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EPIC!

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TABLE OF CONTENTS

Electoral Reforms in India

News: The General Elections 2024 for the Lok Sabha are underway. This will be the biggest electoral exercise in the world. The electoral process in India has evolved gradually yet significantly since 1952. The conduct of free and fair elections has ensured that India remains a vibrant democracy.

What are the major challenges in conduct of free and fair elections in India?

- **Criminalization of Politics**: Despite several measures like **disclosure of criminal antecedents**, the number of MPs/MLAs with serious criminal allegations being elected to the Legislatures is rising. **~40% of sitting MPs have criminal cases registered** against them out of which ~25% have declared serious criminal cases.
- **Electoral Finance**: The role of money in winning elections has gradually risen. Consequently political parties have resorted to **corruption and black money to raise finance** to contest elections. The **Electoral Bond Scheme**, which was supposed to curb the role of black money, has been declared unconstitutional by the Supreme Court to due **lack of transparency and possible mis-use**.
- **Overspending**: There is no limit on the amount of money political parties can spend on elections (there are limits for individual candidates). All parties together spent ~INR 50,000-55,000 crore in the 2019 General Elections. This increases the need to raise finance through corrupt and questionable sources.
- **Violation of the Model Code of Conduct (MCC)**: Candidates have regularly engaged in violation of the rules and spirit of the MCC. The penal action taken by the Election Commission has proven to be ineffective in ensuring full compliance.
- **Use of Regionalism/Communalism/Casteism**: Political parties have exploited regional, communal and caste fault-lines for **electoral mobilization**. This can lead to social fragmentation and prevent integration of the society.
- **Violence**: The era of 1990s was notorious for large-scale booth capturing. The instances of booth capturing have reduced considerably, yet there are still numerous incidents of **voter intimidation**, **political violence** and **attacks on rival candidates**. The Panchayat Elections in West Bengal in 2023 were particularly violent.

What are Electoral Reforms?

- Electoral reforms refer to the **evolution and modification of the electoral system**. The Electoral Reforms seek to promote **clean politics**, **free** and **fair elections**, and election of legislators with **clean records**.
- Electoral Reforms include **legal and procedural/process reforms** related to elections.

What are the aims of Electoral Reforms?

- **Free and Fair Elections**: Electoral reforms aim to address the issues of electoral mal-practices and ensure that elections are conducted in a free and fair manner.
- **Enhancing Voter Participation**: Electoral reforms aim to increase voter turnout and to address the issue of **voter apathy**, difficulty in accessing polling booths, etc.
- **Reducing Influence of Money and Muscle Power**: Electoral reforms are targeted to reduce the influence of money and muscle power by regulating campaign finance and ensuring the safety of voters.
- **Transparency and Accountability**: Electoral reforms initiate the measures such as **mandatory disclosure of criminal records** by candidates and the **use of technology** to monitor the electoral process. They have helped in enhancing the transparency and accountability of elections.
- **Addressing Electoral Inequalities**: Electoral reforms aim to bring down the inequalities such as the under-representation of women and marginalized communities.

What major Electoral Reforms have been undertaken in India?

- **Electronic Voting Machines (EVMs)**: EVMs were first introduced in 1982. In 2004 General Elections, EVMs were used in all Lok Sabha constituencies. EVMs have worked in a robust manner and have reduced incentives for booth capturing. EVMs have **simplified the process of counting** and results of elections can be declared within a day. In the paper ballot system, declaration of results can take up to 12 days.
  - Braille Signage features have also been added in the EVMs to make them **disabled-friendly**.
- **Age for Voting**: The age of voting was reduced from 21 to 18 years through the 61st Constitutional Amendment Act, 1988 to **expand the adult franchise** and allow the youth to exercise their choice.
- **Checking Booth Capturing**: In 1989, a provision was made for the adjournment of polls or countermanding the elections in case of booth capturing.
- **Elector's Photo Identity Card (EPIC)**: The Commission introduced Photo-ID Cards in 1993. This helped check bogus voting by non-registered voters and fraud.
- **Postal Ballot**: Provision was made for voting through Postal Ballot in 1999 under certain circumstances by the permission of Election Commission for any class persons.
- **Proxy Voting**: A provision was made for voters from the **Armed Forces** to exercise their right through proxy.
- **Declaration of Criminal Antecedents**: The Election Commission issued an order directing every candidate to disclose the information on the matters of conviction, accusation, assets, and any liabilities.
- **Free Access to Electoral Rolls**: The Election Commission has passed a provision for free supply of electoral rolls.
- **Reporting of Financial Contributions**: The political parties had to report any contribution in excess of INR 20,000 to the Election Commission for claiming income tax relief.

