, 2004.

6. SCIENCE AND TECHNOLOGY

6.1. Antimicrobial Resistance

Current Context

The **Delhi Declaration during India's G20 Presidency** aimed to strengthen the global health architecture by building more resilient, equitable, sustainable and inclusive health systems with **Anti-Microbial Resistance** as a primary focus area.

About

- Efforts are being made to implement the **One Health approach**, enhance **pandemic preparedness** and **strengthen existing infectious diseases surveillance systems.**
- **Commitment was also made to prioritise tackling Antimicrobial Resistance (AMR)** through research and development (R&D), infection prevention and control, as well as antimicrobial stewardship efforts within respective **National Action Plans (NAPs).**

What are Antimicrobials?

- Antimicrobials – including **antibiotics, antivirals, antifungals and antiparasitics**, are medicines used to prevent and treat infections in humans, animals and plants.

What is Antimicrobial Resistance (AMR)?

- Antimicrobial Resistance (AMR) occurs when **bacteria, viruses, fungi and parasites change over time and no longer respond to medicines** making infections harder to treat and increasing the risk of disease spread, severe illness and death.
- **As a result of drug resistance**, antibiotics and other antimicrobial medicines become ineffective and infections become increasingly difficult or impossible to treat.
- **AMR is a critical global concern** due to the emergence of drug-resistant pathogens, making common infections harder to treat.
  - ✓ "**Superbugs**," or multi- and pan-resistant bacteria, are spreading rapidly, rendering existing antibiotics ineffective.
- **AMR's impact is significant,** affecting patient outcomes, healthcare costs, and even essential medical procedures like surgery and transplants.
- **AMR accelerates due to:**
  - ✓ **Overuse and misuse** of antimicrobials, **inadequate access** to clean water, sanitation and quality medicine, **poor infection** control, **lack of awareness**
- **AMR affects various infectious agents:**
  - ✓ Including bacteria, tuberculosis, and viruses, making treatment increasingly complex and expensive.
  - ✓ It also impacts fungal infections, leading to treatment failures, longer hospital stays, and greater healthcare costs.

Delhi Declaration (18th G20 Summit under India's Presidency)

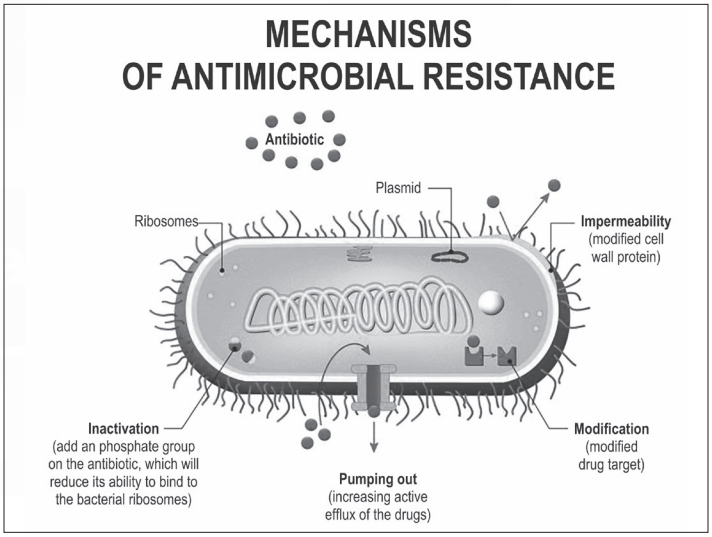
The **final outcome document** of the summit in the form of a statement from leaders of G20 countries, sending out a common message to the world.

One Health Approach

- **An integrated approach** that focuses on optimizing the health of people, animals, and the environment.
- **It is crucial for preventing and responding to global health threats,** especially in areas such as food and water safety, nutrition, control of zoonotic diseases etc.
- In May 2021, the **One Health High-Level Expert Panel (OHHLEP)** was established to advise key organizations like **FAO, UNEP, WHO, and WOAH** on One Health matters.

Facts and Data

- **Lancet,** analysed data from 204 countries, in 2019, and estimated that **4.95 million deaths** were associated with bacterial AMR, with **1.27 million directly attributed to it.**
- **Sub-Saharan Africa and South Asia** emerged as the regions with the **highest death rates associated with AMR,** highlighting their heightened vulnerability to this global health threat.



Global initiatives

- **Global Action Plan on Antimicrobial Resistance (GAP):** Develop and implement NAPsto combat AMR.
- **Tripartite Joint Secretariat on Antimicrobial**

Resistance: It was established (**FAO, OIE and WHO**) to drive multi-stakeholder engagement.

- **World Antimicrobial Awareness Week (WAAW)**: Global campaign that aims to raise awareness of AMR and encourage best practices.
- **Global Antimicrobial Resistance and Use Surveillance System (GLASS):** A system to collect, analyse, and share data on AMR.
- **Global Research and Development priority setting for AMR:** WHO developed a **Priority Pathogens List** to guide research and development into new antimicrobials, diagnostics, and vaccines.
- **Global Antibiotic Research and Development Partnership (GARDP):** It's a partnership developing treatments for drug-resistant infections.

India's initiatives

- **India's National Action Plan (NAP)** for AMR aims to improve awareness, enhance surveillance, strengthen infection prevention, promote research, and foster collaboration to control AMR.
- **Food Safety and Standards Authority of India (FSSAI)** released **"Antibiotic Residues limits"** in food from animal origin.
- **To start implementation phase of the NAP, a meeting titled "National Consultation to Operationalize Action Plan for AMR Containment"** was jointly organized by the Ministry of Health and Family Welfare, National Centre for Disease Control (NCDC), and WHO Country Office for India, State health ministries and other relevant stakeholders in 2017.
- **The Indian Council of Medical Research (ICMR) has initiated the "Antimicrobial Resistance Surveillance Network"** to provide surveillance data at the national level.
- **Kerala** became the first state to adopt a **sub-national State Action Plan**.

Priority 1: CRITICAL"

Acinetobacter baumannii, carbapenem-resistant
Pseudomonas aeruginosa, carbapenem-resistant
Enterobacteriaceae", carbapenem-resistant, 3 generation cephalosporin-resistant

Priority 2: HIGH

Enterococcus faecium, vancomycin-resistant
Staphylococcus aureus, methicillin-resistant, vancomycin intermediate and resistant
Helicobacter pylori, clarithromycin-resistant
Campylobacter, fluoroquinolone-resistant
Salmonella spp., fluoroquinolone-resistant
Neisseria gonorrhoeae, 3 generation cephalosporin-resistant. fluoroquinolone-resistant

Priority 3: MEDIUM

Streptococcus pneumoniae, penicillin-non-susceptible
Haemophilus influenzae, ampicillin-resistant
Shigella spp., fluoroquinolone-resistant

WHO Priority Pathogen List

6.2. Biomolecules Curing HIV

Current Context

Recently, a cardiac surgeon based out of Sonapur near Guwahati, claims to have **cured HIV, heart blockages, and cancer** by using **biomolecules from medicinal plants.**

About

- Patients with various diseases have been successfully treated using **Baruah Combat Genes**, claiming **to remove hidden HIV viruses and repair immunologically impaired genes.**
- They also claim to **remove blockages and improve heart function in CAD and CHD patients**, as well as **kill cancer cells without harming normal cells.**

How does it work?

- These molecules have been named Baruah small interfering RNAs **(Baruah siRNAs),** which target mutated (impaired) **microRNAS** (miRNAs) responsible for the disease.

HIV (Human Immunodeficiency Virus)

- It is a virus that attacks the body's **immune system.** If HIV is not treated, it can lead to **AIDS** (acquired immunodeficiency syndrome).
- There is currently **no effective cure.** Once people get HIV, they have it for life.

Baruah Combat Genes

They **repair immunologically impaired genes** in addition to **taking charge of the immune system** of the patient's body, becoming a **barrier to new entry of the virus** and making the patient virus-free.

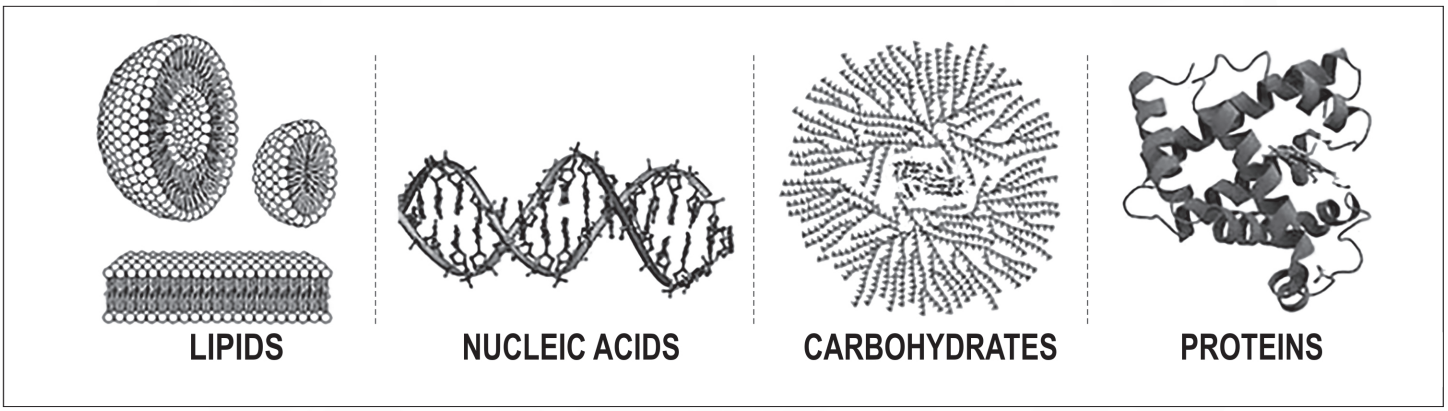
- The biomolecules, when injected into the patient's system, **produce combat genes** that specifically target diseased genes.

Biomolecules

- A biomolecule is a **chemical compound found in living organisms**. These include chemicals that are composed of mainly carbon, hydrogen, oxygen, nitrogen, sulfur and phosphorus.
- Biomolecules are the **building blocks of life and perform important functions** in living organisms.

Types of Biomolecules:

- **Carbohydrates** are primarily produced by plants and form a very large group of **naturally occurring organic compounds**. Some common examples include **cane sugar, glucose, starch, etc.**
- **Proteins** are the **most abundant** biomolecules of the living system. They occur in every part of the body and form the fundamental basis of structure and functions of life.
- **Nucleic Acids are** the particles in **nucleus of the cell, responsible for heredity, are called chromosomes** which are made up of **proteins and another type of biomolecules** called nucleic acids.
  - ✓ These are mainly of two types, the **Deoxyribonucleic Acid (DNA)** and **Ribonucleic Acid (RNA)**. Since nucleic acids are long chain polymers of nucleotides, so they are also called **Polynucleotides**.
- **Lipids** may be regarded as **organic substances relatively insoluble in water, soluble in organic solvents**, potentially related to fatty acids and utilized by the living cells.
  - ✓ They serve as a **storage form of metabolic fuel** and also serve as a transporter of the same (free fatty acid, triglyceride and cholesterol ester).



Other efforts to cure HIV

- National AIDS and STD Control Programme (NACP) as a Central Sector Scheme fully funded by the Government of India for a period of five years from 1st April 2021 to 31st March 2026.
- The National AIDS Response was initiated by the Government of India in 1992 with the launch of the first phase of the National AIDS and STD Control Programme. Since then, four phases of NACP have been successfully completed.
- Several game-changing initiatives have been taken by the government:
  - ✓ The HIV/AIDS Prevention and Control Act (2017),
  - ✓ Test and Treat Policy
  - ✓ Universal Viral Load Testing
  - ✓ Mission Sampark
  - ✓ Community-Based Screening
  - ✓ Transition to Dolutegravir-based Treatment Regimen etc.
- There is a long way to go for an "AIDS Free India" as the country still has about 2.5 million people, aged between 15 and 49, estimated to be living with HIV/AIDS, the third largest in the world.

6.3. Deepfake and AI

Current Context

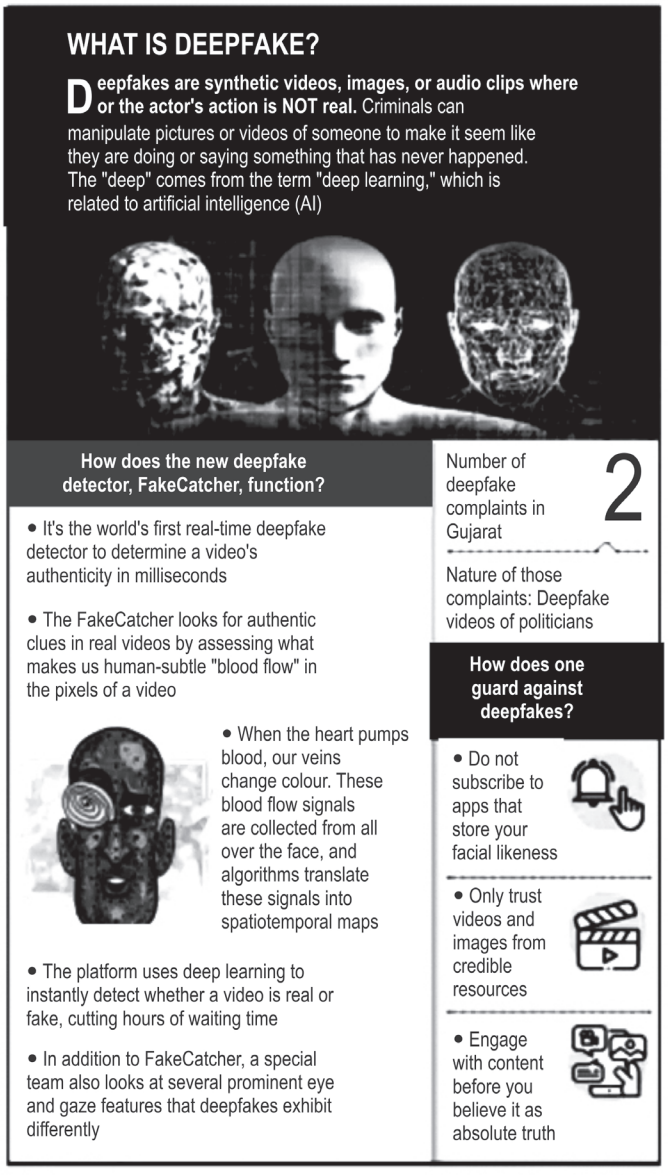
In the realm of artificial intelligence ethics, the **utilization of Deepfake sparks ethical inquiries regarding transparency, accountability,** and the fair and unbiased application of **Facial Recognition Technology.**

What is Deepfake?

- Deepfake is a combination of "**deep learning**" and "**fake**".
- It describes **synthetic media where a person's likeness is replaced with another's** in a convincing manner.
- Deepfakes utilize deep learning, a form of **artificial intelligence**, to generate fake event imagery.
- In March 2022, **Ukrainian President Volodymyr Zelensky** exposed a social media video depicting him instructing Ukrainian soldiers to surrender to Russian forces as a deepfake

Impact

- AI has further raised fears around the use of tools to synthesize **misleading content**, thereby giving rise to **misinformation.**



Facial Recognition Technology

- It's an **algorithm-based technology** which creates a **digital map of the face** by identifying and mapping an individual's facial features, consequently matching it with existing databases.
- **It works primarily** by capturing the face & its features through the camera and then using various kinds of software to reconstruct those features.
- **The captured face along with its features** is stored into a database, which can be integrated with any kind of software that may be used for security purposes, banking services, etc.

- Deepfakes can also cause **short-term and long-term social harm** and accelerate the already declining trust in traditional media.
  - ✓ **Short Term:** Such erosion can contribute to a culture of **factual relativism** (uncertainty about true information), fraying the increasingly strained civil society fabric.
  - ✓ **Long Term:** It also has the potential to damage a person's **reputation due to impersonation** (taking false identities) and may also be used for pornography.
- Deepfakes can be used by **Non-State Actors**, such as insurgent groups and terrorist organisations, to show their adversaries as making **inflammatory speeches** or engaging in **provocative actions** to stir **anti-state sentiments** among people.
- Another concern from deepfakes is the **Liar's Dividend**; an undesirable truth is dismissed as deepfake or fake news.

Ethical Issues with AI

- **Machines are taking over more and more jobs,** raising concerns about the future of work and human self realization.
- **AI systems are becoming increasingly sophisticated,** leading to questions about responsibility for their mistakes and ethical implications.
- **AI is creating new wealth,** but the distribution of this wealth is uneven.
- **AI is increasingly influencing human interactions,** but the impact of this on human relationships is uncertain.
- **AI systems are prone to errors,** due to biases in the data they are trained on and the difficulty of predicting the consequences of their actions.
- **AI systems can be used maliciously,** and there is a need for robust cybersecurity measures to protect them from hackers.
- **AI may one day surpass human intelligence,** raising concerns about our ability to control it and the impact on our self-identity.

India currently lacks a specific law for deepfake cybercrime, but several existing laws can be used to address it

- **Section 66D of the Information Technology Act, 2000**: Impersonating someone using a communication device or computer resource for malicious intent is punishable by up to three years in prison and/or a fine of Rs 1 lakh.
- **Section 66E of the IT Act**: Capturing, publishing, or transmitting someone's images in mass media without their consent violates their privacy.
- **The Copyright Act, 1957:** Section 51 prohibits the unauthorized use of another person's property, including copyrighted material.
- **Data Protection Bill 2021**: Includes provisions for penalizing breaches of personal and non-personal data.

Way Forward

- Developing **robust deepfake detection and mitigation** technologies.
- Promoting **public awareness** about deepfakes and their potential harms.
- Prioritizing **human-centric AI** that respects individual rights and promotes societal well-being.

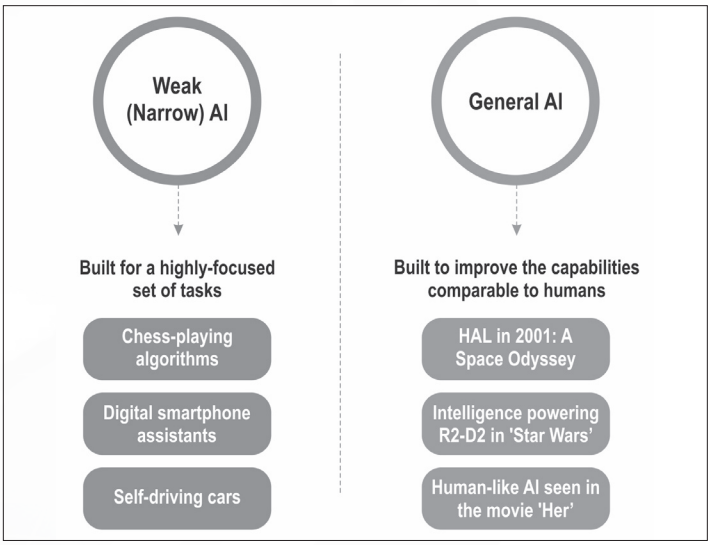
Key Terms related to Artificial Intelligence

Artificial Neural Network

- It is a vital **subset of machine learning** that facilitates complex tasks like strategizing, making predictions, analysing trends etc.
- This computational model based on the functions and structure of **biological neural networks** which **mimics human nerve cells** and is designed to simulate the way the human brain analyses and processes information.
- Unlike other machine learning algorithms, it **learns from experience and repeated tasks** performed by its users.

Generative Artificial Intelligence

- It's a rapidly growing branch of AI that focuses on **generating new content** (images, audio, text, etc.) based on predictive analysis of data.
- The rise of GAI can be attributed to the development of advanced generative models, such as **Generative Adversarial Networks (GANs)** and **Variational Autoencoders (VAEs).**



- GAI is often associated with **ChatGPT and Deepfakes** but was first used to **automate the repetitive processes used in digital image and audio corrections**.

6.4. Euclid Space Telescope

Current Context

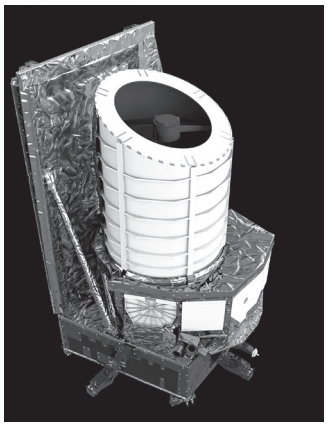
Recently, European astronomers **released the first images** from the newly launched **Euclid Space Telescope.**

About

- The first images show the **Perseus Galaxy Cluster and Horsehead Nebula** in dazzling detail and capture approximately 100,000 galaxies in a single snapshot.
- This showcases the **telescope's unmatched ability to make razor-sharp observations** across a vast expanse of space.