Electoral Reforms by Dinesh Goswami Committee

- **Categorization**: Candidates contesting elections were divided into 3 categories: Political party, Registered and Un-registered Party and Independent.
- **Restriction on Contesting Elections**: A candidate would not be eligible to contest from more than two Parliamentary or Assembly Constituencies and Rajya Sabha/State Legislative Council.
- **By-elections**: By-elections should be held within 6 months from the date of vacancy.
- **Prohibitions**: Strict prohibition on Arms and Sale of liquor near the polling area.
- **Disqualification**: A person convicted for the offenses under the Prevention of Insults to National Honour Act, 1971 is disqualified to contest in the elections to the Parliament and State Legislature for 6 years.
- **Nomination**: The nomination of a candidate in a Constituency should be subscribed by 10 registered electors of the constituency as proposers if the candidate is not sponsored by a recognized political party.

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- **Exit Polls**: In 2009, restrictions were put on the publishing of the exit polls before the completion of the last phase of elections (in a single or multiple States).
- **Overseas Voters**: In 2010, Indian citizens living abroad were allowed to get their name registered in the Parliamentary or Assembly near the place of residence mentioned in the passport and were entitled to receive their voting rights.
- **NOTA**: In 2013, the Supreme Court directed the Election Commission to add NOTA (None of the above) option in EVMs.

- **Disqualification of Convicted Legislators**: In the *Lily Thomas* **Case** (2013), the SC held that convicted MPs and MLAs will be immediately disqualified from holding membership of the House without being given the time of 3 months for appeal.
- **VVPAT**: In 2014, the Election Commission introduced VVPAT (Voter Verifiable Paper Audit Trail) for the verification of votes cast by the electorate. It enhanced transparency in the process.
- **Photos of Candidates**: The Election Commission passed the order that EVMs will carry the picture/photo of candidate, his/her name and symbol of the party to avoid the confusion amongt the common people.
- **Cash Donations**: In 2018, the limit for anonymous cash donations by any individual to a political party was lowered from INR 20,000 to INR 2,000 through the Electoral Bond Scheme.

What should be the way forward?
Implementation of electoral reforms suggested by the ECI can help address the issues of electoral malpractices and help in the conduct of free and fair elections:

- **One Candidate One Constituency**: The Representation of People Act must be amended to provide that a person cannot contest from more than one constituency at a time.
- **Life-time Ban on Contesting Elections after Conviction**: The Commission has endorsed the call for a life-time ban which would 'champion the cause of **decriminalization of politics**'.
- **Ban on Advertisements**: Advertisements of achievements of the Union or State Governments should be prohibited for a period of **6 months prior** to the date of expiry of the term of the House.
- **False Declarations**: Election Commission has proposed that making false declarations concerning elections should be declared an offense under the Representation of the People Act, 1951 (RPA).
- **Rules making under RPA**: Rule-making authority under the Representation of the People Act, 1950, and the Representation of the People Act, 1951, should be **conferred on the Election Commission** instead of the Union Government.
- **Use of Common Electoral Rolls**: There should be the use of common electoral rolls at elections conducted by the Election Commission and the State Election Commissions.
- **Disqualification under Anti-defection Law**: The decisions relating to anti-defection matters should be rendered by the President or the Governor with the recommendation of the Election Commission.
- **National Electoral Fund**: The idea of National Electoral Fund, put forth by former chief election commissioner T.S. Krishnamurthy, can be explored as an **alternative to state funding of elections**. This fund would allow contributions from all donors. The money will then go to the parties according to the results of the elections or any other principle that all parties would agree upon.

Model Code of Conduct

News: With the election campaigns for the General Elections 2024 in full swing, several complaints have been raised against candidates for the violation of the Model Code of Conduct.