Euclid Space Telescope

- It is named after the Greek mathematician, **Euclid of Alexandria.**
- This mission is **part of ESA's Cosmic Vision Programme** which plans to **explore the origin and components of the Universe** and the fundamental laws that govern it.
- **The spacecraft will have a 1.2-metre-wide telescope and two instruments:**
  - ✓ A **visible-wavelength camera** (the Visible instrument)
  - ✓ **A near-infrared**



camera/spectrometer (the Near-Infrared Spectrometer and Photometer)
  - ✓ The detectors of the **near-infrared instruments** have been supplied by **NASA**.
- It will be **floating 1.5 million kilometres above the Earth**, and the telescope hopes to deliver images that are **at least four times sharper than ground-based ones**.
- It was **launched on a SpaceX Falcon 9 rocket** and will remain **operational for a minimum of six years.**

Significance

- **World's first-ever mission** aiming to investigate the enduring cosmic mysteries of **Dark Matter** and **Dark Energy**.
- The telescope can **detect galaxies out to 10bn light years**, is aiming to create the **largest cosmic 3D map ever made**.
  - ✓ **Astronomers know little** about both dark matter and dark energy and **this will allow them** to infer more information and reveal the influence of dark energy in the early universe.
- **The Euclid mission hopes to understand** the evolution of the Universe by looking at the light emitted from galaxies 10 billion years ago.

Perseus Galaxy Cluster

It's a **cluster of galaxies in the constellation Perseus** and is one of the **most massive objects in the known universe,** containing thousands of galaxies immersed in a vast cloud of multimillion-degree gas.

Horsehead Nebula

It's a **small dark nebula in the constellation Orion,** located just to the **south of Alnitak,** the **easternmost star of Orion's Belt,** and is part of the much larger **Orion molecular cloud complex.**

Dark Matter

Though **never detected,** it's believed to be **present in the entire universe.** Its existence is presumed because a number of observable celestial phenomena could not be possible if the universe did not have much more matter in it than is seen. It is believed to make up **more than 95%** of all the universe.

Dark Energy

It's a hypothetical form of energy that is thought to **permeate all of space** and drive the **accelerated expansion of the universe.** It's a term used in cosmology to explain the observed phenomenon that **galaxies are moving away from each other at an accelerating rate.**

Examples of other Telescopes

Name of Telescope	Agency	Information
Hubble Telescope	NASA	The first of the agency's Great Observatories, has revolutionized astronomy, provided stunning images of countless cosmic objects and giving astronomers their most distant views of the universe.
Spitzer Space Telescope	NASA	Gathers the infrared radiation emanating from cosmic objects, including faraway galaxies, blackholes and even comets in our own solar system.
James Web Space Telescope	NASA, ESA, CSA	Launched in December 2021 to conduct infrared astronomy using its high-resolution and high-sensitivity instruments.
Kepler Space Telescope	NASA	Monitors about 100,000 main-sequence stars over a period of three-and-a-half years
Herschel Space Observatory	ESA	Looks at the far-infrared to sub-millimeter wavelengths of light generated by some of the coldest objects in space
NASA's Chandra X-ray telescope	NASA	World's most powerful X-ray telescope named after Indian-American physicist **Subrahmanyan Chandrasekhar,** examines the X-rays emitted by some of the universe's strangest objects, including quasars, immense clouds of gas and dust and particles sucked into black holes.

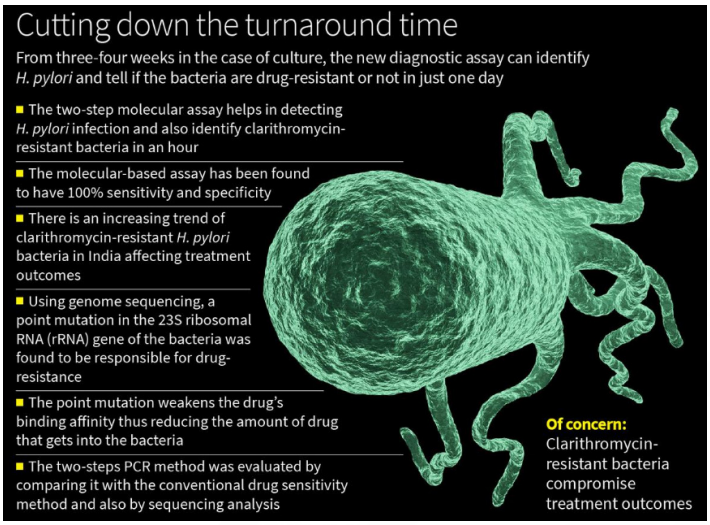
6.5. Helicobacter pylori (H. pylori)

Current Context

Recently, researchers have developed a **two-step PCR-based assay** to first detect ***H. pylori* infection** and then differentiate resistant isolates from sensitive ones directly, from biopsy samples.

About

- **The Helicobacter pylori *(H. pylori)* bacteria can help detect H. pylori infection and also identify Clarithromycin-resistant bacteria,** and those that are drug-sensitive, in six-seven hours.
- It has been developed by a team of researchers from the **National Institute of Cholera and Enteric Diseases (ICMR-NICED), Kolkata.**
- The two-steps PCR method was evaluated by **comparing it with the conventional drug sensitivity** method



Pylori

- It's a bacterium that infects the stomach lining and is linked to gastrointestinal issues like peptic ulcers and stomach cancer.
- Clarithromycin is an antibiotic commonly used to treat H. pylori infections.

and also by sequencing analysis, which showed 100% sensitivity and specificity.

Concerns related to H. pylori

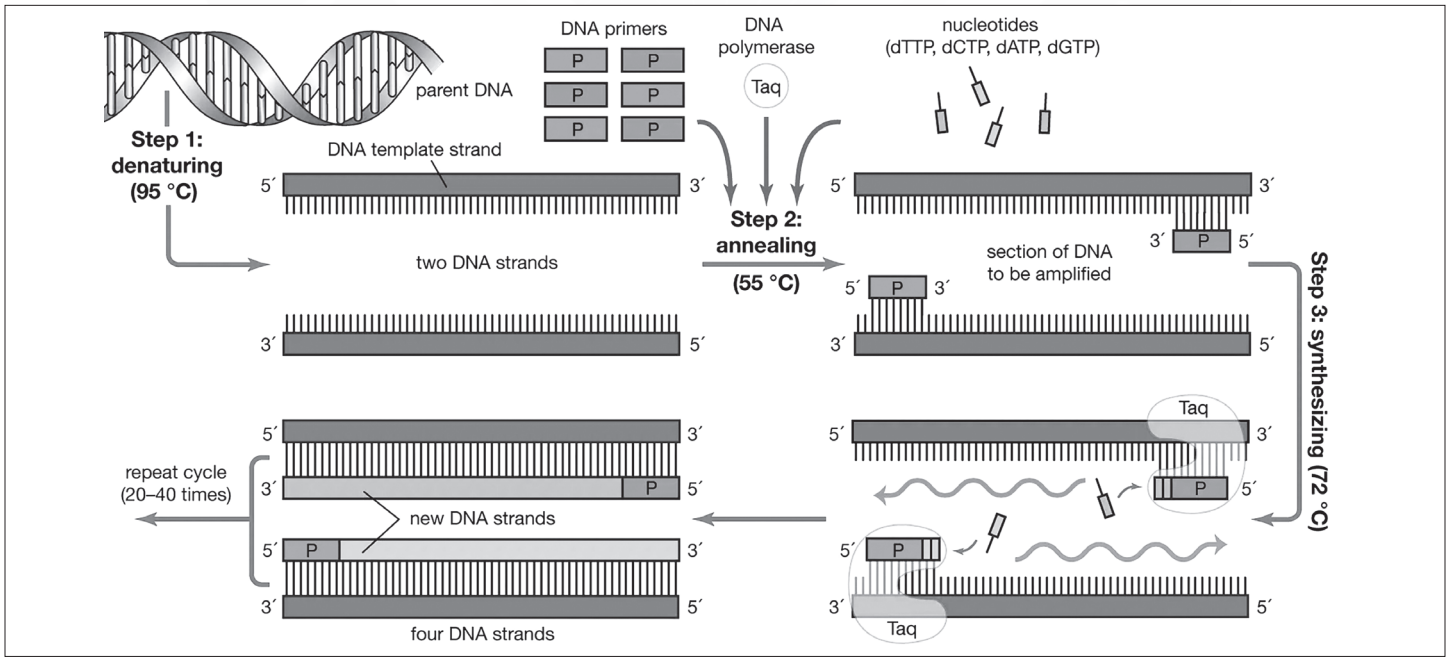
- Most of the infections caused by the bacterium *H. pylori* are **asymptomatic**, 10–15% of them develop **peptic ulcer disorders or stomach cancer**.
- In India, *H. pylori* infections affect **60-70% of the population**.
  - ✓ There is an **increasing trend of clarithromycin-resistant *H. pylori* bacteria** in India leading to a **decreasing success rate** in treating the infection.
- *H. pylori* infection is **often acquired during childhood and remains in the stomach throughout**, if not treated with antibiotics effectively.
- Importantly, *H. pylori* infection is one of the **robust known risk factors for gastric cancer**.

Polymerase Chain Reaction (PCR)

- It is a technique used in molecular biology to **replicate a targeted DNA segment in bulk.**
- It was developed in 1983 by **Kary Mullis,** an American biochemist.

PCR Based Array Method

- The DNA template used for assay was prepared by **amplifying a small segment containing the point mutation** from bacteria, isolated directly from biopsy samples.
- Then they were isolated directly from biopsy samples, and validated with the DNA template prepared from the cultured bacteria.
- **The two-steps involved-**
  - ✓ **In the initial step of PCR,** the **617** base-pair segments containing the point mutation was amplified using DNA templates isolated from biopsy samples.
  - ✓ **In the second PCR step, 183** base pairs amplified by the first PCR step are used as a template.



Polymerase Chain Reaction (PCR)

6.6. India's 5G efforts highlighted at India Mobile Congress

Current Context

India's Prime Minister recently inaugurated the **7th edition of India Mobile Congress (IMC) 2023,** saying **India has to play the lead role in 6G.**

About

- **India has established approximately 4 lakh 5G base stations** within a year of the 5G launch.
- **The '100 5G labs initiative'** has led to the development of 100 '5G Use Case Labs' in educational institutions across the country.
- **India's efforts extend beyond 5G, aiming to be a leader in 6G research**.

Current Status of 5G in India

- **India now has the second largest 5G network** in the world.
- **Record Rs 1.5 lakh crores were raised** in country's first 5G spectrum sale, with **Jio** as the largest bidder.
- **3.38 lakh 5G base transceiver stations (BTSs)** have been deployed in the country, with the **greatest number of deployments in Uttar Pradesh (35,916),** Maharashtra (34,779), and Tamil Nadu (28,307).
- **Over 2 lakh Gram Panchayats** are now connected with broadband, benefiting 75 lakh students through **Atal Tinkering Labs**.
- **India has experienced a three-fold increase in median mobile speed** and now **ranks 43rd in the Ookla's Speedtest Global Index.**
- **Average revenue realization per subscriber** per GB wireless data reduced to Rs. 10.29.
- **Average monthly data consumption** per wireless data subscriber increased to 16.40 GB.
- **FDI in the telecommunication sector** during 2022-23 (April to September) was US$694 million.

Government Initiatives

- **National Digital Communications Policy 2018** highlights the importance of 5G while promoting **convergence of a cluster of revolutionary technologies** like of **Internet of Things (IoT) Data Analytics** etc.
- Launch of **Gati Shakti Sanchar Portal** to streamline **Right of Way (ROW) applications** and permissions across the country.
- The Government of India has decided to offer the use of the Indigenous **5G Test Bed** free of cost to the Indian Government recognized start-ups and MSMEs.
- **PM Gati Shakti National Master Plan:** Platform for 5G rollout
  - ✓ Map telecom assets on PM Gati Shakti NMP platform.
  - ✓ Develop tools to make 5G rollout easier for Telecom Service Providers (TSP).

India Mobile Congress (IMC)

- It is the **largest telecom, media, and technology forum in Asia.** The theme for this year's IMC is 'Global Digital Innovation'.
- **The IMC 2023** aims to strengthen India's position as a developer, manufacturer, and exporter of key cutting-edge technologies.
- It is being organized by the **Department of Telecommunications (DoT)** and the **Cellular Operators Association of India (COAI).**

Atal Tinkering Labs (ATL)

- With a vision to 'Cultivate one Million children in India as Neoteric Innovators', **Atal Innovation Mission** has been establishing Atal Tinkering Laboratories (ATLs) in schools across India.
- **The objective of this scheme** is to foster curiosity, creativity, and imagination in young minds; and inculcate skills such as design mindset, computational thinking, adaptive learning, physical computing etc.

Ookla's Speedtest Global Index

- **India has been rising up the ranks** pretty fast in the Ookla's Speedtest Global Index for median mobile download speeds.
- **Back in September 2022,** India was at the **188th** position with a **median mobile download speed of 13.87 Mbps.**
- A year later, post the launch of 5G networks, **India stands in the 43rd rank** (up 4 spots month over month) with a median mobile download speed of **54.05 Mbps.**

Different Bands of 5G

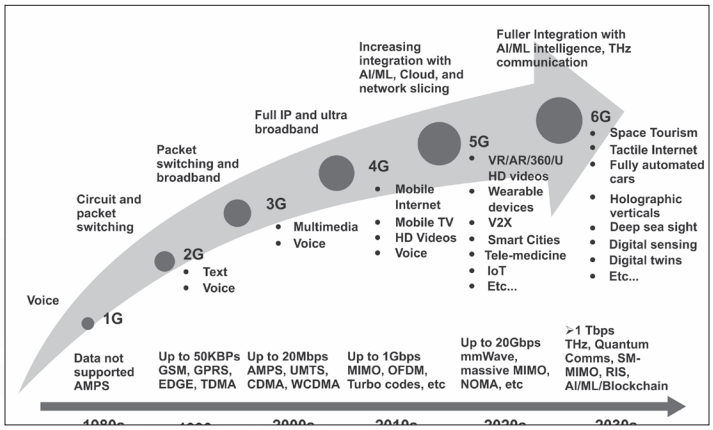
- **Low Band Spectrum:** Maximum speed is limited to **100 Mbps** hence telecom companies can use and install it for commercial cell-phone users but it's not optimal for specialised needs of the industry.
- **Mid Band Spectrum: Higher speeds** compared to the low band, but **has limitations** in terms of **coverage area** and **penetration** of signals. It may be used by industries and specialised factory units.
- **High Band Spectrum:** Offers the **highest speed** of all the three bands, but has **extremely limited coverage** and **signal penetration** strength.

Deployment of 5G networks in India offers several potential benefits

- **High-Speed Internet**: Faster data speeds for seamless content downloading and streaming.
- **Low Latency**: Reduced delays, critical for applications like gaming and telemedicine.
- **IoT Connectivity**: Supports a large number of connected devices for smart cities and industrial automation.
- **Telemedicine**: Facilitates real-time remote healthcare in remote areas.
- **Economic Growth**: Drives innovation, job creation, and business opportunities.
- **Education**: Enhances online learning with stable, high-speed connections.
- **Smart Manufacturing**: Enables efficient automation and maintenance.
- **Smart Cities:** Facilitates IoT for traffic management, energy conservation, and safety.
- **Entertainment**: High-quality, buffer-free content and virtual reality experiences.
- **Global Competitiveness**: Attracts investment and enhances India's global tech standing.

India's 6G pursuit addresses limitations of 5G and prepares for the future

- **Future-Proofing**: India is investing in 6G research to stay technologically ahead.
- **5G Limitations**: 5G has coverage and infrastructure challenges which 6G aims to overcome.
- **Data Demands**: 6G is poised to meet growing data needs and IoT demands.



- **Latency Reduction**: 6G reduces latency, ideal for sensitive applications.
- **Terahertz Spectrum**: 6G explores the high-frequency THz spectrum for fast data transfer.
- **New Use Cases**:6G enables novel applications like holographic communication and advanced AI.
- **Security and Privacy**: 6G focuses on enhanced data security and privacy.
- **International Collaboration**: India collaborates globally to shape 6G standards.
- **Competitive Advantage**: India positions itself as a leader in 6G for innovation and investment attraction.

Conclusion

The way forward for India in the realm of 5G and 6G involves **continued infrastructure expansion, innovation, and international collaboration** to ensure advanced connectivity and technological leadership.

6.7. India's Indigenous Iron Dome

Current Context

India plans to operationally deploy its **indigenous Iron Dome**, or its own **long-range air defence system,** by 2028-2029.

About

- **It can detect and destroy** incoming stealth fighters, aircraft, drones, cruise missiles and precision-guided munitions at ranges up to 350-km.
- The "interception capabilities" of the **indigenous Long-Range Surface-To-Air Missile (LR-SAM)** system, being developed by DRDO under the **ambitious Project Kusha**, will be "comparable" to the formidable **Russian S-400 Triumf** air defence system recently inducted by the IAF.
- **Cabinet Committee on Security** has already cleared development of the LR-SAM system as a "**mission- mode**" project.

Features of LR-SAM

- **The mobile LR-SAM, with long-range surveillance**

Akash Weapon System (AWS)

- It's a Short-Range Surface-to-Air Missile (SRSAM) Air Defence System, indigenously designed and developed by Defence Research and Development Organisation (DRDO).
- It can simultaneously engage Multiple Targets in Group or Autonomous Mode.
- It has built-in Electronic Counter-Counter Measures (ECCM) features.

Cabinet Committee on Security (CCS)

- CCS is chaired by the Prime Minister of India while the Ministers of Defence, External Affairs, Home Affairs and Finance attend it.
- Major decisions with respect to the significant appointments, issues of national security, defence expenditure of India are taken by the CCS.

and fire control radars, will have different types of interceptor missiles designed to hit hostile targets.

- **Meant to provide comprehensive air defence cover** to strategic and tactically vulnerable areas, the LR-SAM will be **effective even against high-speed targets** with low-radar cross-section, as per the DRDO.
- It will be geared to take out fighter-sized targets at a 250-km range, with larger aircraft like **AWACS** (Airborne Warning and Control Systems) and **Mid-Air Refuelers.**

Importance

- **It has surfaced as an anti-access/area denial (A2/AD) asset** designed to protect military, political, and economic assets from aerial attacks.
  - ✓ **The first three S-400 squadrons**, which destroy hostile targets at a range of 380-km, have been deployed in **north-west and east India** to cater for both China and Pakistan.
- **India's foray into developing this formidable system is part of its overarching mission to achieve self-reliance in the defense sector** and bolster its national security.

S-400 Triumf (Named SA-21 Growler by NATO)

- It's intended to act as a shield over a particular area, is a **long-range surface-to-air** missile system.
- It is developed by **Russia's** Almaz Central Design Bureau.
- It is considered **one of the most advanced and potent air defence systems** in the world.

Israel's Iron Dome

- An Israeli defence system that **detects an incoming rocket, determines its path, and intercepts it.**
- The system is **equipped with a radar** that detects an incoming rocket, its speed and its direction.
- **The control center then calculates** whether or not the rocket poses a threat to Israeli towns.

Project Kusha

- The ambitious project is under the purview of the **Defense Research and Development Organization (DRDO).**
- It seeks to establish a **formidable three-layered defense system** with the capability to neutralize enemy aircraft and missiles from extended distances effectively.
- With the development of its own **long-range air defense** system, **India not only bolsters its national security but also elevates itself to the league of countries** with the capability to counter aerial threats at extended distances.

6.8. Magellanic Cloud

Current Context

Astronomers are pleading with the **International Astronomical Union** to rename the **Magellanic Clouds.**

Key Details

- The Portuguese explorer **Ferdinand Magellan** is credited with finding these companion galaxies during the **first circumnavigation of the globe (1519–22).**

Magellanic Clouds

- These are **irregular galaxies that share a gaseous envelope** and lie about 22° apart in the sky near the south celestial pole.
- The **Large Magellanic Cloud (LMC)** and the **Small Magellanic Cloud (SMC),** two irregular galaxies that orbit the Milky Way once every 1,500 million years and each other once every 900 million years, make up this group.
- About 13 billion years ago, the **Milky Way Galaxy and the Magellanic Clouds formed simultaneously**.
- They contain many **young stars and star clusters**, as well as some much **older stars**.
- The Magellanic Clouds are **visible to the unaided eye in the Southern Hemisphere**.
- They are currently captured in orbits around the Milky Way Galaxy and have **experienced several tidal encounters with each other and with the Galaxy**.