What is the Model Code of Conduct? What is the history of its evolution?
- The Model Code of Conduct is a **set of guidelines** issued by the Election Commission of India (ECI) for political parties and candidates to **maintain decorum in their campaigning** and to ensure a **level playing field** for all candidates.
  o It lays down a **list of do's and don'ts** for leaders and parties ahead of elections.
- **Duration of Model Code of Conduct**: The MCC comes into force from the date the election schedule is announced. It stays in force till the date the results are declared.
- **Legal Enforceability of MCC**: MCC **does not have a statutory backing**. It has come to acquire strength in the past decades because of its strict **enforcement by the ECI**.

o Certain provisions of the MCC may be enforced by invoking the corresponding provisions in **other statutes** such as the **IPC (1860)**, **CrPC (1973)**, and **RPA**, **1951**.

- **Penalties for Violation**: If the ECI finds a party or candidate in violation of the MCC, it can take measures from issuing a warning to **ordering an FIR** against the concerned party or candidate.

What are the key provisions of MCC?

General Conduct

- No party or candidate shall engage in any activity which may **aggravate existing differences** or **create mutual hatred** or cause tension between different **castes**, **religious or linguistic communities**.
- All parties and candidates shall avoid all activities which are **corrupt practices** and **offences** under the election law, such as bribing of voters, intimidation of voters, impersonation of voters, canvassing within 100 meters of polling stations, and the transport and conveyance of voters to and from polling station etc.
- Parties and candidates shall **refrain from criticism of all aspects of private life**, which are not connected with the public activities of the leaders or workers of other parties.

Meetings

- The party/candidate shall inform the local police authorities of the **venue and time of any proposed meeting** well in time so as to enable the police to make necessary arrangements for controlling traffic and maintaining peace and order.
  - o They shall apply well in advance to obtain permission for the use of loudspeakers or any other facility.

Processions

- A Party/candidate organizing a procession shall decide beforehand the time and place of the starting of the procession, the route to be followed and the time and place at which the procession will terminate.
- The carrying of effigies purporting to represent member of other political parties or their leaders, burning such effigies in public and such other forms demonstration shall not be countenanced by any political party or candidate.

Polling Day

- All Political parties and candidates shall **co-operate with the officers** on election duty to **ensure peaceful and orderly polling**.
- All Political parties and candidates shall **refrain from serving or distributing liquor** on polling day and during the **48 hours** preceding it.
- All authorized party workers at polling booths should be given suitable **badges or identity cards**.

Evolution of the Model Code of Conduct

1960
A Code of Conduct was voluntarily approved by all Political Parties for elections to the State Legislative Assembly in Kerala.

1962
The ECI circulated the Code to all political parties for the General Elections. It was effective in conducting election campaigns in a peaceful manner.

1968-69
The ECI prepared the document 'Role and Responsibilities of Political Parties during Elections' on minimum standard of conduct and behaviour.

1979
The ECI convened conference of all political parties for a comprehensive MCC so that ruling parties could not misuse their official position. All parties agreed and MCC was made more comprehensive.

1991
The MCC was further amplified and re-issued. The ECI became more pro-active to ensure observance of the MCC.

2014
The ECI issued guidelines prohibiting parties from making promises that exert undue influence on voters. The ECI suggested that manifestoes must indicate the means to achieve the promises.

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- Identity slips supplied to voters shall be on plain paper and shall not contain any symbol, name of the candidate or the name of the party.

Polling Booth

- The EC will appoint observers to whom any candidates may report problems regarding the conduct of the election.

Party in Power

- Ministers shall **not combine official visits with election work** or use official machinery for the same.
- The party in power shall **avoid advertising at the cost of the public exchequer** or using official mass media for publicity on achievements to improve chances of victory in the elections.
- Ministers and other authorities shall **not announce any financial grants**, or promise any construction of roads, provision of drinking water.
- Public spaces and rest houses shall not be monopolized by the party in power and other parties shall also be allowed to use them.