LMC v/s SMC

Features	Large Magellanic Cloud (LMC)	Small Magellanic Cloud (SMC)
Diameter (in light years)	14,000	7,000
Stellar Populations	Massive young stars, aging red giants, and variable stars	Young blue stars, variable stars, and red giant
Supernova Remnants	Numerous (Eg. SN 1987A)	Present but comparatively lesser
Nebulae and Clusters	Abundant	Various types of nebulae and stellar associations are there
Interactions	Tidal interactions with the Milky Way take place	Tidal interactions with the LMC and Milky Way both take place, resulting in stellar streams and distortions

International Astronomical Union

- Founded in 1919, its mission is to promote and **safeguard astronomical science** across all aspects like research and development, communication, education, public policy etc. through strengthened international cooperation.
- **Headquarters:** Paris, France
- It is the **global authority for the nomenclature** of planetary features in the solar system.

6.9. Vikram-I Rocket

Current Context

Indian space start-up, **Skyroot Aerospace**, has unveiled its **Vikram-1 rocket**, which is expected to launch satellites into a **Low Earth Orbit (LEO)** in early 2024.

About Vikram-1 Rocket

- It's the **startup's second rocket** and comes after '**Vikram-S**,' the **country's first privately-built rocket**.
- Globally, Vikram-1 is among '**elite few' rockets with the capability to deploy orbital satellites**.
- The name is a tribute to **Vikram Sarabhai**, the **Father of India's Space Programme.**
- Launching this vehicle would **require minimal infrastructure** and that the rocket could be assembled and launched **within 24 hours from** any site.

Challenges

- **Funding is the biggest challenge the Indian space industry is facing today** and therefore the government should consider setting up soft funds and additional incentives to turbo charge the growth of the sector.
  - ✓ **Indian space startups have received a total funding of over $200 million since 2021** and with ISRO's plan to set up its **own space station by 2030**, there is potential for further investments by the private sector.
- **95% of the components** required to make space solutions, equipment and products are imported currently.
- **Although the government allows for 100% FDI into the sector, all investments are governed by the sectoral guidelines** of the Department of Space/ISRO, under the government route.

Government Efforts for Space Economy

- **India's Space missions are designed to be cost effective**, building upon human resources and skills.
- **National Research Foundation:** Greater PPP model in scientific research.
  - ✓ **NRF budget envisions a spending of Rs. 50,000 crores over five years**, out of which a major share of Rs. 36,000 crores, over 70%, is estimated to come from **non-government sources**, domestic as well as outside.
- **Mission Prarambh:** Marks the Indian private sector's first foray into the promising space launch market.

Low Earth Orbit (LEO)

- It's an orbit that is relatively close to Earth's surface, usually at an **altitude of 1000 km** or less.
- It's commonly used for **satellite imaging,** as being near the surface allows it to take images of higher resolution.
- **International Space Station (ISS),** prefers LEOs as astronauts find it easier to travel a shorter distance.
- Individual LEO satellites however are less useful for tasks such as **telecommunication,** due to their fast movement across the sky.

- **IN-SPACe (2020):** Opening up the space sector and enable the **participation of private players**.
  - ✓ With Skyroot's maiden rocket launch of the vehicle Vikram-S in November, 2022, **India became the fourth nation where private firms have built and launched rockets.**
- **New Space India Limited (NSIL):** It's the **commercial arm** of Indian Space Research Organisation (ISRO) with the primary responsibility of enabling Indian industries to take up high technology space related activities.

Noteworthy Features of Vikram 1

- **Multi-stage launch vehicle** with a capacity to place **around 300 kg of payloads** in LEO.
- **All-carbon-fibre-bodied rocket** that can place **multiple satellites into orbit.**
- Also features **3D-printed liquid engines.**
- **Solid-fuel rocket** which uses relatively simpler technologies.

Skyroot Aerospace

- **The first Space Startup** to have launched a private rocket from ISRO station at Sriharikota last year after the Space sector was thrown open to private players over three years ago.
- Headed by two IITians, they have now **set up India's largest Rocket developing facility** with updated technology.
- It has capacity to **develop cost-effective rockets,** on demand.
  - ✓ Skyroot launched its maiden rocket under **Mission 'PRARAMBH'.**

Way Forward

- **The increased role of the private sector in the space domain would lead to a healthy synergy** between the Government-run ISRO and the startups, thereby leading to knowledge sharing.
- T**he Space economy is going to make a significant contribution to the nation's economy** when Independent India celebrates its 100th Independence Day.
- **The success of Skyroot is an inspiration** to India's vast youth talent pool.
- **Space industry has a vital role in India becoming a developed nation by 2027**. It is important that all stakeholders in the industry come together, collaborate and build a structure for India's space sector.

Indian Space Economy

- As of 2021, according to SpaceTech Analytics, India is the sixth-largest player in the industry internationally having 3.6% of the world's space-tech companies.
  - ✓ U.S. accounts for 56.4% of all companies in the space-tech ecosystem.
  - ✓ Other major players include U.K. (6.5%), Canada (5.3%), China (4.7%) and Germany (4.1%).
- The Indian space economy (presently at $8bn) was expected to be worth $40bn by the year 2040.

7. INTERNAL SECURITY

7.1. Defence Imports

Current Context

According to the **Stockholm International Peace Research Institute (SIPRI),** between 2016 and 2020, Russia and Israel accounted for **62% (by value) of India's defence imports.**

Defence Imports: Current Scenario

- Current events show that relying on defence imports is not a good strategy
  - ✓ **The Ukraine war** has impacted military platform deliveries from Russia.
  - ✓ India is awaiting the delivery of various systems like the **S-400 Triumf SAM** systems and **Admiral Grigorovich-class frigates**.
  - ✓ **Russia supplied $13 billion worth of arms over the past five years**, with a further $10 billion of deliveries awaited, or in requisition.
- **Israel's ground invasion of Gaza** could also impact arms supplies to India.

What needs to be done?

- **Push Defence Indigenisation:** There needs to be significant rise in defence spending.
  - ✓ In the **Union Budget for FY24**, the Defence Ministry got Rs 5.94 lakh crore, with just Rs 1.63 lakh crore for capital outlay for modernisation and infrastructure development.
  - ✓ **Spending on capex** averaged 32% of the defence budget during 2008-12, falling to 27% in 2013-17 and 23% in 2018-22.
  - ✓ **Spending for R&D** fell from 5.1% to 4.5% and finally to 4.3% over the same period.
- **Simplify procurement procedures:** The **2020 Defence Acquisition Procedure** is complex as acquisitions undergo a 12-stage process.
- **Positive Indigenisation List:** The recent move to **ban the import of 98 weapons** and moving them to a **positive indigenisation list** is a welcome step.
  - ✓ This is in **addition to the 2,500 items in the first positive indigenisation list**, as well as three other lists with 1,238 items.
- **Utilize defence orders to build and keep key skills alive:** For the **Akash** Surface-to-Air Missile System (2008), 3,000 vendors were certified via a PPP for supplying 11,800 parts. Yet, there were no new orders till 2019.
- **Support manufacturers:** Simplify the **vendor registration process** and push for **open tendering** and long-term contracts.

India's Defence Sector

- India remained the **world's largest arms importer for the five-year period between 2018-22** even though its arms imports dropped by 11% between 2013-17 and 2018-22.
- **Russia was the largest supplier of arms to India** in both 2013-17 and 2018-22, but its **share of total Indian arms imports fell from 64% to 45%** while **France emerged as the second largest supplier** between 2018-22 and the **US (11%) being the third.**
- At the same time, **India was the third largest arms supplier to Myanmar** after Russia and China accounting for **14%** of its imports.
- **From Israel,** India purchased critical force multipliers like surveillance sensors, UAVs, missile guidance systems and precision munitions.

Government Initiatives for Indigenization of Defence Sector

- **The Defence Production and Export Promotion Policy 2020** envisions an industry worth **$25 billion by 2025**, with exports of $5 billion annually.
  - ✓ **India's defence exports for 2022-23 clocked an all-time high** of around Rs 16,000 crore.
  - ✓ This is an over **10 times increase since 2016-17** when the defence exports were Rs 1,521 crore.
  - ✓ **India has set itself an ambitious defence exports target of Rs 35,000 crore by 2024-25**.
- **Defence Acquisition Procedure (DAP 2020)** is promulgated to **maximize acquisition of defence equipment through indigenous sources** and promote domestic manufacturing.
- **The Atmanirbhar Bharat Initiatives** helped by encouraging indigenous design, development and manufacture of defence equipment.
  - ✓ The expenditure on defence procurement from foreign sources has reduced from **46% of overall expenditure in 2018-19 to 36.7% in December, 2022.**
- **Liberalization of Foreign Direct Investment (FDI) Policy:** Allowing **74%** FDI under **automatic** route.
- **Setup defence Industrial Corridor:** Two Corridors have been set up in **Uttar Pradesh and Tamil Nadu** to catalyze indigenous production.

7.2. FATF on Crowdfunding in India

Current Context

A latest report by the **Financial Action Task Force (FATF)** has stated how a violent extremist organisation under investigation in India has resorted to **aggressive crowdfunding tactics.**

About

- Without naming the organisation, the FATF report makes a reference to the **Popular Front of India (PFI)** as having resorted to **solicitation for funds at mosques and public places**, which were ultimately used to procure arms and ammunition and for training the cadres.
- "**Over 3,000 bank accounts and informal value transfer systems were used**," said the FATF in its latest report titled '**Crowdfunding for Terrorism Financing**'.

What is Crowdfunding?

- It's a **way of raising money** to finance projects and businesses.
- It enables **fundraisers to collect money from a large number of people** via online or offline platforms.

What FATF notes about India?

- **The same report said the accounts involved both domestic and foreign transactions, making this case extremely difficult to investigate**.
- **Funds were also used for** training the cadres of the organisation, parked in businesses and real estate projects to generate regular income for terrorism activities.
- The report further mentioned that eight individuals have been arrested on Terrorist Financing charges.
  - ✓ **Rs 3.5 crore in assets** are being sought for confiscation.
- Earlier, the FATF in a report titled '**Money Laundering and Terrorist Financing (AML/TF) in The Arts and The Antiques Market'** had made a reference to money laundering through paintings.

FATF on Crowdfunding

- **The FATF report notes four main ways in which crowdfunding platforms can be abused for terrorist financing purposes —**
  - i. Abuse of humanitarian, charitable or non-profit causes;
  - ii. Use of dedicated crowdfunding platforms or websites;
  - iii. Use of social media platforms and messaging apps; and
  - iv. Interaction of crowdfunding with virtual assets.
- Some estimates have valued the **global crowdfunding market at $17.2 billion in 2020** and note that it is expected to reach **$34.6 billion by 2026**, adding that in 2022, there were **over 6 million crowdfunding campaigns** around the world.
- Although the majority of crowdfunding activity is legitimate, the **Islamic State of Iraq and the Levant (ISIL), Al-Qaeda and Ethnically or Racially Motivated Terrorist (EoRMT) individuals and groups** have exploited it to raise money for terrorist financing purposes.
- **While certain jurisdictions proactively implement measures to mitigate these risks, AML/CFT regulation is not consistent across the globe**.
  - ✓ Many countries do not systematically assess the risks and therefore, **comprehensive data about its misuse is generally lacking.**
  - ✓ **Countries should assess the nature, size and risks associated** with all types and methods of crowdfunding in their particular jurisdiction, including companies, individuals or any other type of organisation.
  - ✓ **Given the cross-border nature of crowdfunding campaigns and associated financial transfers,** countries should recognise that even if their jurisdiction does not have significant terrorism activity domestically, it can still be used as a pass-through for financial flows.

Popular Front of India (PFI)

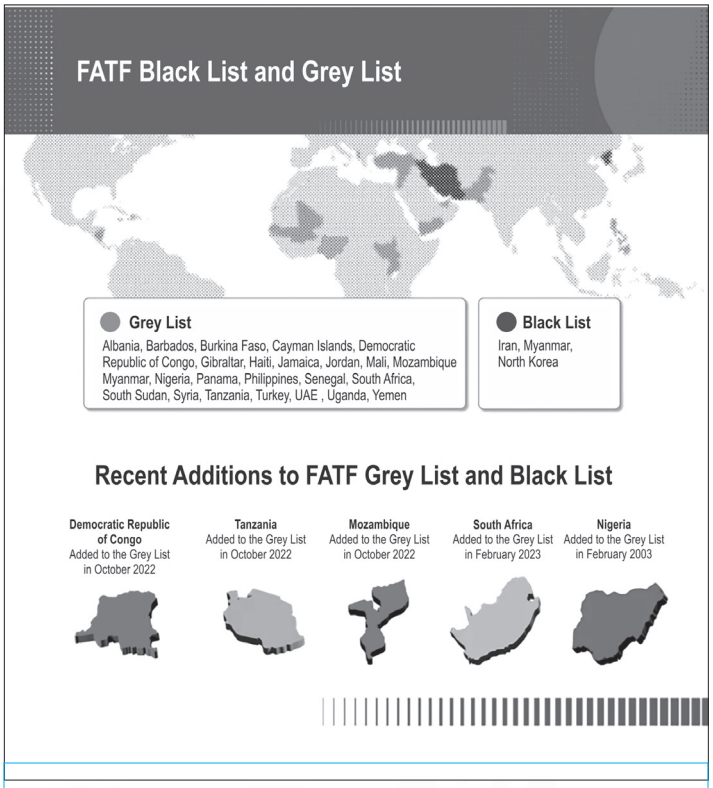
- It was created in **2007** through the merger of three Muslim organisations in Southern India,
  - i. National Democratic Front (Kerala),
  - ii. Karnataka Forum for Dignity,
  - iii. Manitha Neethi Pasarai (Tamil Nadu)
- It emerged in the aftermath of the ban on SIMI.
- Last year, the **Ministry of Home Affairs had declared it "unlawful"** along with its associates/affiliates/fronts after the **National Investigation Agency (NIA)** and the **Directorate of Enforcement Directorate (ED)** had carried out nationwide search, detain, and arrest operations.

Money Laundering and Terrorist Financing (AML/TF)

- **Money laundering** is the processing of assets from criminal activity to obscure their illegal origins.
- **Terrorism financing** raises money to support terrorist activities.

FATF

- It's the **global money laundering and terrorist financing watchdog** set up in **1989** by the **G-7,** with its Secretariat located at the **OECD headquarters in Paris.**
- The **FATF Plenary** is the decision-making body of the FATF and meets **thrice** a year.
- Objective:
  - ✓ Initially, its objective was to examine and develop measures to **combat money laundering.**
  - ✓ After the **9/11** attacks on the US, the FATF in 2001 expanded its mandate to incorporate efforts to combat terrorist financing.
  - ✓ In April 2012, it added efforts to counter the financing of proliferation of **Weapons of Mass Destruction (WMD).**
- FATF Recommendations:
  - ✓ **Famous Forty Recommendations (1990)** with a holistic plan of action needed to fight against money laundering.
  - ✓ **Ninth Special Recommendations (2004)** emboldened agreed international standards - **the 40+9 Recommendations.**
  - ✓ Over 200 jurisdictions around the world have committed to the FATF Recommendations through the global network of **nine FATF-Style Regional Bodies (FSRBs)** and **FATF memberships.**
- India and FATF:
  - ✓ India joined with **'observer'** status in 2006 and became a **full member** of FATF in 2010.



- ✓ India is also a member of its regional partners, the **Asia Pacific Group (APG)** and the **Eurasian Group (EAG).**
- ✓ **India's onsite assessment by FATF** is slated for November, while the assessment is likely to come up for discussion in the plenary discussion in June 2024.

7.3. Malware Malice and Apple Snooping

Current Context

Recently, controversy erupted after some of the leaders, who use **Apple phones,** received warnings of **"State-Sponsored Attacks"** on their devices.

About

- **The Union Communications and Information Technology (IT) Minister stated** that much of the information provided by Apple on the issue seems vague and non-specific in nature.
- **The investigation will be taken up by CERT-In (Computer Emergency Response Team-India)**, the national nodal agency for responding to computer security incidents.
- **A Supreme Court of India panel**, however, found no conclusive evidence of the spyware on the 29 phones that it had examined; but noted that the Union government was not cooperating with the panel.
- It was reported that the nature of attack closely resembled **'Snooping'.**
  - ✓ **Snooping is the unauthorized access to another person's or company's data**.

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.
- **Examples of common malware include** viruses, worms, Trojan viruses, spyware, adware, and ransomware.

- ✓ **The practice is similar to eavesdropping** but is not necessarily limited to gaining access to data during its transmission.
- ✓ **It is a broad term that can include casual observance** of an email that appears on another person's computer screen or watching what someone else is typing.
- ✓ **More sophisticated snooping** uses software to remotely monitor activity on a computer or as communications data traverses a network.

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 in India are categorized under **State subjects as per the Seventh Schedule of the Constitution**.
- These crimes encompass a **broad spectrum of illegal and unauthorized activities that leverage technology to perpetrate a wide array of offenses**, impacting individuals, organizations, and even governmental entities.

Examples of Cyber Attacks in India

- **Air India data breach (2021**): Personal information of 4.5 million customers stolen.
- **CAT data breach (2021):** Personal data and test results of 190,000 applicants gone.
- **Covid-19 information breach incident (2021):** Hackers stole the personal data of approximately 1500 Indian citizens from government websites.
- **Domino's India data theft (2021):** Data of 18 million orders, along with the credit card information of 1 million individuals were leaked.
- **AIIMS Cyberattack**: A severe ransomware attack compromised nearly 40 million health records.

Relevant data

- In the past year, the **Indian healthcare sector** has seen a surge in cyberattacks, affecting nearly **60% of healthcare organizations,** including AIMS and ICMR **[Sophos].**
- Cybercriminals have successfully encrypted data in almost **75% of ransomware attacks,** marking the **highest encryption rate in the past three years,** a substantial increase from the **previous 61%** encryption rate.
- **Over 75% of Indian organizations have fallen victim to such cyberattacks,** and each breach has incurred an average cost of **Rs. 35 crores** in damages.
- **In 2022, India was ranked 10th among the nations** that witnessed the most cyber-attacks **[Indian Future Foundation].**
- **India accounts for 13 % of cyber-attacks in the Asia-Pacific region,** making it one of the top-three most attacked countries by nation-state actors **[Microsoft].**

List of other types of cybercrimes

- Phishing
- Identity theft
- Cyberbullying
- Denial-of-service attack
- Security hacker
- Cyberstalking
- Botnet
- Computer virus
- Man-in-the-middle attack
- Crypto jacking
- Software piracy
- Internet fraud

Indian initiatives

- **National Cyber Security Policy, 2013**: Sets out the government's vision for a secure and resilient cyberspace.
- **CERT-In**: National agency responsible for responding to cyberattacks.
- **National Cyber Forensic Laboratory**: It offers initial cyber forensic support to Investigating Officers from State/UT Police.
- **Cyber Surakshit Bharat**: Aims to 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 Chief Information Security Officers (CISOs)**: The Indian government has mandated that all government organizations appoint CISOs to oversee their cybersecurity programs.
- **Personal Data Protection Bill**: This bill, which is currently under consideration by the Indian Parliament, aims to protect the personal data of Indian citizens.
- **Cyber Swachhta Kendra (Botnet Cleaning and Malware Analysis Center):** Provides free tools and services to help individuals and organizations protect their systems.

7.4. Military Exercises

Current Context

Recently, India has placed high emphasis on conducting **military exercises with its partner countries.**

About

- The 7th edition of Joint Military "**Exercise KAZIND-2023**" was conducted with the participation of a 120-person contingent from the Indian Army and Indian Air Force (IAF) in **Otar, Kazakhstan.**
- The ninth edition of Joint Military exercise "**Exercise MITRA SHAKTI-2023**" was conducted from November 16 to 29, 2023, at the Foreign Training Node in **Aundh (Pune).**
- The Indian and Malaysian armies launched **Exercise HARIMAU SHAKTI 2023**, demonstrating their continuing defense partnership, and it was conducted at the **Foreign Training Node, Umroi Cantonment (Meghalaya), India.**
- The 14th Edition of the Indo-US Joint Special Forces **Exercise "VAJRA PRAHAR 2023"** was conducted **at**

the Joint Training Node in Umroi, with US Special Forces personnel from the 1st Special Forces Group (SFG) and Special Forces personnel from the Indian Army's Eastern Command participating.

- Earlier, the **European Union (EU) and India** conducted their **First Joint Naval Exercise** in the **Gulf of Guinea**, following the third meeting of the **EU-India Maritime Security Dialogue**.

Exercises in News

Exercise KAZIND

- The Joint Exercise between India and Kazakhstan was instituted as **Exercise PRABAL DOSTYK** in the year 2016.
- After the second edition, the Exercise was upgraded to a company-level exercise and renamed as **Exercise KAZIND**.
- The Exercise has been further upgraded as a **Bi-service Exercise this year** by including the Air Force component.

Exercise MITRA SHAKTI

- Mitra Shakti, which means **power of friendship**, is conducted alternately in **India and Sri Lanka.**
- It is conducted **annually**, which initiated in 2014 as part of **military diplomacy and interaction** between armies of India & Sri Lanka.
- **In addition, Army Martial Arts Routine (AMAR),** combat reflex **shooting and yoga** will also form part of the exercise curriculum during this edition.

Exercise HARIMAU SHAKTI

- It is aimed to enhance the level of defence co-operation **between Indian Army and the Malaysian Army**, which will also foster the bilateral relations between the two nations.
- To cover the **vast canvas of multi-domain operations in sub-conventional environments** to achieve interoperability in combat condition and tactical training
- The scope of this exercise involves a **Command Planning Exercise (CPX)** at the Battalion level and **Company level Field Training Exercise (FTX)** on sub-conventional operations in jungle terrain.

Exercise VAJRA PRAHAR

- It is a joint exercise conducted between **Indian Army and US Army Special Forces.**
- It aims at **sharing best practices and experiences** in areas such as joint mission planning and operational tactics.
- It is also a platform to enhance **inter-operability and strengthen defence cooperation** between the armies of India and the United States of America.

8. SOCIAL ISSUES

8.1. Maternity Leave for Women Soldiers

Current Context

The Defence Minister has recently approved a **proposal for extending the rules for maternity, child care and child adoption leave for women soldiers**, sailors and air warriors **in the Armed Forces** at par with their officer counterparts.

About

- This decision aims to promote the **"inclusive participation"** of women in the military, regardless of their ranks and is intended **to improve the work-life balance for women in the armed forces**.
- Currently, **women officers** receive **180 days of maternity leave with full pay for each child (up to a maximum of two children)**, **360 days of childcare leave in their total service career** (for children under 18), and **180 days of child adoption leave for children under one year.**

Women representation in Armed Forces

- **Indian Army:**
  - ✓ At present, the women are being commissioned in the Indian Army in **ten streams** namely **Corps of Engineers, Corps of Signals,** Army Air Defence, Army Service Corps, etc.
  - ✓ Currently, over **7000 women** are currently serving in the **Indian Army**.
- **Indian Navy:**
  - ✓ **The induction of women as officers** in the Indian Navy commenced in the year **1991**.
  - ✓ The **strength** of women officers in the Indian Navy as of March 2023, **is 748 including Medical and Dental officers.**
  - ✓ In December 2019, **Sub-lieutenant Shubhangi Swaroop** made history by becoming the **first woman pilot for the Indian Navy**, with a role in flying the Dornier 228 surveillance aircraft.
- **Indian Air Force:**
  - ✓ In 2015, **combat roles** for women as fighter pilots were opened up.
  - ✓ The **strength of women officers**, as of March 2023, in the **IAF is 1,636.**
- Both started inducting women in their ranks after the government brought in the **Agnipath** military recruitment scheme last year.

Maternity Leave

- Maternity leave is governed by the Maternity Benefit Act of 1961, amended in 2017.
- It allows working women to take paid maternity leave for twenty-six weeks for the first two children.

Supreme Court's Judgements

- In 2020, the SC noted that the "right to equality is a right to rationality," ruling that all serving women officers on the Short Service Commission (SSC) would be considered for the grant of permanent commissions on the same terms as their male counterpart.
- This potentially will go a long way in changing the perceived gender bias against women.

Related news

The Indian military is reportedly discussing the possibilities of hiring transgenders in defence roles as it examines the Transgender Persons (Protection of Rights) Act, 2019, and its implications.

Benefits	Negatives
1. Inclusion reflects a commitment to equality and human rights	**1.** Resistance and Prejudice leading to challenges in acceptance and integration
2. Enhances the diversity and inclusivity and promoting a more representative and tolerant environment.	**2.** To accommodate transgender individuals may require logistical adjustments and additional resources.
3. Expands the talent pool available for military service	**3.** Training and sensitization issues
4. Fosters a sense of equality, which can positively impact morale and cohesion within the armed forces.	**4.** Medical policies may need to be revised to address the unique healthcare needs of transgender individuals.
5. Demonstrates a commitment to progressive values, contributing to a positive national and international image.	**5.** The legal and administrative framework may need to be updated to protect the rights of transgender individuals

8.2. Gender Gap in Earning

Current Context

Periodic Labour Force Survey (PLFS) have been monitoring the **gender earnings gap** across various forms of employment from April-June 2019 to 2023 focusing **on weekly hours worked,** revealing that the **inequality in total earnings might not capture the full picture.**

Key Findings

- **Men earn more than women across all types of work:**
  - ✓ The gap is most significant for **self-employed individuals**, with **men earning 2.8 times more than women in 2023.**
  - ✓ Male **regular wage workers** earn 24% more than women, and male **casual workers** earn 48% more.
- **Women work fewer hours per week than men across all types of work:**
  - ✓ The largest gap in work hours is for self-employed workers (50%), while regular wage workers have the smallest gap (19%).
- **When considering hourly earnings, the gap is significantly reduced for regular wage workers:**
  - ✓ In 2023, men in this category earn 24% more than women over the week but also work 19% longer, resulting in an hourly earnings gap of around 4%, down from 11% in 2019.
- **Inequality in hourly earnings is higher in other forms of work, though not as high as when considering total earnings:**
  - ✓ In 2023, male casual workers earned 23% more per hour than women, a reduction from 33% in 2019.
  - ✓ The gap increased slightly for the self-employed, from 84% in 2019 to 87% in 2023.

Gender Gap Status in India

- **Global Gender Gap Report 2021**: women, on average, were **paid 21% (or almost one-fifth) of the income of men.**
- **World Inequality Report 2022**: Men in India earn **82% of the labour income while the share of women's earnings stands at a mere 18%.**
- **Literacy and Education:** The number of females per 100 males in **University education** in major disciplines was highest in Medicine (157.1), followed by Arts and Social Sciences (111.6), Science (89.1), commerce (85.9) and Engineering & technical (38.7).
  - ✓ As per **National Survey of India**, literacy rate in India has increased from 73% in 2011 to 77.7% in 2022, however it still stands behind the global literacy rate which stands at 86.5% (as per **UNESCO**).
- **Participation in Economy:** As per data of **Periodic Labour Force Survey**, among the officials working at managerial positions in India, 18.8% were women in 2020 and 18.1% in 2021.
- **Participation in Decision Making:** In March 2018, at all India level 44.37% of the elected representatives in Panchayati Raj Institutions were women.
- **Percentage of Female Police Officers in India**: It is a meagre 7.02.

Gender Gap

It refers to the disparities, inequalities, or differences that exist between men and women in various aspects of life, including social, economic, political, and cultural dimensions.

Types of employees

- Self-employed: A self-employed person does not work for a specific employer who pays them a consistent salary or wage.
- Regular Salaried Worker: These are workers hired by employers on a permanent basis and are paid regular salaries/wages for their work.
- Casual workers: refers to those workers, who do not earn regular wages and do not have regular employment throughout the year. They work for a few months or days and earn wages for the work done.

- **The percentage of women representation in Central Council of Ministers**: It has decreased from 17.8 % in 2015 to 10.5 % in 2019. The current percentage is 14.5

Government of India's initiatives to reduce Gender Gap

- **Constitutional status:**
  - ✓ **Right to Equality (Article 14-18)**: The Constitution says that the government shall not deny to any person in India equality before the law or the equal protection of the laws.
  - ✓ **Article 39D**: Equal pay for equal work for both men and women
- **Legislative action:**
  - ✓ **Equal Remuneration Act,1976**: The Act provides for payment of equal wages for work of same and similar nature to male and female workers and for not making discrimination against female employees in the matters of transfers, training and promotion etc.
- **Government policies:**
  - ✓ **Beti Bachao, Beti Padhao (BBBP), 2015**: Indian government introduced the scheme to address concerns about gender discrimination and women empowerment in the country.
- **Sukanya Samriddhi Scheme**: It is a government initiative under the Beti Bachao, Beti Padhao programme, which aims to promote girl child's education.
- **Udyogini scheme**: It is implemented by the Women Development Corporation under the Indian government. It is aimed at aspiring women entrepreneurs based in rural and underdeveloped areas.
- **The Mahila Shakti Kendra (MSK) Scheme, 2017:** It is

a centrally sponsored scheme to empower rural women through community participation. The scheme aims to facilitate inter-sectoral convergence of schemes and programs meant for women.
- The **National Policy on Empowerment of Women** adopted in 2001.
- **Women reservation Act**: It provides **one-third reservation to women in the Lok Sabha and State Assemblies.**

Way Forward

- **Equal Pay for Equal Work**
- **Promote education and skill development for women**
- **Flexible Work Arrangements** to help women balance work and family responsibilities.
- **Support women entrepreneurs through funding** opportunities, training, and mentorship programs.
- **Promote financial literacy** among women to empower them in negotiating salaries and managing their finances effectively.

8.3 Adultery

Current Context

The Parliamentary Standing Committee on Home Affairs has suggested that **adultery should be re-instituted** as a crime in the **Bharatiya Nyaya Sanhita (BNS) Bill, 2023,** the proposed law to replace the **Indian Penal Code (IPC), 1860.**

Adultery in India

- A **married person** engaging in **voluntary sexual relations** with someone **other than their spouse** is known as adultery.
- In India, adultery **was punishable** by law under **Section 497 of the Indian Penal Code** until the **Supreme Court's ruling in 2018.**
- Under this law, it **was illegal** for a man to have sex with **another man's wife** without that other man's permission.
- **Women** who committed adultery were **not penalized by the law.**

Current Status

- Adultery is **not currently illegal** in India, but it is a reason for divorce under the **Hindu Marriage Act of 1955** and the **Special Marriage Act of 1954.**
- Adultery may be deemed "**misconduct"** in accordance with the applicable Service Conduct Rules for federal employees, **including members of the armed forces.**

Challenges

- There is **uncertainty** about whether the **armed forces can still take disciplinary action** for adulterous acts under their special legislation.
- Various cases where **allegations of adultery** have been used **directly or indirectly** to impede an ability of employees to discharge their duties or maintain workplace discipline.

Way Forward

- **Education & Awareness**: Raising **public awareness and educating people** about the value of fidelity and the harmful effects of adultery through the **media, community organizations**, and **educational institutions** could help to lower the incidence of adultery.
- **Legal reforms:** It has been widely acknowledged that India's adultery laws are antiquated and outdated. By providing **equal punishment for men and women** and safeguards against legal abuse, the laws can be made more equitable.
- **Gender equality**: Although adultery is commonly perceived as a crime perpetrated by men against women, it can also be committed by women, a problem that can be lessened through women's empowerment.

Constitutional validity of Section 497 of IPC

- Yusuf Aziz v. State of Bombay (1954): The Supreme Court declared that the adultery law upheld the sanctity of marriage and that it did not discriminate against men.
- Sowmithri Vishnu v. Union of India (1985): Articles 14 and 15 of the Indian Constitution were violated, as the case only criminalized having sex with a married woman without her husband's consent and did not penalize women for adultery.
- V. Revathi vs. Union of India (1988): SC held that adultery is a private matter between adults in which the state has no business interfering.
- Joseph Shine vs. Union of India (2018): Section 497 was declared unconstitutional and struck down, holding that the provision was archaic and violated the fundamental right to equality and personal liberty enshrined in the Constitution.

8.4. State Educational Achievement Survey (SEAS)

Current Context

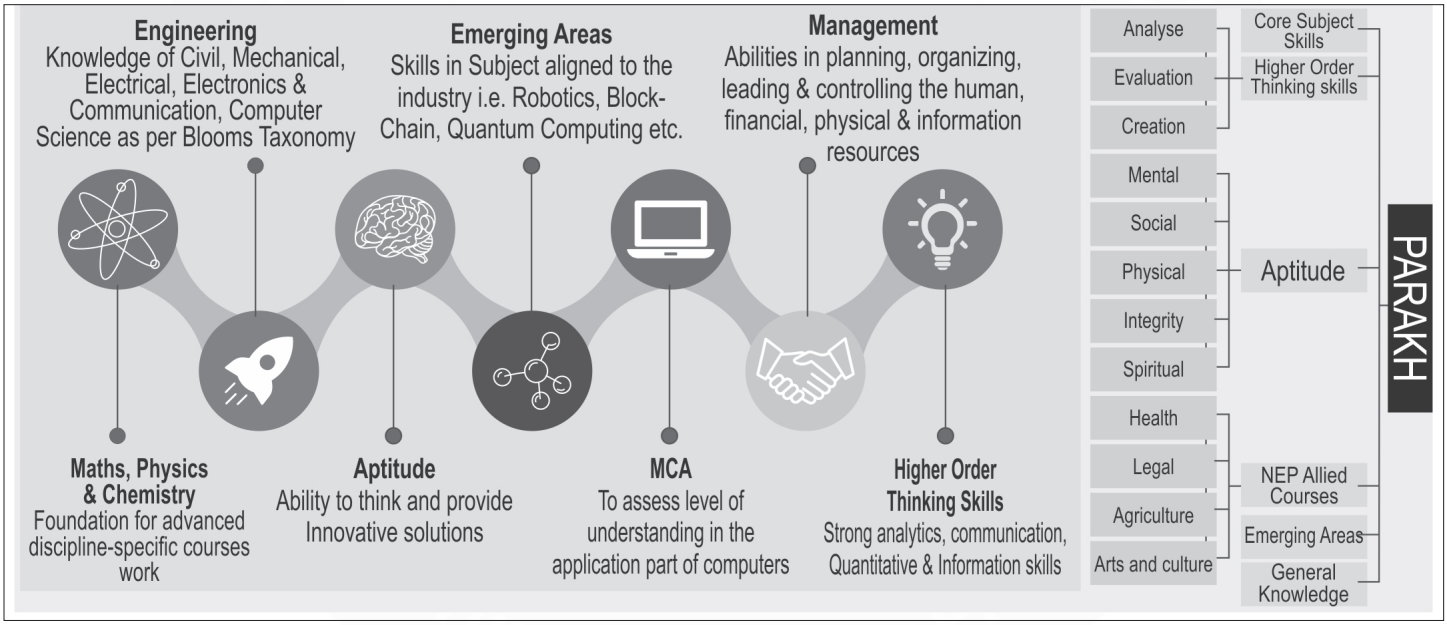
PARAKH, recently, successfully conducted the first **State Educational Achievement Survey (SEAS)** across all participating states and union territories.

About State Educational Achievement Survey 2023

- Survey was conducted to understand the **baseline performance** in the **development of the competencies** at the end of the **foundational, preparatory, and middle stages**.
- The survey covered **approximately 80 lakh students from 3 lakh schools** at 5917 blocks across the nation.
- It also includes **6 lakh teachers and more than 3 lakh field investigators**.

PARAKH

- PARAKH has been launched as a part of implementation of **National education Policy 2020**
- It has been set up as an **organisation under NCERT** to bring the school boards across the States and the Union Territories on a common platform.
- PARAKH will act as a **common platform for interaction** of all concerned stakeholders in order to develop a **holistic approach that ensures a fair assessment system** which promotes equity in performance and equivalence in assessment of students.
- The successful administration of the SEAS represents a **significant stride** towards **enhancing the quality of education in India.**



SATHEE (Self-Assessment Test and Help for Entrance Exams) Portal

- An initiative by the Ministry of Education to provide a free learning and assessment platform for students to help students gain access to training and coaching for competitive examinations for free.
- The preparation material will be available in English, Hindi and other regional languages of India to prepare for competitive exams like JEE and NEET. Currently, digital learning material is available on the SATHEE portal in four languages- English, Hindi, Odia, and Telugu.
- SATHEE is an open learning platform available to students at no cost.

8.5. ATL Sarthi

Current Context

Karnataka, Andhra Pradesh, and Jammu and Kashmir are experimenting with a concept called **ATL Sarthi. Sarthi means "charioteer."**

About ATL Sarthi

- Launched by **NITI Aayog,** earlier this year, as a **comprehensive self-monitoring framework to strengthen the ever-growing ecosystem of Atal Tinkering Labs (ATL).**

- The idea is to create **clusters of existing ATLs**, where typically **two-thirds are performing well but one-third may be struggling.**
- Each will be overseen by a guidance committee made up of **students, teachers, principals, and mentors**.
- It can be a **powerful tool for promoting innovation and creativity in schools**.
- **It has four pillars for performance enhancement:**
  - ✓ **MyATL Dashboard**: A self-reporting dashboard for process improvements.
  - ✓ **Compliance SOPs**: Ensure financial and non-financial compliances in schools.
  - ✓ **Cluster-based Approach**: Collaboration with local authorities to enable ATLs on the ground.
  - ✓ **Performance-Enablement (PE) Matrix**: Providing ownership to schools to analyze their performance.
- Coming together as a cluster with exemplary mentors helps with both processes and learning.

Atal Innovation Mission (AIM)

- It is the Government of India's flagship initiative established in 2016 , to foster a culture of innovation and entrepreneurship across the country.
- It is implemented by NITI Aayog.
- AIM has a range of programs to support innovation in India, including: Atal Tinkering Labs (ATLs), Atal Incubation Centres (AICs), Atal New India Challenge (ANIC) etc.

  - ✓ More than 90% of schools demonstrate high teacher and student attendance.
  - ✓ More than 85% of schools begin to perform well.

Way Forward

Schools and communities need to **take ownership of ATL Sarthi** to unlock its maximum potential and replicate the success of Green and White Revolutions.

8.6. Automated Permanent Academic Account Registry (APAAR)

Current Context

The Union Ministry of Education has started the process of introducing **'One Nation, One Student ID'** for school students around the country. This new initiative is named as **Automated Permanent Academic Account Registry (APAAR).**

About APAAR ID

- It is envisioned as a **special ID system for all students** in India, starting from childhood.
- This is part of the '**One nation, One Student ID**' initiative of the Union government.
- Under the initiative, each student would get **a lifelong APAAR ID**, making it easy for the learners, schools, and governments to **track academic progress** from pre-primary education to higher education.
- **APAAR would also serve as a gateway to Digilocker.**
  - ✓ Digilocker is a **digital system** where students can **store their important documents and achievements,** such as exam results and report cards, digitally, making it easier to access and use them in the future.

Need for APAAR

- **The goal** behind introducing APAAR is **to make education hassle-free** and reduce the need for students to carry **physical documents**.
- This initiative was launched as part of the **National Education Policy 2020** by the **Education Ministry.**
- The vision is to create a positive change, **allowing state governments to track literacy rates, dropout rates, and helping them make improvements**.
- It aims to **reduce fraud and duplicate educational certificates** by providing a single, trusted reference for educational institutions.

National Education Policy 2020

- The new National Education Policy (NEP) 2020 replaced the previous National Policy on Education (NPE) 1986.
- The Ministry of Education formed a committee under Dr. K Kasturirangan, which outlined this new policy.
- NEP proposes various reforms in school and higher education, including technical education, that are suited to 21st-century needs.
- 5 foundational pillars of NEP 2020: Access, Equity, Quality, Affordability, and Accountability.
- This policy is aligned with the 2030 Agenda for Sustainable Development.
- It aims to transform India into a vibrant knowledge society and global knowledge superpower by making both school and college education more holistic, flexible, and multidisciplinary.

  - ✓ **Only first party sources that issue certificates** will be allowed to deposit credits into the system, ensuring authenticity.

Concerns surrounding APAAR

- **Sharing of Aadhar details and issues around security:** Parents and students worry that their **personal information could be leaked** to outside parties.
- **Processing of information:** At any given time, students have the option to stop sharing their information with

the mentioned parties, and their data processing will be halted.
  - ✓ However, any personal data already processed will remain unaffected if consent is withdrawn.
- **Burden on the teaching faculty:** School authorities have raised the issue of already pending Aadhaar verification of students, which is kept optional.
  - ✓ The addition of the APAAR registry can **increase the administrative burden** on the teaching faculty.

Way Forward

- Schools should hold a special **parent-teacher meeting to create awareness about APAAR ID** among parents and to inform them about its uses before taking their consent.
- **State governments** should **add special work force to reduce burden** on the school authorities.

8.7. 70 Hours Work Week

Current Context

Recently, Infosys founder **Narayana Murthy** suggested that young Indians should **work 70 hours a week** to boost the country's economy.

About

- He emphasised the need to improve **India's labour productivity**, citing **Germany and Japan** as example.
- This suggestion has drawn both **support and criticism**.

Current Labour Productivity in India

- **Latest data of ILO for 2023** shows that the workers of the country are already working more than their counterparts in other countries.
- As per the rankings, **Indians work 47.7 hours a week**, which is seventh longest in the world.
- **Time Use Survey in India 2019 data** shows that young Indians aged 15-29 currently work around **7.2 hours a day in rural areas** and **8.5 hours a day in urban areas**.
- **State-wise comparison** of the time spent on work in urban areas is higher than in rural areas. **Uttarakhand ranks first**, with young people from the State working for an **average of 9.6 hours a day.**

International Labour Organisation (ILO)

- It is a specialized agency of the United Nations that focuses on promoting social justice and internationally recognized labour standards.
- It was founded in 1919 and is headquartered in Geneva, Switzerland.
- Only tripartite United Nations agency, bringing together representatives of governments, employers, and workers to address labor-related issues collaboratively.