Election Manifestos

- The election manifesto shall not contain **anything against the ideals enshrined in the Constitution**.
- Political parties shall avoid making promises that are likely to vitiate the purity of the election process or **exert undue influence on voters**.
- Manifestos shall **reflect the rationale for promises** and broadly **indicate the ways and means to meet the financial requirements** for it.
- **Manifestos shall not be released during the prohibitory period** (before 48 hours), as prescribed under Section 126 of the Representation of the People Act 1951, for single or multi-phase elections.

Significance of the MCC

- **Ensuring Free and Fair Elections (Article 324)**: MCC aims to address the issues of **electoral malpractices** and ensure that elections are conducted in a **free and fair manner**.
- **Addressing Electoral Inequalities**: MCC aims to bring down the inequalities by **proscribing the use of government machinery** by the party in power for propagating their achievements.
- **Ensuring Social Harmony**: MCC aims to **preserve social harmony** by proscribing the political parties and candidates in engaging in any activity which may aggravate existing differences, create mutual hatred between different castes and communities.
- **Encouraging Transparency and Accountability**: MCC encourages **transparency and accountability** on part of the political parties to reflect the rationale for their electoral promises.

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What are the challenges associated with the Model Code of Conduct?

- **Lack of Legal Enforceability**: The MCC is Election Commission's moral sanction to get political parties and candidates to fall in line. But the norms of the MCC are flouted due to lack of legal backing.
- **Ineffectiveness in Curbing Malpractices**: The MCC has failed to prevent electoral malpractices such as hate speech, fake news, money power, voter intimidation and violence.
- **Challenges from Evolving Technologies**: MCC norms are being challenged by new technologies like the **AI-based deepfakes**, and social media platforms that enable faster and wider dissemination of misinformation and propaganda.
- **Vague Clauses**: Some clauses of the MCC, such as maintaining the 'purity of the election process', are subjective and can be misinterpreted.

- **Reliance on Political Cooperation**: The effectiveness of MCC depends on the cooperation from political parties and Governments. Parties and Governments often indulge in the violation of MCC e.g., failure of political parties to control hate speeches during election campaigning.
- **Lack of Enforcement capacity of Election commission**: ECI suffers from the shortage of functionaries for the effective implementation of the MCC.
- **Interference with Governance**: ECI is criticized for the early application of MCC as it imposes limitations on policy decisions, public spending, welfare schemes, transfers, and appointments.
- **Lack of Awareness and Compliance**: The provisions of the MCC are not widely known or understood by the voters, candidates and the workers of political parties.

What should be the way forward?
- **Establishment of Fast Track Courts**: Special fast track courts must be established for early adjudication of cases of violation of MCC.
- **Explore the Option of Providing Statutory Backing to MCC**: The recommendation of Standing Committee on Electoral Reforms of providing statutory backing to MCC must be considered.
- **Changes in MCC to Counter the Misuse of New Technologies**: Changes in MCC must be brought and the capacity of ECI must be increased to deal with the misuse of social media like WhatsApp and Facebook which are used to influence opinions during elections.
- **Neutrality on part of ECI**: ECI must be neutral in application of MCC across all the parties and candidates.

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1. Women-centric Welfare Schemes

News: Both Union and State Governments have launched numerous schemes for the welfare of women. The schemes have contributed to women empowerment; yet several inconsistencies in the approach limit their effectiveness.

What are the trends regarding women-centric welfare schemes?

- According to a report by CRISIL, the share of the economy (Gross State Domestic Product, GSDP) devoted to **social welfare expenditures** has increased from **1.2-1.3% in 2017-18** to **~1.6 % in 2022-23** in 11 States.
- Women have assumed great importance in the social protection architecture of the Governments. The Union and State Governments have launched targeted schemes for women which provide **free public transport**, **subsidized LPG**, **direct cash transfer** to cover education expenses etc.