Arguments in support	Arguments against

• **Leverage the Demographic Dividend:** Share of India's working age population to total population will reach its highest level at 68.9% by 2030.
• **Productivity:** India's work productivity is one of the lowest in the world. A 70-hour work week increase productivity.
• **Higher Economic Growth:** It might boost economic growth as more work hours could contribute to increased production and innovation.
• **Higher wages**: Workers who work longer hours may be able to earn higher wages.
	• **Decline in Working Hours**: Contrary to Narayana Murthy's argument, advanced countries have seen a consistent decline in working hours per worker over the past 150 years.
	• **International examples:**
	  ✓ In Germany, weekly working hours reduced by approximately 59%, from 68 hours in 1870 to less than 28 hours in 2017.
	  ✓ Japan, in 1961, had a 44-hour working week, which was the highest since 1950. It steadily decreased to less than 35 hours in 2017.
	• **Impact on Health:** The International Labor Organization (ILO) emphasizes that working hours and the organization of work and rest periods significantly impact the physical and mental health and well-being of workers.
	• **Declining Productivity with Long Working Hours:** Research and studies shows that productivity declines significantly after 50 hours of work per week and drops further after 55 hours.

Way Forward

- **Invest in Technology and Automation:** Encourage businesses to **invest in technology** and automation to streamline processes and **reduce manual labor**. This can improve efficiency and output without requiring additional working hours.
- **Employee Training and Skill Development:** Provide ongoing training and skill development programs to **enhance the capabilities of the workforce**. Well-trained employees are likely to be **more productive, leading to increased output** within the existing work hours.
- **Flexible Work Arrangements:** Implement flexible work arrangements, such as remote work or flexible hours. Studies have shown that flexibility can improve

employee satisfaction and productivity, as it allows individuals to better balance work and personal life.

- **Focus on Employee Well-being:** Prioritize employee well-being by promoting a **healthy work-life balance**. This can include initiatives such **as mental health support, wellness programs, and stress management** to ensure employees are physically and mentally fit, which positively impacts productivity.

8.8. Global TB Report 2023

Current Context

Recently, **World Health Organisation (WHO)** released **Global TB Report 2023** and has **hailed India's success in managing TB.**

Key Findings of the Report

- A total of **7.5 million people** were diagnosed with tuberculosis in 2022, the highest recorded till date.
- The **TB incidence rate** (**new cases per 100,000 population per year**) **rose by 3.9%** between 2020 and 2022.
- It also highlights a significant worldwide **recovery in the scale-up of TB diagnosis** and treatment services in 2022.
- The increase in diagnosis is attributed **to good recovery in access to and provision of health** services in many countries.
- **India specific findings:**
  - ✓ India accounted for the **highest number of tuberculosis (TB) cases** in the world in 2022, representing **a staggering 27%** of the global burden.
  - ✓ The report noted two positive trends for India.
    - An **increase in reporting of TB cases**, crossing even the pre-pandemic high with 24.2 lakh cases in 2022.
    - The **coverage of treatment for the infection increased to 80%.**
  - ✓ However, as per report, **India has made tremendous progress in improving case detection and reversed the impact of COVID-19 on the tuberculosis (TB) programme.**

Challenges in controlling TB in India

- **Public Health Infrastructure:**
  - ✓ **Weak public health infrastructure**, including laboratories, healthcare facilities, and healthcare workforce, is a major challenge for effective TB control.
- **Drug-Resistant TB:**
  - ✓ Drug-resistant TB, including **multidrug-resistant (MDR-TB)** and **extensively drug-resistant (XDR-TB) strains**, is a growing concern in India.
- **Stigma and Awareness:**
  - ✓ Stigma surrounding TB persists in many parts of India, leading to delayed diagnosis and treatment.
- **High Population Density and Urbanization:**
  - ✓ High population density, especially in urban areas, facilitates the transmission of TB.

Tuberculosis (TB)

- Caused by a bacterium called Mycobacterium tuberculosis, belonging to the Mycobacteriaceae family consisting of about 200 members.
- is a communicable disease spread through the air from one person to another.
- Common symptoms of active lung TB are cough with sputum and blood at times, chest pains, weakness, weight loss, fever and night sweats.
- Currently, BCG is the only licensed vaccine available for the prevention of TB and is part of the National TB Control Programme in 1962.

Multidrug-Resistant Tuberculosis (MDR-TB):

- It is a form of TB caused by bacteria that are resistant to at least two of the most powerful first-line anti-TB drugs, isoniazid, and rifampicin.

Extensively Drug-Resistant Tuberculosis (XDR-TB):

- XDR-TB is an even more severe form of drug-resistant TB.
- In addition to being resistant to isoniazid and rifampicin (like MDR-TB), XDR-TB bacteria are also resistant to at least one fluoroquinolone and one of three injectable second-line drugs (amikacin, kanamycin, or capreomycin).

Related Fact

As per Nikshay Portal, there were 21.3 lakh cases detected in 2021 as compared to 18.05 lakh cases in 2020.

The Nikshay Mitra initiative

- Launched under the Pradhan Mantri TB Mukt Bharat Abhiyan (PMTBMBA), implemented by the Ministry of Health & Family Welfare that seeks to eliminate TB by 2025 - five years ahead of the global goal of 2030.
- Over 30 Tuberculosis (TB) patients were adopted under the Nikshay Mitra initiative which provides patients with monthly nutrition kits.

- **Comorbidity with HIV/AIDS:**
  - ✓ The coexistence of TB and HIV/AIDS is a significant challenge. People living with HIV are more susceptible to TB, and the dual burden complicates the management of both diseases.

Government Initiatives to eliminate TB

- The elimination of tuberculosis is one of **the sustainable development targets** to be achieved by 2030 by the world; **India has set the target of 2025.**
- **The National Strategic Plan 2017-2025** sets the target of India reporting no more than 44 new TB cases or 65 total cases per lakh population by 2025.
- **The Nikshay Portal is** the web enabled patient management system for TB control under the **National Tuberculosis Elimination Programme (NTEP).**
- **Pradhan Mantri TB Mukt Bharat Abhiyaan (PMTBMBA)** to provide persons affected with TB and their families additional **nutritional, diagnostic, and vocational support, delivered by the community.**
- **TB Harega Desh Jeetega Campaign,** along with the **National TB Prevalence Survey**.
- **The Revised National Tuberculosis Control Programme (RNTCP)** renamed as **the National TB Elimination Program (NTEP)** with aim of the Government of India to eliminate TB in India by 2025.

Global initiatives to eliminate TB

- Moscow Declaration, 2017: To increase multisectoral action and enhance accountability in the global TB response towards ending TB by 2030
- WHO End TB Strategy: A blueprint for countries to reduce TB incidence by 80%, TB deaths by 90%, by 2030.

8.9. PM PVTG Development Mission

Current Context

On the occasion of **Janjatiya Gaurav Diwas, 2023**, the PM Modi launched the **Pradhan Mantri Particularly Vulnerable Tribal Groups Development Mission (PM JANMAN)**.

PM PVTG Development Mission

- The mission was under the **Union Budget 2023-24**.
- The Central Government has **allocated Rs 15,000 crore** under the **'Development Action Plan for Scheduled Tribes'** to implement this mission in the **next three years.**
- **Aim is to facilitate PVTG families and habitations with basic amenities** like Road and telecom connectivity, Electricity, Safe housing, Clean drinking water and sanitation, Improved access to education, Health and nutrition, Sustainable livelihood opportunities etc.

Viksit Bharat Sankalp Yatra

- The PM flagged off IEC (Information, Education and Communication) vans in Khunti, Jharkhand, marking the launch of the Yatra.
- Aim is to reach saturation of flagship government schemes by ensuring that benefits reach all targeted beneficiaries.

PVTGs

- The **Ministry of Home Affairs** has classified **75 PVTGs in 18 States & UTs** living in 22,544 villages (220 districts) having a **population of around 28 lakhs**.
- In 1973, the **Dhebar Commission** created **Primitive Tribal Groups (PTGs)** as a separate category, among the **tribal population (8.6%)** who are **less privileged**.
  - ✓ Of the **75 listed PVTGs**, the highest number are found in **Odisha (13),** followed by **Andhra Pradesh (12).**
- **PVTGs have some basic characteristics** like **homogeneity, Small population, Physical isolation, absence of written language** etc.
- **Census suggests**, there are about **12 PVTGs with population of more than 50,000** while others have a population of 1000 or less.
  - ✓ **Sahariyas** show higher population while **Sentinelese** are scarcely populated.
- **Ministry of Tribal Affairs** administers the **"Development of Especially Vulnerable Tribal Groups (PVTGs)" Scheme**
  - ✓ The **Conservation-cum-Development (CCD) plan** is prepared for five years.
  - ✓ **Financial assistance** is extended to protect the interests of PVTGs and ensure their survival.
  - ✓ The progress made by the scheme is assessed by the **concerned Ministry and NITI Aayog.**

8.10. People with Disabilities (PwD)

Current Context

The **Delhi government** is set to provide free equipment to individuals with disabilities under the **Sugamya Sahayak Yojana.**

About Sugamya Sahayak Yojana

- The **Sugamya Sahayak Yojana** was announced in April and is scheduled **to be initiated in November** 2023.
- Individuals **with 40% or more disability** must be **residents of Delhi**, and **not have previously received similar benefits from any other state or Central government scheme** are eligible for the scheme.

Government's Initiatives for empowerment of disabled persons in India

- **National Policy for Persons with Disabilities, 2006**: Aims to provide **equal opportunities**, **protect their rights**, and ensure **full societal participation**. It aligns with the constitutional principles of equality and inclusivity.
- **Rights of Persons with Disabilities Act, 2016**: The Act focuses on prevention and early detection of disabilities, education and employment of the PwD.
  - ✓ The Act also provided **3% reservation** in Government jobs and educational institutions.
- **Accessible India Campaign (Sugamya Bharat Abhiyan)** is a nation-wide campaign for achieving universal accessibility for Persons with Disabilities (PwDs), being implemented by the Ministry of Social Justice & Empowerment.
- **Niramaya (Health Insurance Scheme)**: Affordable health insurance scheme for PwDs with **autism, cerebral palsy, mental retardation, and multiple disabilities**.
- **Gharaunda (Group Home for Adults):** Aims to provide an assured home and minimum quality care services throughout the life of the PwD.
- **Badhte Kadam (Awareness and Community Interaction):** Aims to create **community awareness, sensitization, social integration, and mainstreaming** of Persons with Disabilities.
- **Samarth (Respite Care):** Aims to create opportunities for family members to get respite time.
- **Prerna (Marketing Assistance):** Marketing assistance scheme for PwDs to create viable and widespread channels for sale of their products and services.

Challenges for Persons with Disabilities in India

- **Limited Access to Education:** And inclusive schooling, **hindering skill development**.
- **Unemployment**: High **unemployment rates** due to **discrimination, job scarcity**, and inadequate workplace accommodations.
- **Inaccessible Infrastructure**: **Lack of accessible facilities and transportation**, impeding mobility and participation.
- **Healthcare**: Limited **access to affordable healthcare** and rehabilitation services.
- **Stigma and Discrimination**: Deep-rooted **social bias leads to isolation and exclusion**.
- **Economic Vulnerability**: A higher risk of poverty and economic insecurity.
- **Lack of Awareness**: Low understanding of disabilities and their rights.
- **Assistive Devices**: Limited availability and affordability of aids and technologies.

Status of PwDs in India

- According to the **2011 census, 2.21%** of India's population comprises **persons with disabilities.**
- **8.53%** of disabled literate individuals having graduated or attained higher education.
- Illiteracy was high among **female disabled** in rural areas.

Constitutional Provisions on Disability in India

- **Preamble:** Emphasizes **justice, equality, and dignity for all citizens,** including persons with disabilities.
- **Article 41:** States that the State must provide for the **right to work, education, and assistance in cases of disablement,** among other needs.
- **Article 46:** Obliges the State to promote the **educational and economic interests of weaker** sections, which includes **persons with disabilities.**

Artificial Limbs Manufacturing Corporation of India (ALIMCO)

- ALIMCO, a **government-owned** enterprise under the **Ministry of Social Justice & Empowerment,** manufactures rehabilitation aids and artificial limbs with a focus on serving persons with disabilities.

Global initiatives

- **Incheon Strategy** to **"Make the Right Real"** for Persons with Disabilities **in Asia and the Pacific** to chart the new course of action for the Asian and Pacific.
- India is a **signatory** of the **UN Convention on the Rights of Persons with Disabilities the United Nations Convention on the Rights of Persons with Disabilities** (UNCRPD).
- **International Day of Persons with Disabilities (IDPD):** Designated by UN to raise awareness about the rights and well-being of persons with disabilities, and **celebrated every year on 3 December.**

Way Forward

- **Legislation and Policies:**
  - ✓ **Strengthen and enforce existing laws** and develop and implement **comprehensive disability policies** that address various aspects of life, including education, employment, healthcare, and accessibility.
- **Accessibility:**
  - ✓ Improve **physical accessibility in public spaces, transportation, and infrastructure.**
  - ✓ **Ensure digital accessibility to websites, applications, and technology**.
- **Inclusive Education:**
  - ✓ Implement **inclusive education** policies that ensure children with disabilities have **equal access to quality education**.
- **Employment Opportunities:**
  - ✓ Promote **inclusive hiring practices** in both the public and private sectors.

- ✓ Provide **vocational training and support services** to enhance the employability of people with disabilities.
- **Healthcare Access:**
  - ✓ Ensure that **healthcare facilities are accessible** and provide services catering to the specific needs of individuals with disabilities.
  - ✓ **Support research and development of medical interventions** and technologies to improve the health and well-being of people with disabilities.

8.11. Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)

Current Context

PM Narendra Modi has announced an extension of the **Pradhan Mantri Garib Kalyan Anna Yojana** (PMGKAY) free ration scheme for **another five years.**

Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)

- **Introduced in 2020** during the **Covid-19 pandemic** to provide **5 kg free foodgrains** to eligible ration card holders under the **National Food Security Act, 2013 (NFSA).**
- It is a part of the **Pradhan Mantri Garib Kalyan Package (PMGKP)** to help the poor fight the battle against Covid-19.
- **Department of Food and Public Distribution**, Ministry of Consumer Affairs, Food and Public Distribution are **the implementing Agency**.
- Earlier this year, the **PMGKAY was merged with the NFSA**, providing all ration for **Antyodaya Anna Yojana (AAY) and Priority Households (PHH)** families for free.

Achievements

- As per **IMF working paper,** PMGKAY helped keep extreme poverty at lowest level in pandemic-hit 2020.
- In 2022-23, **AAY families had annual savings of Rs 2,705 crore** and **PHH families** had annual savings of about Rs 11,142 crore.
- Since 2020, the government has allocated **1,118 lakh metric tonnes of foodgrains from its central procurement pool at a cost of Rs 3.9 lakh crore.**

Antyodaya Anna Yojana

- It is a Public Distribution System scheme that was launched in 2000.
- Aims at reducing hunger among the poorest segments of the BPL population.
- Under this scheme they are provided food grains at highly subsidized rate of Rs. 2 per kg for wheat and Rs. 3 per kg for rice and Re. 1 for coarse grains.
- Costs related to distribution, transportation, and also margins of dealers had to be borne by States/UTs.

National Food Security Act, 2013 (NFSA)

- Notified to provide for food and nutritional security, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity.
- It provides a legal right to persons belonging to "eligible households" to receive food grains at subsidised price/ central issue prices (at Rs 3, Rs 2 and Rs 1 per kilogram of rice, wheat and coarse grains, respectively) under the under Targeted Public Distribution System (TPDS).
- State governments are tasked with identifying Antyodaya Anna Yojana (AAY) priority households (PHH) beneficiaries within the TPDS-covered population.

8.12. One Nation, One Registration Platform

Current Context

The National Medical Commission (NMC) is all set to launch its "**One Nation, One Registration Platform**" for **doctors** to eliminate duplication, red tape and to help patients check credentials**.**

Key Details

- The NMC is likely to launch patch pilot of the **National Medical Register (NMR)** where doctors will be allotted a **unique identification number** and then can also **apply for their licence to work in any State depending on where they are.**
- The Commission had earlier this year issued a gazette notification titled "**Registration of Medical Practitioners and Licence to Practice Medicine Regulations, 2023**" announcing the move.

Benefits

- It will provide a **masked ID to undergraduate students** on the NMR.
  - ✓ This ID **can be used to update any further qualification**.
- Information on the database would also be available for the **general public**, pertaining to the medical practitioner's -**Qualifications**, **Date of registration, place of working, specialty, year of passing, Name of the institute/university where qualification was obtained etc.**

- The Commission has also signed **an MoU with the Quality Council of India (QCI)** for rating medical institutions in India.
  - ✓ Both **government and private medical colleges** will be rated based on the quality of medical education they provide, from the 2024-25 academic session.

National Medical Register (NMR)

- It is a **centralised repository of doctors** practising in India where all of them will have a **unique identification number** by the end of 2024.
- The NMR will replace the **Indian Medical Register (IMR)** and will be made available to the public and placed on the NMC website.
- It is essentially, a **database maintained by the government for healthcare professionals, especially doctors.**

National Medical Commission (NMC)

- It is a **statutory body** established in 2019 which replaced the **Medical Council of India (MCI)** and functions under the **National Medical Commission Act, 2019.**
- It serves as **India's regulatory body for medical education** and undertakes **functions like-**
  - ✓ Ensuring **availability of adequate and high-quality medical professionals.**
  - ✓ Promoting **equitable and universal healthcare** that encourages **community health perspective** and makes services accessible to all the citizens.
  - ✓ **Encouraging medical professionals** to adopt the **latest medical research** in their work.
  - ✓ Enforcing **high ethical standards** in all aspects of medical services.
  - ✓ It also has the **authority to regulate fees for medical courses and to conduct inspections** of medical colleges.

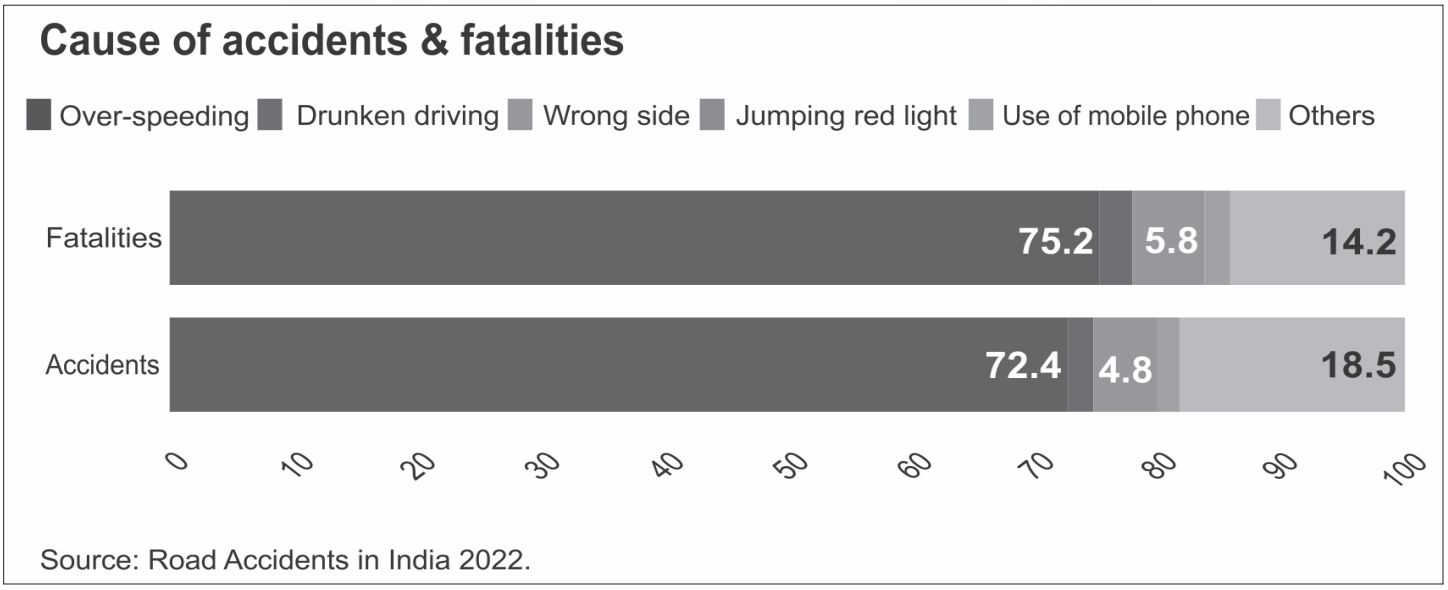
8.13. 'Road Accidents in India 2022' Report

Current Context

The Annual **"Road Accidents in India 2022"** report by **the Ministry of Road Transport and Highways (MoRTH)** shows a **9.4% increase in fatalities** due to road accidents in 2022 with **1.68 lakh more people losing their lives last year.**

Key highlights of the report

- An average of **19 deaths and 53 accidents every hour** occurred in 2022.
- The total number of **accidents went up by 11.9% to 4.61 lakh.**
- **Pothole-Related Deaths: 25% spike in pothole-related deaths.**
- **Increase in Collisions:**
  - ✓ The most significant spike was **in accidents involving vehicles colliding with stationary or parked ones**, with **6,012 deaths in 2022** compared to 4,925 in the previous year.
- **Wrong Side Driving**: It is the **second most significant cause** of road fatalities.
- **Two-Wheeler Related Fatalities:** It accounted **for 44% of the nearly 1.7 lakh** fatalities on Indian roads in 2022.
- **Speeding as the Leading Cause**: The share of speeding as the primary cause of road deaths has increased from **64% in 2018 to 71% in 2022.**
- **Demographics of Fatalities**: **Young adults** (18-45 years)



Source: Road Accidents in India 2022.

accounted **for 66.5%** of victims during 2022, and those in the **working age group of 18-60** years constituted **83.4%** of total road accident fatalities.

- **Regional Variation**: Tamil Nadu recorded the **highest number** of road accidents on national highways in 2022, with 64,105 accidents (**13.9%**) followed by Madhya Pradesh (54,432 or 11.8%).
  - ✓ The number of **persons killed** in road accidents was highest in **Uttar Pradesh.**
  - ✓ **Delhi saw an 18% increase** in fatalities in 2022 followed by **Bengaluru 772 fatalities**.
- **India's Global Road Fatality Share**: India has the **highest number of road fatalities globally**, accounting for approximately **11%** of global road deaths.

Government initiatives to prevent road accidents

- **Education:**
  - ✓ Public awareness campaigns through electronic and print media and NGOs.
  - ✓ **National Road Safety Month/Week** for spreading awareness and strengthening road safety.
  - ✓ **A Certification Course for Road Safety Auditors.**
- **Engineering (Roads):**
  - ✓ **Identification and rectification** of **black spots** (accident-prone areas) on national highways.
  - ✓ Issuing **guidelines for pedestrian** facilities for **persons with disabilities**.
- **Engineering (Vehicles):**
  - ✓ Improved safety standards for automobiles, including **Airbags, Anti-Breaking System (ABS), Tyres, Crash tests** etc.
  - ✓ **Speed Limiting devices** on all transport vehicles.
- **Enforcement:**
  - ✓ **Motor Vehicles (Amendment) Act, 2019** for strict enforcement through technology and penalties for traffic rule violations.
- **Emergency Care:**
  - ✓ **Motor Vehicles (Amendment) Act, 2019** introduces a scheme for **cashless treatment** during the golden hour for accident victims.
  - ✓ **Ambulances at all toll plazas** on completed National Highways corridors.
- **MoRTH** has introduced a web portal called **'e-DAR' (e-Detailed Accident Report**) to **offer quick access to information** about road accidents and facilitate the **speedy processing** of accident **compensation claims**.

Global initiatives related to road safety

- **Brasilia Declaration on Road Safety (2015):** To halve the number of global deaths and injuries from road traffic accidents by 2030.
  - ✓ India is a signatory to the Declaration.
- **Decade of Action for Road Safety 2021-2030:** The UN General Assembly adopted resolution **"Improving global road safety"** with the ambitious target of preventing at least **50% of road traffic deaths and injuries by 2030.**
- **The International Road Assessment Programme (iRAP):** is the umbrella programme for **Road Assessment Programmes (RAPs)** worldwide that are working to save lives.

Way Forward

Strengthening enforcement, enhancing **educational campaigns**, improving road and vehicle engineering, and investing in **emergency services** to address the rising road accidents in India, with a focus on reducing fatalities and **promoting road safety awareness**, is the best way ahead.

9. PRELIMS CORNER

Civil Disobedience Movement

Mahatma Gandhi's Dandi March served as the catalyst for the start of the Civil Disobedience Movement. In March 1930, Gandhi and 78 other ashram members set off on foot for Dandi, a village on Gujarat's western seaboard, from the Sabarmati Ashram in Ahmadabad. On April 6, 1930, they arrived in Dandi, where **Gandhi violated and broke the Salt Law.** The Civil Disobedience Movement gained significant support thanks to the Salt Satyagraha, which represented citizens' opposition to British government policy, the main theme of the movement.

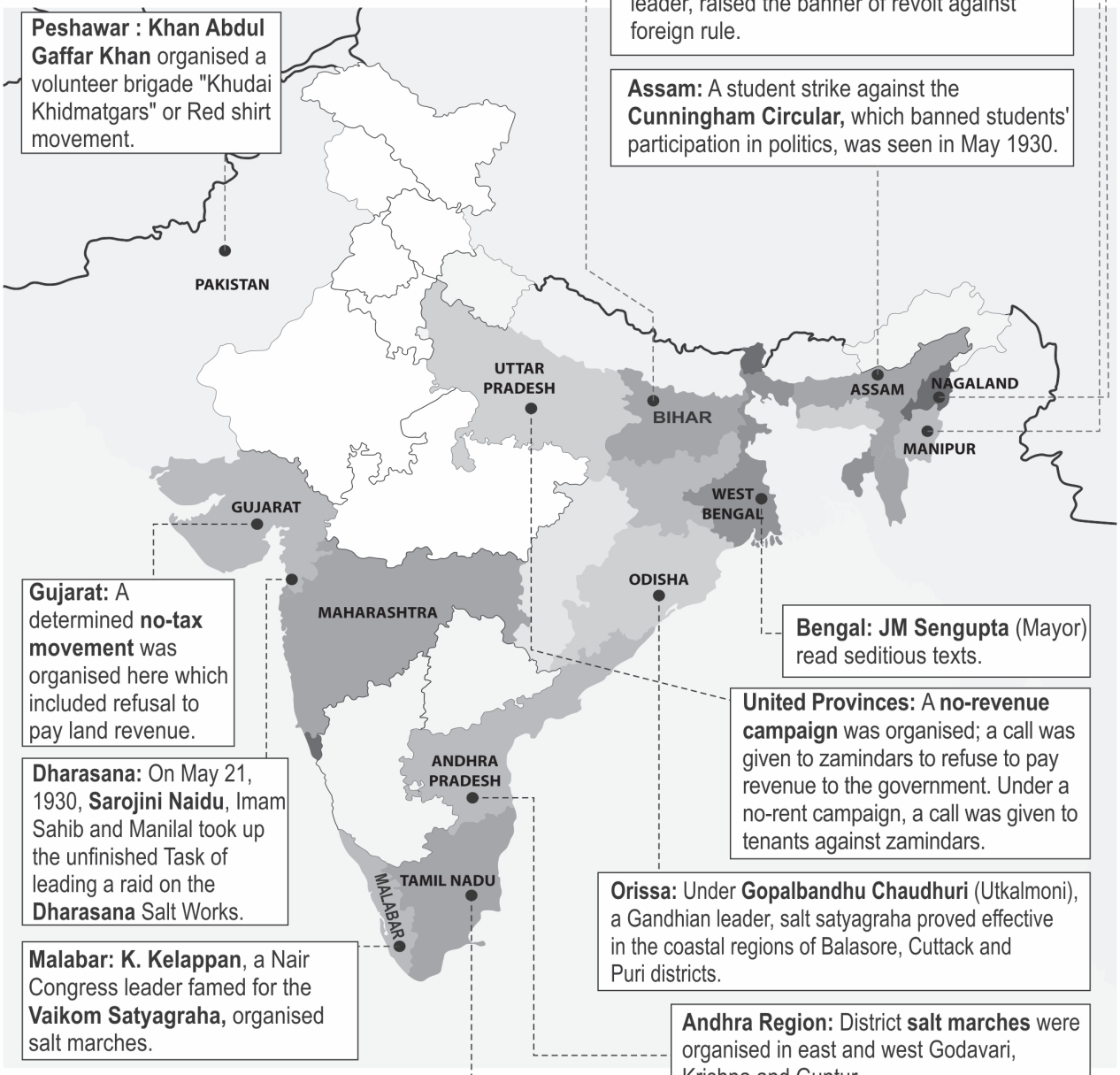
Satyagraha at Different Places

Bihar: A powerful **no-chaukidari tax** agitation replaced the salt satyagraha (owing to physical constraints in making salt).

Manipur and Nagaland: These areas took a brave part in the movement. At the young age of thirteen, **Rani Gaidinliu** a Naga spiritual leader, raised the banner of revolt against foreign rule.

Peshawar : Khan Abdul Gaffar Khan organised a volunteer brigade "Khudai Khidmatgars" or Red shirt movement.

Assam: A student strike against the **Cunningham Circular,** which banned students' participation in politics, was seen in May 1930.



Gujarat: A determined **no-tax movement** was organised here which included refusal to pay land revenue.

Bengal: JM Sengupta (Mayor) read seditious texts.

United Provinces: A **no-revenue campaign** was organised; a call was given to zamindars to refuse to pay revenue to the government. Under a no-rent campaign, a call was given to tenants against zamindars.

Dharasana: On May 21, 1930, **Sarojini Naidu**, Imam Sahib and Manilal took up the unfinished Task of leading a raid on the **Dharasana** Salt Works.

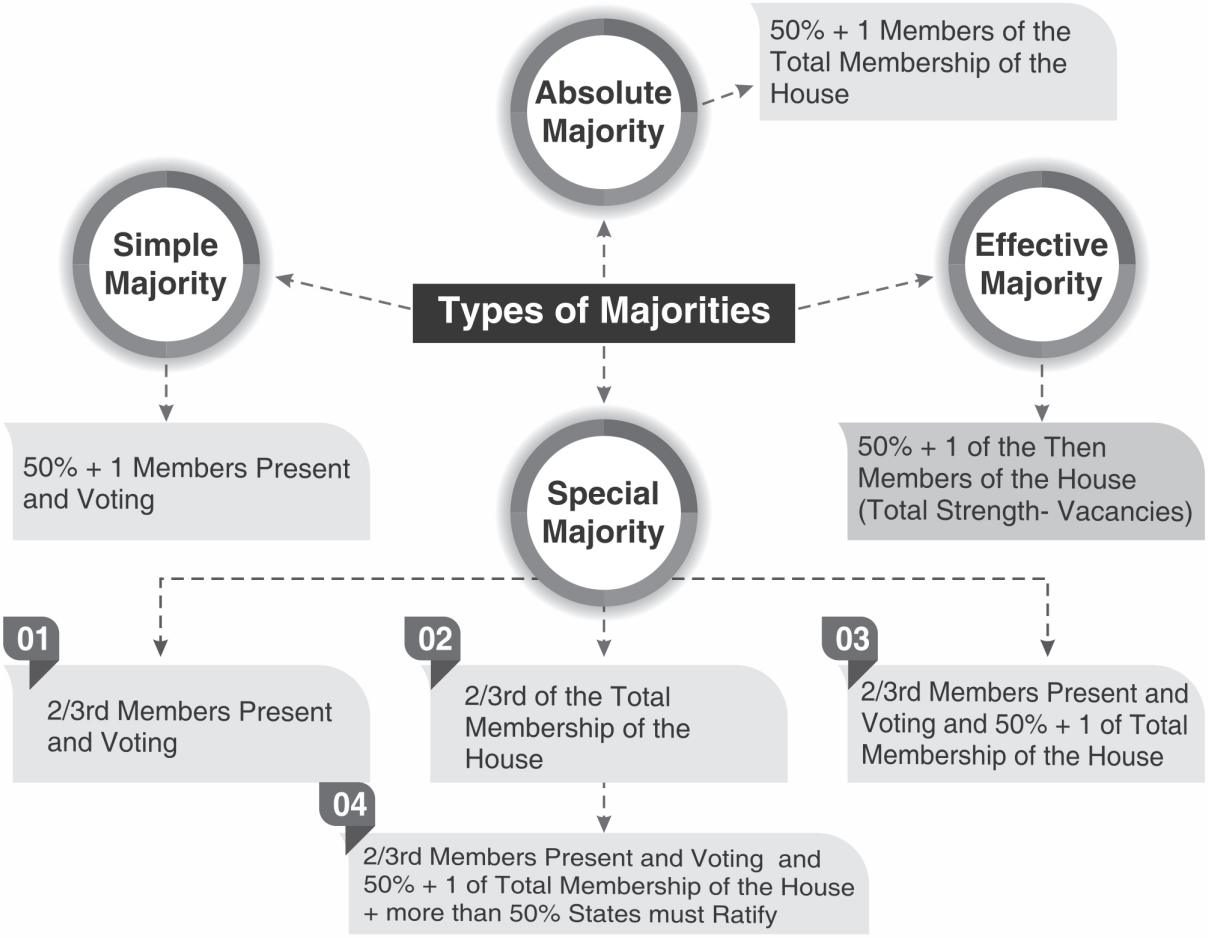
Orissa: Under **Gopalbandhu Chaudhuri** (Utkalmoni), a Gandhian leader, salt satyagraha proved effective in the coastal regions of Balasore, Cuttack and Puri districts.

Malabar: K. Kelappan, a Nair Congress leader famed for the **Vaikom Satyagraha,** organised salt marches.

Andhra Region: District **salt marches** were organised in east and west Godavari, Krishna and Guntur.

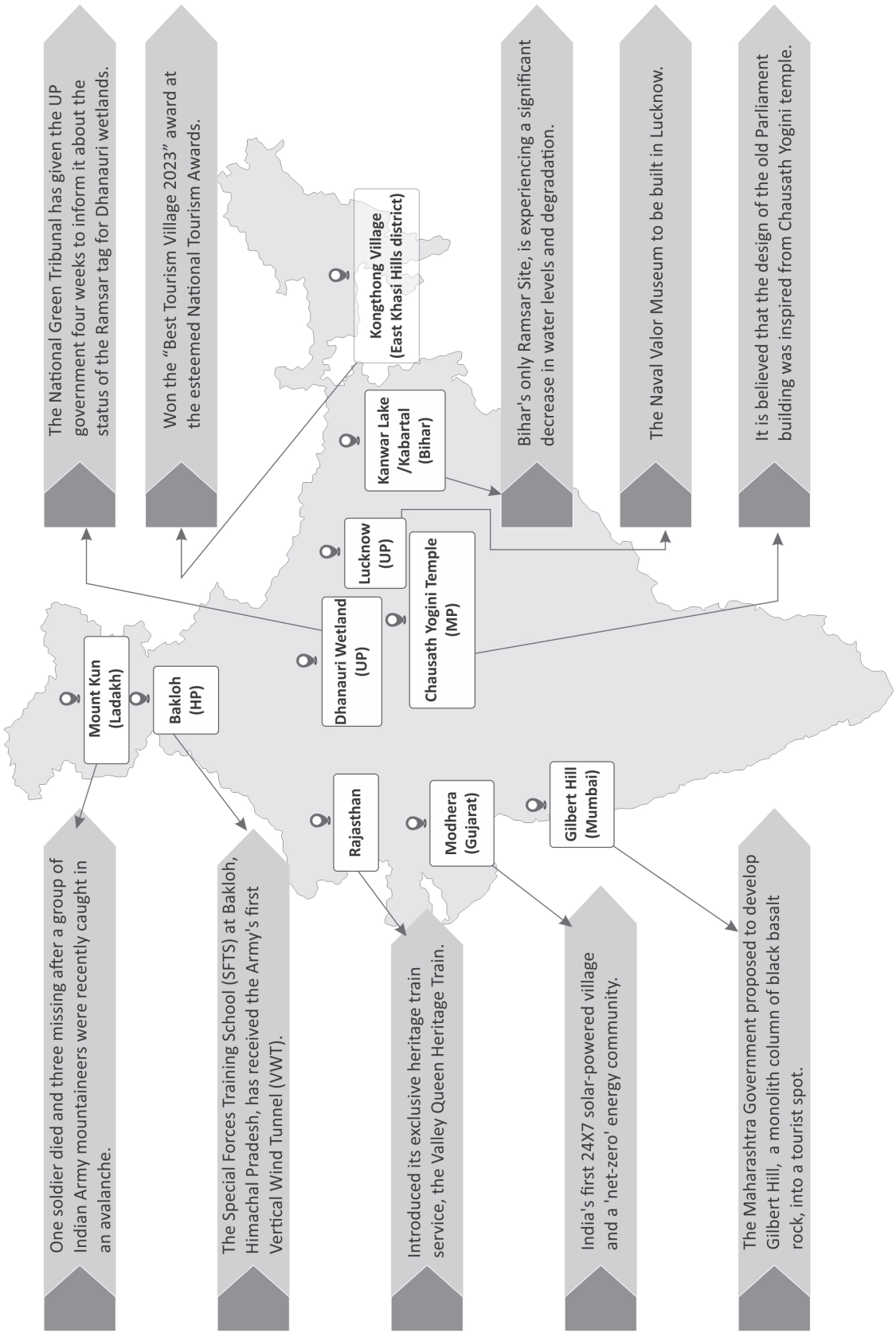
Tamil Nadu: C. Rajagopalachari organised a march from Thiruchirapalli to Vedaranniyam on the Tanjore (or Thanjavur) coast to break the salt law.