Women-centric Welfare Schemes

- **Mahatari Vandan Programme**: It has been launched by the **Government of Chhattisgarh** in March 2024. It provides cash assistance of INR 1,000 per month to **married women above 21 years** of age. It has been envisioned to ensure economic development of women and provide them financial security.
- **Ladli Behna Scheme**: This had been started by the **Government of Madhya Pradesh** in January 2023. Under the scheme, INR 1,250 per month are bein given to **poor women beneficiaries**.
- **Kalaignar Magalir Urimai Scheme**: The scheme was launched in September 2023 by the **Government of Tamil Nadu**. INR 1,000 are transferred per month to **women above the age of 21** with a **household income of less than Rs 2.5 lakh**.
  - Similar schemes like the **Mahalakshmi** and the **Gruha Lakshmi** cash transfer programmes for women have been initiated in **Telangana** and **Karnataka** respectively.
- **Ujjwala Scheme**: The **Union Government** had started this scheme in May 2016 to provide **subsidized LPG gas cylinders to poor women**. The scheme has now been extended till February 2025.
- **PM Jan Dhan Yojana**: During Covid pandemic, the **Union Government** had transferred 3 instalments of INR 500 each to women holding **Jan Dhan Yojana** bank accounts.

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What is the significance of welfare schemes for women?

- Along with ensuring political dividends, women-centric welfare scheme are considered good economics.
- According to multiple studies, cash transfers to women have **increased the proportion of expenditure on items of basic consumption and education**.
- These benefits accrue to the entire households and have positive implications for **women's empowerment**.

What are the issues with women-centric welfare schemes?

- **Paternalistic Approach**: These welfare schemes are **not rights-based schemes**. They do not have any legal backing and are rather rooted in paternalism. Here, women are only seen as beneficiaries or recipients. This hinders their actual empowerment.
- **Consistency in Approach**: States with one political party domination do not have incentive to introduce fresh programmes or effectively implement existing schemes.

- In States, where there is stiff political competition and regular change of power, the **welfare schemes are rejigged or renamed** rather than improvised.
- **Lack of Inclusiveness**: The social protection architecture in India is not uniform. It's unbalanced as groups like the very young and the old, who do not constitute the majority voters, are often overlooked.

What should be the way forward?

- There is a need to adopt a **rights-based approach**. The schemes should have a legal backing, and should be designed and launched after deliberations in the Legislatures. This will ensure that the schemes are **focused on genuine empowerment of women**, rather than as **populist measures** launched just before the elections.
- The horizon of the schemes should be expanded. Simply providing cash may not be a pragmatic in the long-run. Schemes focused on **expanding access to education**, **skilling** and **promoting entrepreneurship** should be given greater priority. *Lakhpati Didi* scheme could serve as the basic template for future schemes.

2. **Improving Women's Labour Force Participation: Care Economy and Lessons from Japan**

News: Initiatives taken by the Japanese Government led to improvement in the women's labour force participation rate. The Japanese experience has several lessons that can be implemented in India.

What has been the experience in Japan regarding women's labour force participation rate?

- Japan has faced several challenges like low birth rates, a shrinking population, and stagnant economic growth.
- Under the leadership of former Prime Minister Shinzo Abe, several women-centric reforms were launched ('**womenomics**') under the broader economic reforms ('Abenomics'). The positive outcomes of the reforms are becoming apparent now.
- The women's labour force participation rate (WLFPR) in Japan has **increased by 10 percentage points**, rising from **64.9% in 2013** to **75.2% in 2023**. This marks the fastest growth in Japan's WLFPR in recent decades and stands as the highest among G7 countries over the past decade.
- It's estimated that this rise in women's labour force participation rate could **boost Japan's GDP per capita by 4% to 8%**.

What reforms were undertaken by Japan to enhance participation of women?

- **Investment in Care Economy**: The Government's investment in expanding day-care capacity from 2.2 million in 2012 to 2.8 million in 2018 has decreased day-care waiting lists. In 2023, Government announced an additional investment of US$ 26 billion for childcare measures from 2023 to 2026.
- **Rebalancing of Gender Norms**: From 2022, the Government has introduced greater flexibility in **paternity leave provisions** such as reduced notice periods, and allowing men to break up their paternity leave. This has resulted in boosting paternity leave uptake from 2% in 2012, to 17% in 2023.

What are the lessons for India?

- India can invest in **long-term public support** for **care infrastructure** and **services**, particularly **childcare**.
- India can enhance **paternal leave uptake among men** by adopting an **employer-led approach** that **dispels gender stereotypes** around care work. However, this would also require **change in people's mindsets** in the long-term.
- India can invest in various care services like **elderly care**, **domestic assistance**, and **long-term care** for those with high needs. This helps **decrease dependency** and taps into the growing market for elder care services e.g., Japan has collaborated with the private sector to invest in affordable senior living and care. With **India's**

elderly population expected to double by 2050, it can also make similar investments in elder care infrastructure.

Significance of Care Work

Care work, both paid and unpaid, is extremely important for any social system as well as the economy to survive.

- The indispensable aspect of care work was highlighted in the pandemic, when it became challenging to move ahead without the facilities of care staff.
- According to the ILO, doubling investment from 2015 levels would result in 117 million additional jobs opportunities by 2030.
- Because of the **relational nature of care**, such professions are **less probable to automation**.
- According to the ILO, countries which invest in a combination of childcare infrastructure and parental leave policies to offset the burden on women, have a **higher maternal employment to population ratio**.

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What policy measures are required?

- There is a need to adopt a **5-pillar strategy** to unlock business opportunities in India's care economy:
  o There should be **formulation of gender-neutral** and **employee-friendly paternity leave policies**.
  o Government should **provide subsidies** for availing/providing care services.
  o Public and private sector should **enhance investment in care infrastructure** and services.
  o There should be **skill development programmes** for care workers.
  o Government should pay attention to **quality assurance** for care services and infrastructure. *(Refer EPIC August 2022 (click) for Care Work and Care Economy and EPIC March 2022 (click) for Low Female Labour Force Participation Rate in India and EPIC March 2023 (click) for Issues with Measurement of Female Labour Force Participation Rate (FLFPR) in India).*

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3. Addressing Challenges Faced by Survivors of Gender-based Violence

News: The situation regarding gender-based violence remains alarming.

What is Gender-Based Violence?

- Gender-Based Violence (GBV) includes various forms like **intimate partner violence**, **domestic violence** and **non-partner sexual violence**.
- It encompasses **physical**, **sexual**, **psychological** and **economic violence** perpetrated against girls, women, and gender-diverse persons. *(Refer EPIC December 2023 (click) for Crime Against Women: Trend and Challenges).*

What are the challenges faced by GBV Survivors?

- Gender-Based Violence (GBV) survivors face **health challenges** like unwanted pregnancies, sexually-transmitted diseases including HIV and physical injuries.
- They experience **mental health issues** such as depression, anxiety, shame, and an increased risk of **self-harm** or suicide.
- The **fear of stigma**, **blame** and **legal issues** prevents them from **seeking medical care**, with only one in 5,000 survivors doing so.
- The **medical care system is not fully survivor-centric**, lacking in privacy and comprehensive support.
  o Survivor-centric care involves providing a **safe and private space for survivors** to get medical and mental health support, with their **consent** and **confidentiality maintained**.
  o Survivors often prefer confidential support but are confronted with **mandatory police reporting**, further deterring them from seeking help.

- Despite One Stop Centers and legal guidelines, there are still **gaps in providing** empathetic, accessible care.

Schemes For Survivors Of Gender-Based Violence

Another initiative, the **181-Helpline** is a universal number, created by integrating existing state helplines into a single number. Helpline operators are supposed to refer survivors to OSCs and other services, and also give them information about laws, schemes and government programs related to women empowerment and protection.

The **Beti Bachao Beti Padhao** [Save the girl child, educate the girl child] programme was launched to prevent sex selective abortion and ensure the survival, protection and education of girls.

One Stop Centres (OSCs) for survivors of violence operate as temporary shelters, and facilitate access to medical, legal and counselling services. Guidelines for the centres recommend that they should be located close to, or within a hospital, where health care practitioners can identify early signs and symptoms of gender-based violence.

Swadhar Grehs provide services to women in need of basic care such as food, shelter and clothing to women in distress and for those without any economic and social support.

The **Ujjawala scheme** is for preventing human trafficking and for the protection, rescue and rehabilitation of survivors of trafficking, and those who are at the risk of trafficking, with the involvement of local communities and awareness programs.

What should be done?