Types of Majorities

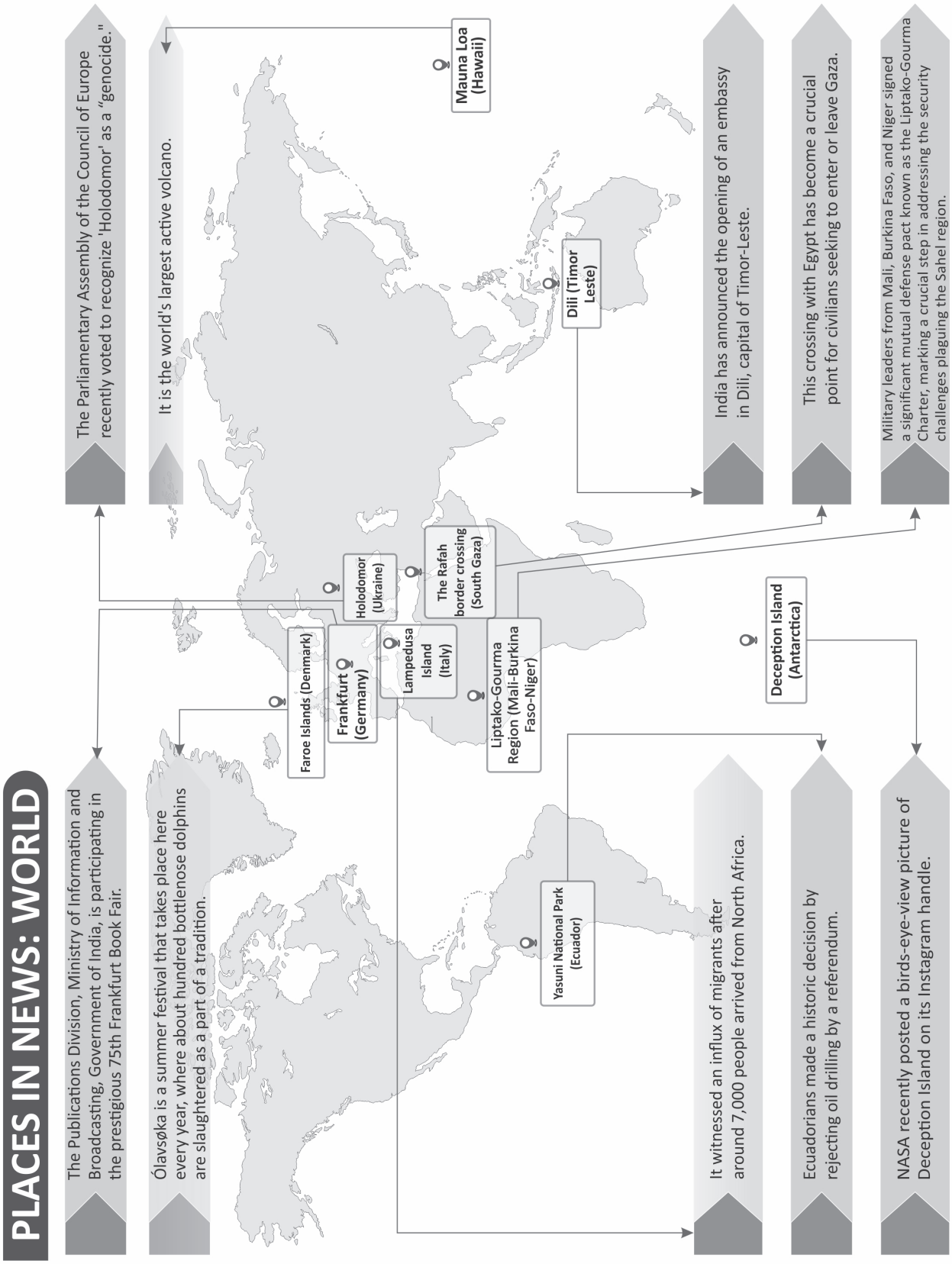


Actions	Majorities Required
1. Laws on Articles 2, 3	Simple Majority (not a Constitutional Amendment)
2. Cession of Territory	Special Majority 03
3. Rajya Sabha asks Parliament to Legislate on State subject	Special Majority 01
4. Lok Sabha suggests revocation of National Emergency	Simple Majority
5. Approval of President's Rule in 6 months' time	Simple Majority
6. Approval of Financial Emergency	Simple Majority
7. Amending Federal Structure of Constitution	Special Majority 04
8. Impeachment of President	Special Majority 02
9. Impeachment of Vice President	Effective Majority in Rajya Sabha Simple Majority in Lok Sabha (for approval)
10. Impeachment of Speaker	Effective Majority
11. Impeachment of Deputy Speaker	Effective Majority
12. Impeachment of Deputy Chairman	Effective Majority
13. Removal of Supreme Court Judge	Special Majority 03

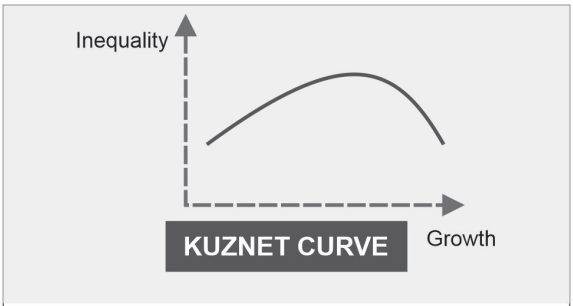
PLACES IN NEWS: INDIA



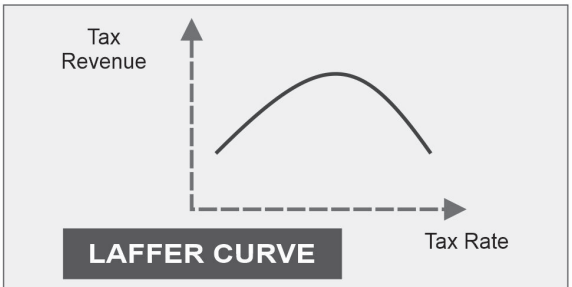
- One soldier died and three missing after a group of Indian Army mountaineers were recently caught in an avalanche.
- The Special Forces Training School (SFTS) at Bakloh, Himachal Pradesh, has received the Army's first Vertical Wind Tunnel (VWT).
- Introduced its exclusive heritage train service, the Valley Queen Heritage Train.
- India's first 24X7 solar-powered village and a 'net-zero' energy community.
- The Maharashtra Government proposed to develop Gilbert Hill, a monolith column of black basalt rock, into a tourist spot.
- It is believed that the design of the old Parliament building was inspired from Chausath Yogini temple.
- The Naval Valor Museum to be built in Lucknow.
- Bihar's only Ramsar Site, is experiencing a significant decrease in water levels and degradation.
- Won the "Best Tourism Village 2023" award at the esteemed National Tourism Awards.
- The National Green Tribunal has given the UP government four weeks to inform it about the status of the Ramsar tag for Dhanauri wetlands.


PLACES IN NEWS: WORLD
The Publications Division, Ministry of Information and Broadcasting, Government of India, is participating in the prestigious 75th Frankfurt Book Fair.
Ólavsøka is a summer festival that takes place here every year, where about hundred bottlenose dolphins are slaughtered as a part of a tradition.
The Parliamentary Assembly of the Council of Europe recently voted to recognize 'Holodomor' as a "genocide."
It is the world's largest active volcano.
Mauna Loa (Hawaii)
Dili (Timor Leste)
India has announced the opening of an embassy in Dili, capital of Timor-Leste.
This crossing with Egypt has become a crucial point for civilians seeking to enter or leave Gaza.
Military leaders from Mali, Burkina Faso, and Niger signed a significant mutual defense pact known as the Liptako-Gourma Charter, marking a crucial step in addressing the security challenges plaguing the Sahel region.
Faroe Islands (Denmark)
Frankfurt (Germany)
Holodomor (Ukraine)
Lampedusa Island (Italy)
The Rafah border crossing (South Gaza)
Liptako-Gourma Region (Mali-Burkina Faso-Niger)
Deception Island (Antarctica)
Yasuni National Park (Ecuador)
It witnessed an influx of migrants after around 7,000 people arrived from North Africa.
Ecuadorians made a historic decision by rejecting oil drilling by a referendum.
NASA recently posted a birds-eye-view picture of Deception Island on its Instagram handle.

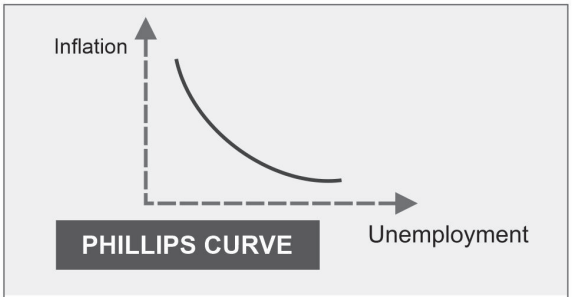
Learn Through Graphs



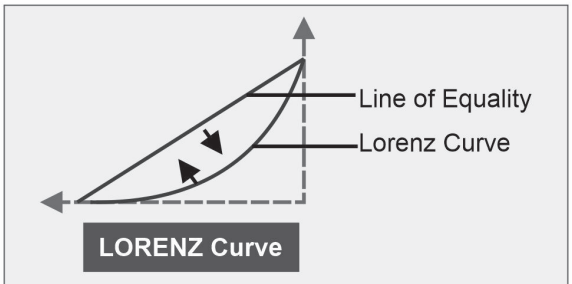
Kuznet curve shows that as a country undergoes industrialization and economic development, there is typically a rise in income inequality in the initial stages of this process. However, after a certain point the level of inequality starts decreasing, and eventually, it reaches a state of balance or equilibrium.



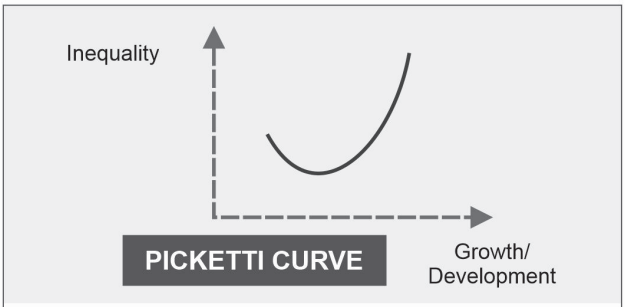
The Laffer Curve suggests, as the tax rate increases, tax revenue also increases, but at a decreasing rate. At some point the curve reaches a maximum, and then begins to decline.



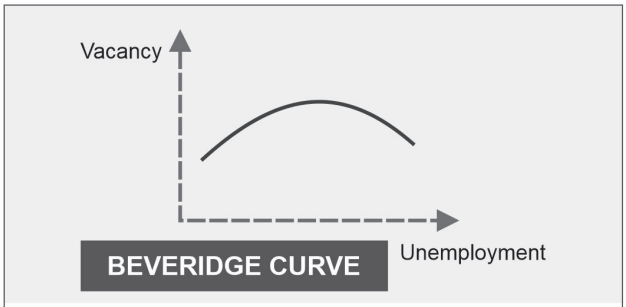
The Phillips curve shows that there is an inverse relationship between inflation and unemployment. This means that when the rate of inflation is high, the rate of unemployment is low, and vice versa.



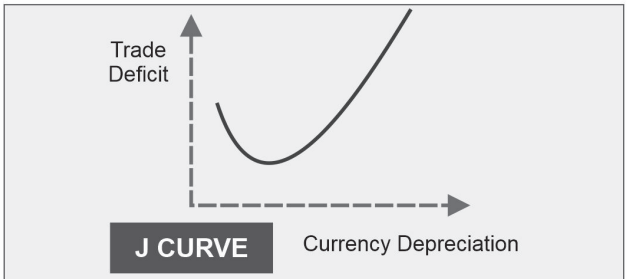
The Lorenz Curve depicts, a perfectly equal distribution would be represented by a 45-degree line, meaning that each percentile of the population would have the same percentage of the total income or wealth. The further the Lorenz curve deviates from the 45-degree line, the greater the inequality.



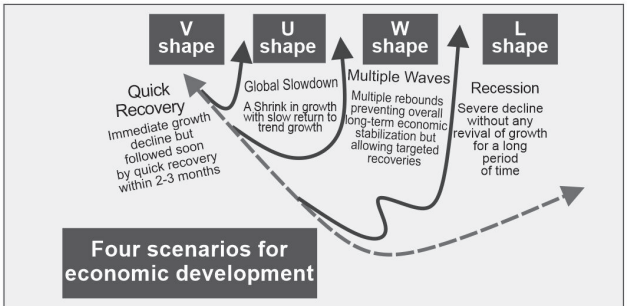
The Piketty curve shows that inequality tends to increase in the early stages of economic development, as capital accumulates faster than income. However, as economies mature, inequality eventually begins to decline.



Beveridge Curve highlights an inverse relationship between unemployment and job vacancies. This means that when unemployment is high, there are relatively few job vacancies and when unemployment is low, there are relatively many job vacancies.



The J-curve is a hypothetical graph that depicts a trend that starts with a sharp decline and is followed by a dramatic rise. When a country devalues its currency, its exports become cheaper for foreigners to buy, but its imports become more expensive.



This Graph shows how economic recovery can take many forms which is depicted using alphabetic notations. The fundamental difference between the different kinds of recovery is the time taken for economic activity to normalize.

Geographical Indication (GI) Tag

Key Details

Identifies a good as originating in territory of a member, or a regional locality in that territory, where a given characteristic of good is essentially attributable to its geographical origin.

Defined in the **TRIPS Agreement.**

Registered for a period of **10** years and can be renewed again for a period of **10** years at a time.

Under **Geographical Indications of Goods (Registration & Protection) Act, 1999.**

Importance

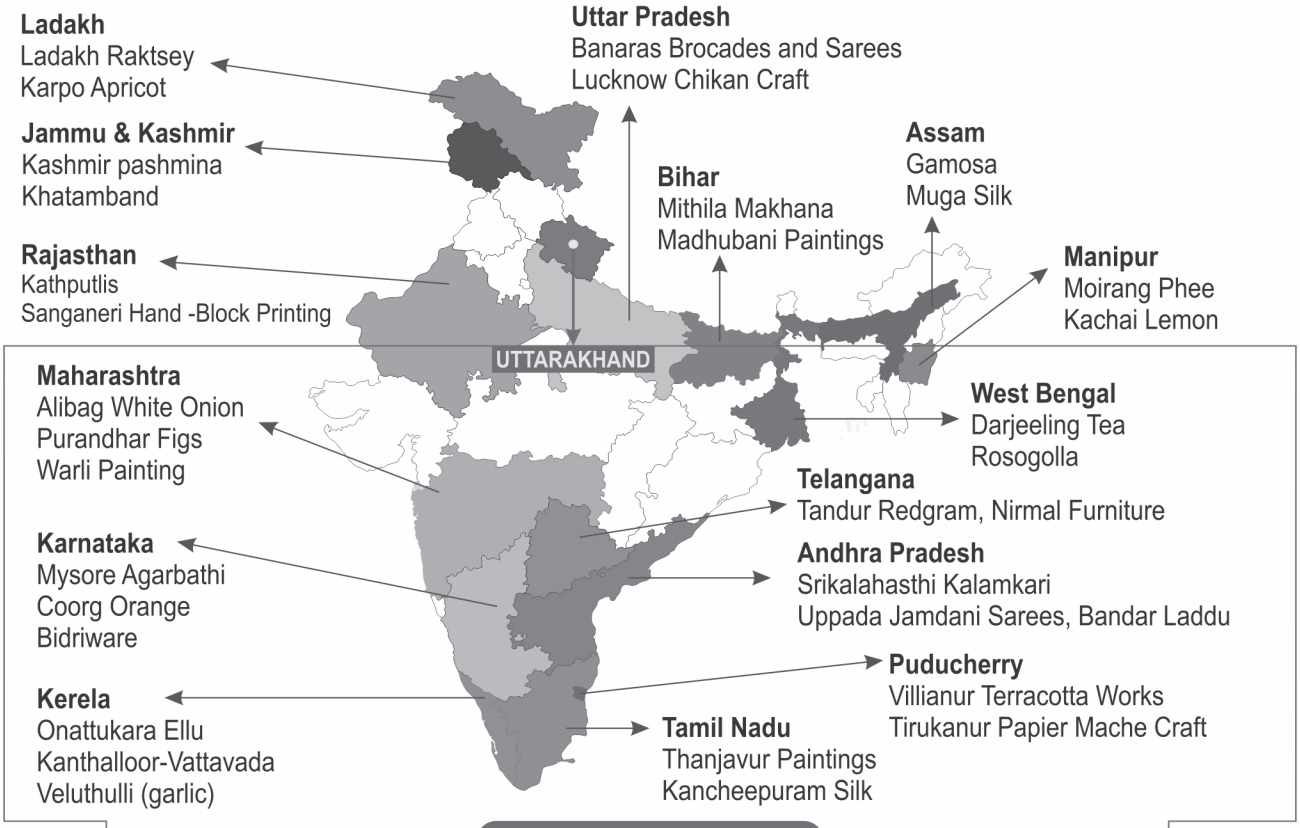
Enables right holders to use the indication **to prevent its use by a third party.**

Does not enable the holder **to prevent** someone from **making a product using same techniques.**

Mechanism

Registrar of Geographical indications: Controller-General of Patents, Designs and Trademarks, DIPP.

Supervises functioning of **Geographical Indications Registry** (All-India jurisdiction)



PRODUCTS GET GI TAGS

Recent Products	Food products	Handicrafts
Local Brick-Tea: Recognized for its unique characteristics. **Himalayan Textiles:** Fabrics made from Bichhu buti, derived from Himalayan nettle fibers. **Berinag Tea:** Highly prized by London tea houses and blenders, crafted from wild Himalayan plant leaves compressed into a solid mass. **Man-Dua (Finger millet):** It's grown in Garhwal and Kumaon, serving as a staple in various regions of Uttarakhand. **Jhangora:** A homegrown millet.	**Gahat** (cluster bean) **Uttarakhand lal chawal** (red rice) **Uttarakhand kala bhat** (black soybean) **Malta** fruit **Chaulai** (ramdana) **Buransh** juice **Pahari toor** dal	**Uttarakhand likhai** (wood carvings) **Nainital mombatti** (candles) **Rangwali pichhoda** of Kumaon **Chamoli wooden Ramman masks** **Almora Lakhori mirchis** (chilli variant)

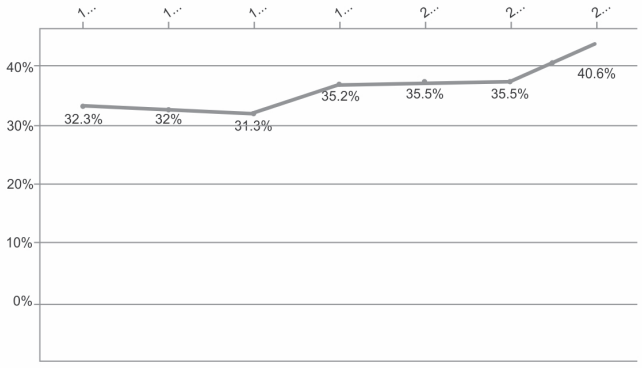
10. MAINS CORNER

GS 1 : Social Issues

India Ageing Report 2023

The **UNFPA** (United Nations Population Fund) India, in collaboration with the International Institute for Population Sciences(IIPS) has unveiled the India Ageing Report 2023, highlighting the rapidly growing elderly population in India.

Decadal growth of the elderly population, 1961–2031



Note: Projections beyond 2011 are based on data drawn from Census of India 2011

- The share of elderly population is estimated to double to **20.8%** by 2050. Also, elderly women will outnumber senior men
- Close to **30%** of women above 60 years. have one morbidity and nearly **25%** suffer from two morbidities
- **30%** of elderly women have difficulty getting out of bed, while **25%** find it tough to take a bath and eat without assistance
- Less than **25%** of elderly women are aware of concession schemes given by the government for senior citizens

47%
Share of elderly women who never worked in the past

35%
Share of elderly women who experience difficulty using the toilet

Chart 1: Greying India

The number of senior citizens (aged 60+) in India has markedly increased since 2010, while there has been a drop in the population aged under 15. By the year 2100, seniors are projected to constitute 36% of India's total population

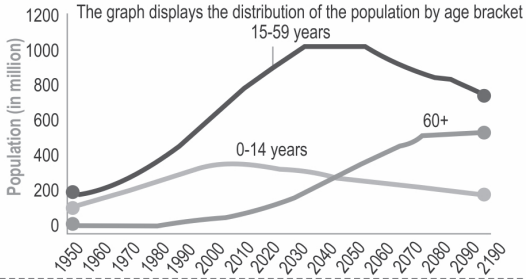


Chart 2: Hindrances in receiving benefits

The table shows the share of elderly in BPL households not utilising social security schemes.Over 47% of elderly widows believe that they are not eligible to get benefits under IGNWPS*

Reasons	Indira Gandhi National Old Age Pension Scheme		Indira Gandhi National Widow Pension Scheme^	Annapurna Scheme	
	Men	Women	Women	Men	Women
No need	7.2	5.9	10.3	12.1	8.7
Not eligible	19.9	22.5	47.4	38.4	46.3
Not having documents	8.3	6.9	5.2	10.5	8.6
Not yet applied	25.6	24.5	14.9	19.9	17.3
Process is cumbersome	35.1	36.5	20	18.4	18.3
Other reasons	3.8	3.7	2.2	0.6	0.8

Chart 3: Utilisation of security schemes

The chart shows the share of elderly who benefit from various social security schemes. Only 24% of widowed women in BPL households receive benefits through the IGNWPS^

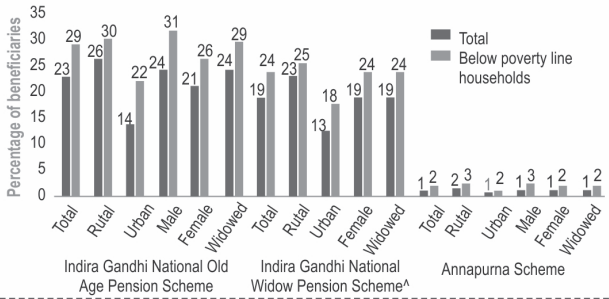
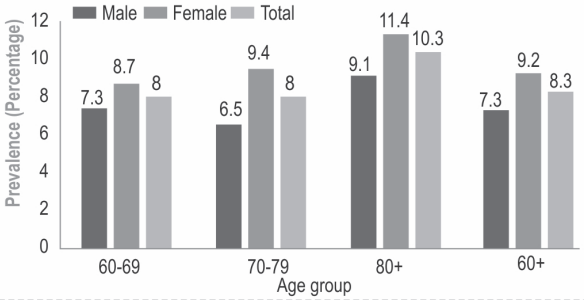


Chart 4: Depression among the elderly

The chart shows the prevalence of depression among the elderly by age and sex. The incidence of depression was higher among elderly women across age groups



Courtesy: The Hindu, Indian Express

Chart 5: Awareness of concessions

The chart shows the share of elderly who are aware of concession schemes given by the government. The awareness of concessions is lower in rural areas and among women

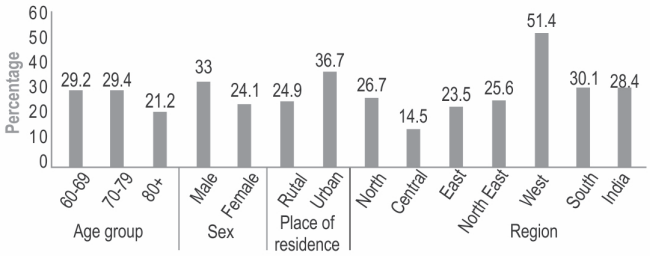


Chart 6: Disease prevalence

The chart shows the prevalence of chronic morbidities among older men and women. Elderly women had a higher prevalence of such health conditions than men

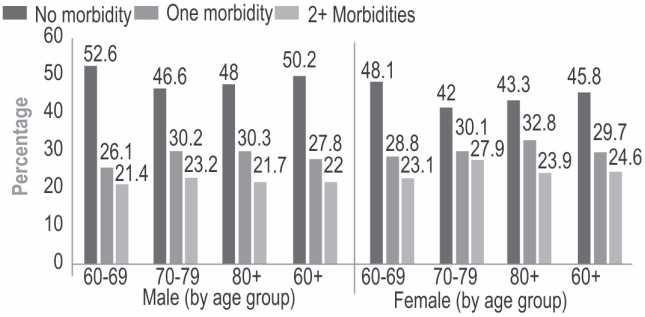


Chart 7: Dependency by region

The graph displays the old age dependency ratio, which represents the number of individuals aged 60 and above for every 100 people in the 15-59 age bracket. A heightened ratio indicates a significant demand for care within families

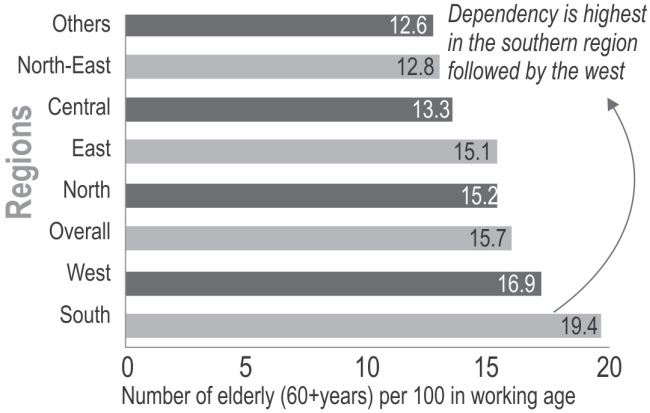


Chart 8: Elderly and young

The graph presents the ageing index, which signifies the number of seniors (60 years and above) for every 100 children (under 15 years of age) the ageing index points to reduced fertility rates.

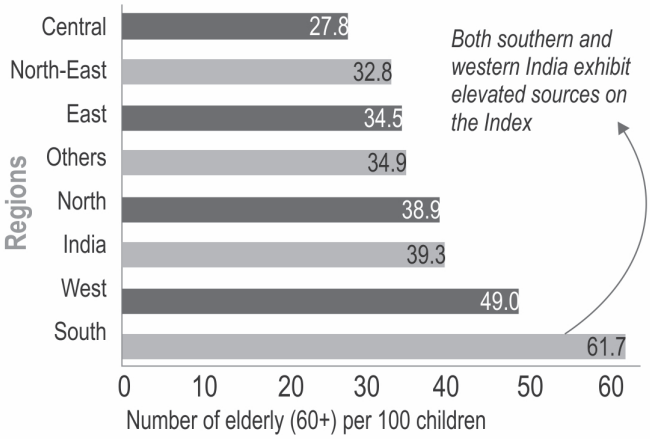


Chart 9: Sex ratio among elderly

The chart shows the number of old women per 1,000 old men in 2021 and 2011. Elderly women outnumber senior men in most regions

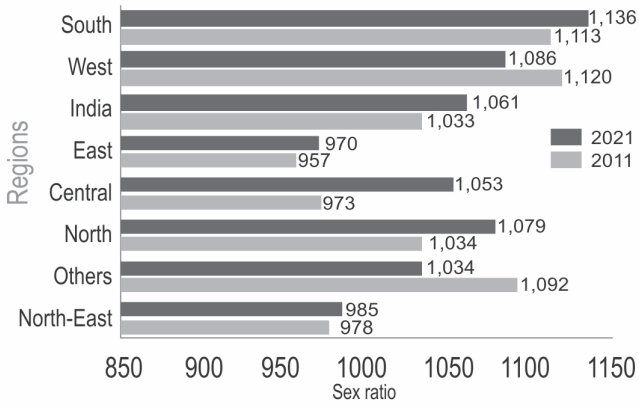
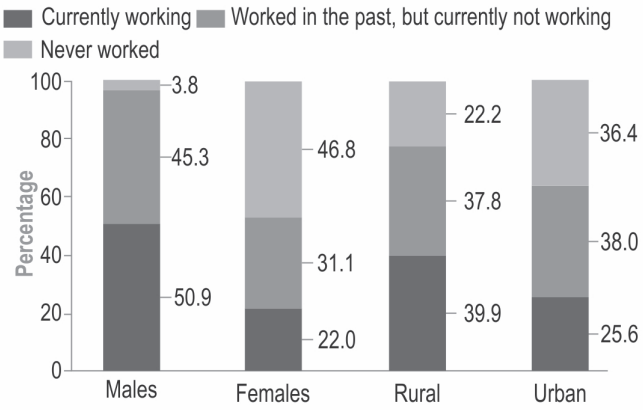


Chart 10: Working status

The graph illustrates the employment status of the senior population, segmented by gender by and location. Merely 22% of senior women are mployed



Courtesy: The Hindu, Indian Express

The United Nations System

Established: October 24, 1945.
UN Headquarters: New York City.
Regional offices: Geneva, Vienna, and Nairobi.
Official Languages: Arabic, Chinese, English, French, Russian, and Spanish.

Charter of the UN finalized in:
San Francisco Conference (April 25, 1945)
The UN's Chief Administrative Officer:
UN Secretary-General
1st Secretary-General: Trygve Lie (Norway)
Current Secretary-General: António Guterres (Portugal)

Membership:
- **193** UN member states
- **2** UN Observer States (Palestine, Vatican)
- **2** eligible Non-Member States (Niue, Cook Islands)
- **17** Non-Self-Governing Territories
- Antarctica

UN Principal Organs

General Assembly

Subsidiary Bodies
- Main and other sessional committees
- Disarmament Commission
- Human Rights Council
- International Law Commission
- Standing committees and ad hoc bodies

Funds and Programmes
UNCTAD United Nations Conference an Trade and Development
●ITC International Trade Centre (UNCTAD/WTO)
UNDP United Notions Development Programme
●UNCDF United Nations Capital Development Fund
●UNV United Nations Volunteers
UNEP United Nations Environment Programme
UNFPA United Nations Population Fund
UN-HABITAT United Nations Human Settlements Programme
UNHCR Office of the United Nations High Commissioner for Refugees
UNICEF United Nations Children's Fund
UNODC United Nations Office on Drugs and Crime
UNRWA United Nations Relief and Works Agency for Palestine Refugees in the Near East
UN-Women United Nations Entity for Gender Equality and the Empowerment of Women
WFP World Food Programme

Research and Training institutes
UNICRI United Nations Interregional Crime and Justice Research Institute
UNIDIR United Nations Institute for Disarmament Research

Other Entities
UNAIDS Joint United Nations Programme on HIV/AIDS
UNISDR United Nations International Strategy for Disaster Reduction
UNOPS United Nations Office for Project Services
UNITAR United Nations Institute for Training and Research
UNRISD United Nations Research Institute for Social Development
UNSSC United Nations System Staff College
UNU United Nations University

Security Council

Subsidiary Bodies
- Counter-terrorism committees
- International Criminal Tribunal for Rwanda (ICTR)
- International Criminal Tribunal for the former Yugoslavia (IC1Y)
- Military Staff Committee
- Peacekeeping operations and political missions Sanctions committees (ad hoc)
- Standing committees and ad hoc bodies

Advisory Subsidiary Body
Peacebuilding Commission

Related Organizations
CTBTO Preparatory Commission Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization
IAEA International Abmic Energy Agency
OPCW Organisation for the Prohibition of Chemical Weapons
WTO World Trade Organization

Economic and Social Council

Specialized Agencies
FAO Food and Agriculture Organization of the United Notions
ICAO International Civil Aviation Organization
IFAD International Fund for Agricultural Development
ILO International Labour Organization
IMF International Monetary Fund
IMO International Maritime Organization
ITU International Telecommunication Union
UNESCO United Nations Educational, Scientific and Cultural Organization
UNIDO United Nations Industrial Development Organization
UNWTO World Tourism Organization
UPU Universal Postal Union
WHO World Health Organization
WIPO World Intellectual Property Organization
WMO World Meteorological Organization
World Bank Group
- **IBRD** International Bank for Reconstruction and Development
- **KSID** International Centre for Settlement of Investment Disputes
- **IDA** International Development Association
- **IFC** International Finance Corporation
- **MIGA** Multilateral Investment Guarantee Agency

Secretariat

Functional Commissions
- Crime Prevention and Criminal Justice
- Narcotic Drugs
- Population and Development
- Science and Technology for Development
- Social Development
- Statistics
- Status of Women
- Sustainable Development
- United Nations Forum on Forests

Regional Commissions
ECA Economic Commission for Africa
ECE Economic Commission for Europe
ECLAC Economic Commission for Latin America and the Caribbean
ESCAP Economic and Social Commission for Asia and the Pacific
ESCWA Economic and Social Commission for Western Asia

Other Bodies
- Committee for Development Policy
- Committee of Experts on Public Administration
- Committee on Non-Governmental Organizations
- Permanent Forum on Indigenous Issues
- United Nations Group of Experts on Geographical Names
- Other sessional and standing committees and expert, ad hoc and related bodies

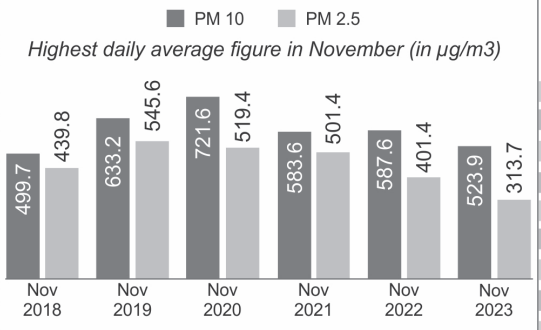
International Court ofJustice

Trusteeship Council

Departments and Offices
EOSG Executive Office of the Seas's:try-General
DESA Department of Economic and Social Affairs
DFS Department of Field Support
DGACM Department for General Assembly and Conference Management
DM Department of Management
DPA Department of Political Affairs
DPI Department of Public Information
DPKO Department of Peacekeeping Operations
DSS Department of Safety and Security
OCHA Office for the Coco:friction of Humaribrion Mein
OHCHR Office of the United Nations High Commissioner for Human Rights
OIOS Office of Internal Oversight Services
OLA Office of Legal Affairs
OSAA Office of the Special Adviser on Africa
SRSG/CAAC Office of the Special Representative of the Secretary-General for Children and Armed Conflict
SRSG/SVC Office of the Special Representative of the Secretary-General on Sexual Violence in Conflict
UNODA Office for Disarmament Affairs
UNOG United Nations Office at Geneva
UN-OHRLLS Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
UNON United Nations Office at Nairobi
UNOV United Nations Office at Vienna

Courtesy: The United Nations

POLLUTION LEVELS OVER SIX YEARS



From Centre for Science and Environment, based on data from the government monitoring network

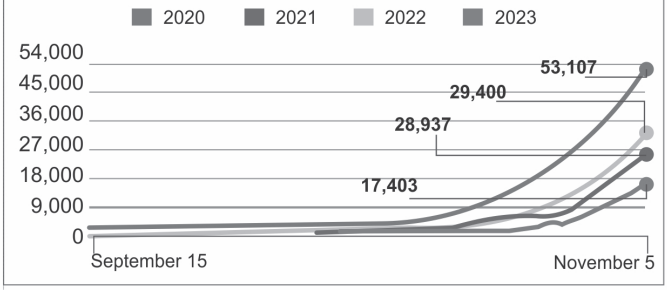
What Fouls Delhi's Air

Consolidated source contributions to annual avg PM2.5 concentrations

Sector/Source Category	Annual Contribution Range
Vehicle exhaust (petrol, diesel and CNG)	10-30%
Dust from roads and construction activities	10-30%
Industrial sources, including power plants	10-30%
Residential cooking and heating activities	<10% summer, <30% winter
Open waste burning	5-15%
Power plants (mostly outside city limits)	Under 7%
Dust storms as a seasonal regional source	Under 5%
Agricultural residue buming (seasonal)	Under 3%
Diwali firecrackers	Under 1%

Source: What is Polluting Delhi's Air? A Review from 1990 to 2022, Guttikunda et al.

CUMULATIVE FARM FIRES OVER THE YEARS



Besieged Capital

Data from NASA's satellite imagery show farm fires all across Punjab and in parts of Haryana and Uttar Pradesh

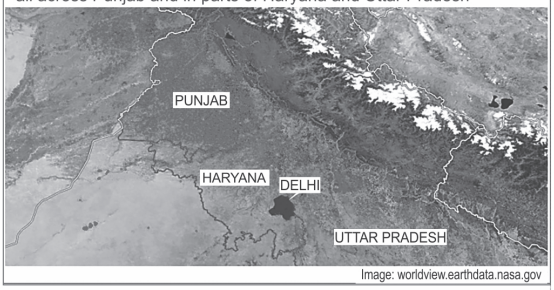
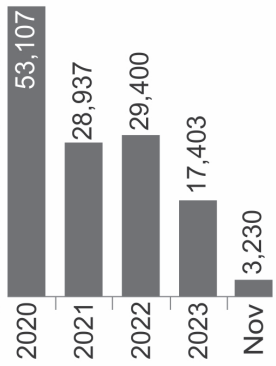


Image: worldview.earthdata.nasa.gov

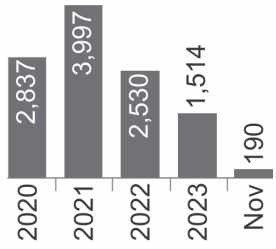
How the Neighbouring States Fared

Farm fires from neighbouring states is considered one of the factors behind the rise in pollution in the capital

PUNJAB

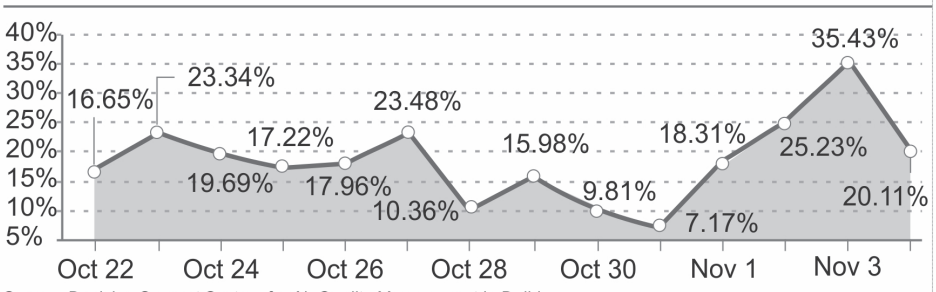


HARYANA



Source: ICAR

PERCENTAGE CONTRIBUTION OF PM 2.5 TO DELHI'S AIR (BIOMASS BURNING)



Source: Decision Support System for Air Quality Management in Delhi

Courtesy: The Hindu

Important Keywords with Examples			
Sl. No.	**Term**	**Definition**	**Example**
1.	**Aptitude**	A condition or a set of characteristics regarded as symptomatic of an individual's ability to acquire with training some usually specified knowledge, skill or set of responses.	Indian Chess prodigy **Rameshbabu Praggnanandhaay** has an aptitude for the game.
2.	**Integrity**	The quality of eliminating the difference between what we think and what we do, highlighted by not compromising on values at any cost.	**Ashok Khemka** resisted corruption and cancelled land deals involving powerful people.
3	**Impartiality**	It is a principle of justice holding that decisions should be based on objective criteria rather than on the basis of bias and prejudice.	Governor of Nagaland **N. Ravi** displayed impartiality when put in charge of peace negotiations with NSCN(IM).
4.	**Non-Partisanship**	Also known as Political Neutrality, it governs the relations between political executives and civil servants where the latter must cooperate with the former without hesitating to correct them, staying free of political affiliations in the process.	Punjab Emergency management in 1980s by ex-IPS **Julio Roberio.**
5.	**Objectivity**	The ability to judge fairly, without bias or external influence where decisions are based on observable phenomena, facts and evidences and not influenced by emotions, biases and personal preferences.	Statistical analysis on Poverty by **Tendulkar Committee,** based on basket of items and certain parameters, to draw objective conclusions on evaluation of Poverty.
6.	**Dedication to Public Service**	Having inner motivation and passion for working in the defence of larger public interest to promote welfare and common good.	**Shahida Praveen** chose duty over marriage during COVID-19 pandemic.
7.	**Empathy**	The ability to understand and share others' feelings, pains and sorrows as if they are our own.	**Empathizing with my friend's depression** having been gone through it myself before.
8.	**Compassion**	Reaction to other people's plight which motivates us to act and help them.	**Compassion for poor people suffering from malnutrition** helps implement Public Distribution System under National Food Security Act 2013.
9.	**Sympathy**	Based on cognitive belief which builds the capacity of entering into or sharing the feelings or interests of another.	**Ishwarchandra Vidyasagar** displayed sympathy for widows and advocated for their remarriage.
10.	**Tolerance**	A fair, objective, permissive attitude and emotional acceptance towards those who's opinions, race, religion, nationality etc. differ from one's own.	**Zainul Abidin** ensured return of non-Kashmiris, restoration of temples, abolished Jizyah, appointed qualified Hindus etc.
11.	**Attitude**	These are abilities that are acquired and developed, and not inborne, helping an individual evaluate situations and people around them.	**Rosa Parks** stood firm against discrimination as the "First Lady for Civil Rights" in USA, due to her Positive Attitude.
12.	**Emotional Intelligence**	It refers to a person's ability to understand and manage his own feelings, emotions and impulses to effectively connect and communicate with people.	**Arjun** was feeling emotional fighting against family but **Krishna** asked him to be emotionally intelligent.
13.	**Altruism**	Acts which promote someone else's welfare, even at a risk or cost to ourselves. Such a person will not get deviated towards self-interest by the power and discretion that civil servants usually enjoy.	**Sonu Sood** organized Bus Service for Migrant Workers during COVID-19 pandemic.

Important Keywords with Examples			
Sl. No.	Term	Definition	Example
14.	**Courage/ Fearlessness**	The act of mustering the strength and doing what we know we should do, even though we may be intimidated or afraid.	**Malala Yousafzai** advocated for girls' education despite threats to her life.
15.	**Fortitude**	Display of courage in difficult situations, the virtue that moderates the emotions of fear and daring in accordance with right reason.	**Sardar Vallabhbhai Patel** overturned territorial challenges in post-independence India to contribute to India's integration.
16.	**Temperance**	It is defined as moderation or voluntary self-restraint, the tendency to control oneself from indulging into various desires that lure human beings.	**Aurobindo Ghosh** defined his idea of 'Swaraj' as having control over passions.
17.	**Persuasion**	The process of guiding oneself or another towards the adoption of an attitude/approach by winning their hearts and minds and appealing to their rationality.	**Ajit Doval** while negotiating with insurgents in NE, persuaded them to shun violence.
18.	**Probity**	The quality of having strong regard to moral principles and integrity in personal and public life, representing a maximalist approach to life where a person adheres to ideal principles.	**Anna Hazare** Fought against corruption in India.
19.	**Prudence**	The ability to govern and discipline oneself by the use of reason, to judge between virtuous and vicious actions.	**Anil Swarup** implemented transparent coal block allocation process to reduce corruption risks.
20.	**Conflict of Interest**	A situation where a person can't take impartial decision as he/she stands to get affected.	**Justice Lalit** recused himself in the Ram Janmabhoomi case.
21.	**Crisis of Conscience**	Individual morality different from Collective Morality/Individual morality trapped between two competing values.	**Head of Placement Committee** faces choice whether to stick to procedures or help his friend who is a weak student and financially struggling, to get a job.
22.	**Leadership**	Art of motivating a group to act for a common cause through qualities of teamwork, leading from the front, decision-making, consensus building etc.	**MS Dhoni** led India to 3 ICC trophies during his captaincy.
23.	**Perseverance**	Continuous effort to achieve something despite repeated failures and setbacks, inner strength to face adversity yet be consistent due to inner strength.	**Virat Kohli** persevered during his tough phase (2019-2022) but came back as highest run scorer in 2023 Men's Cricket World Cup.
24.	**Courage of convictions**	It implies the adherence to the beliefs of what is right and what is wrong even in adverse situations and threats, adhering to one's beliefs even during harsh setbacks and criticism.	**Durga Shakti Nagpal** resisted corruption, took on illegal sand mining despite political pressure.
25.	**Forgiveness**	It is the intentional and voluntary process by which a victim undergoes a change in feelings and attitude regarding an offense, let's go of negative emotions such as vengefulness, with an increased ability to wish the offender well.	**Jesus Christ** at the stroke of crucification said," Father, forgive them; for they do not know what they're doing".

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