- **Legal reforms are needed** to allow survivors to seek and access medical care without mandatory police involvement, ensuring their privacy and agency.
- **Health system reforms** should focus on simplifying medical protocols at primary care levels, with referral pathways to higher care levels when necessary.
- **Survivor-centric care should be emphasized**, moving away from a system overly tied to forensic and legal procedures.
- **Training for all healthcare workers** is crucial to equip them with skills for providing empathetic, survivor-centric care. The medical and nursing curriculum should include comprehensive education on handling GBV cases.
- An **exclusive research ecosystem** is necessary to continuously improve health system responses to GBV.
- A **collaborative approach** involving medical academia, legal experts, policymakers and women rights activists is essential to drive these changes effectively.
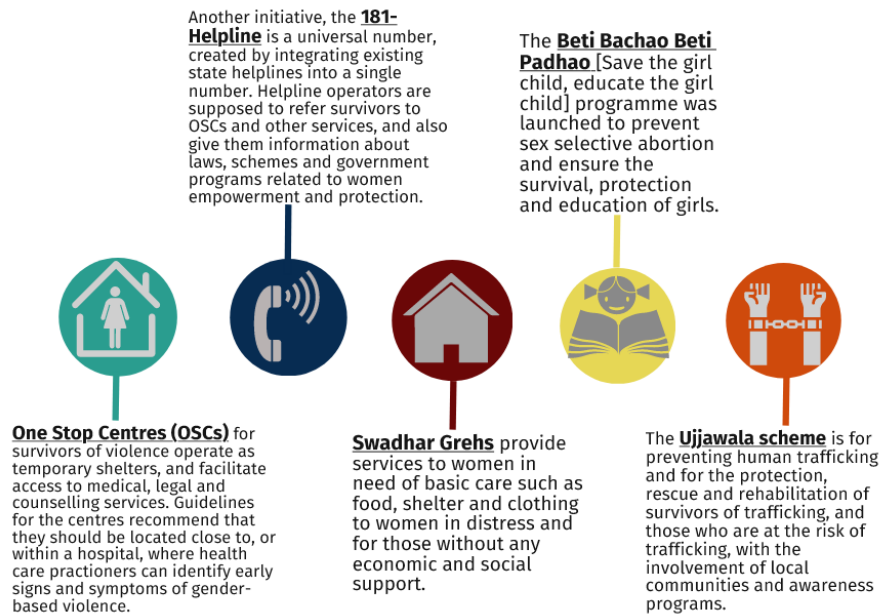
4. 'Climate Change is not Gender-neutral': Role of Women in Climate Action

News: Climate change has a disproportionate impact on women. There is a need to enable women to play a more proactive role in climate action and be the agents of change.

Why is climate crisis not gender-neutral?

- **Higher Risk in Disasters**: Women and children are 14 times more likely to die in disasters, as noted by the UNDP. This shows **gender disparities in vulnerability** and **mortality rates** during climate crises.
- **Increased Domestic Burden**: In India, climate-induced crop failures lead to **increased workload for women** in agriculture, alongside health issues and domestic violence. Men face social stigma from unpaid loans, but women bear the brunt of increased domestic responsibilities.
- **Gender-Based Violence**: Studies have linked natural disasters to a rise in gender-based violence. Women living in disaster-prone areas experience **more intimate partner violence** and **undernourishment**.
- **Health Risks in Heatwaves**: Women, especially pregnant women, are more vulnerable to heatwaves. Prolonged heat exposure leads to **higher risks of preterm birth** and other health complications.
- **Water Scarcity**: Climate change affecting water availability increases the burden on women, who typically manage water resources in households. This impacts their time for **productive work** and **health care**.

Why are women important in climate action?

- **Effective Agricultural Practices**: When given the same resources as men, women can increase agricultural yields by 20-30%. This shows their potential in enhancing food security under changing climate conditions.
- **Local Knowledge and Solutions**: Women, particularly from tribal and rural areas, have been at the forefront of environmental conservation. Their involvement can lead to more **effective**, **locally-relevant climate solutions**.
- **Empowering Women Benefits All**: Empowering women with knowledge, tools, and resources enables them to contribute significantly to climate action. This helps in creating **sustainable**, **community-based solutions**.
- **Gender-Specific Needs and Strengths**: Recognizing the unique needs and strengths of women in climate action plans leads to more comprehensive and effective strategies. It ensures a **gender-balanced approach** to **climate adaptation and resilience building**.
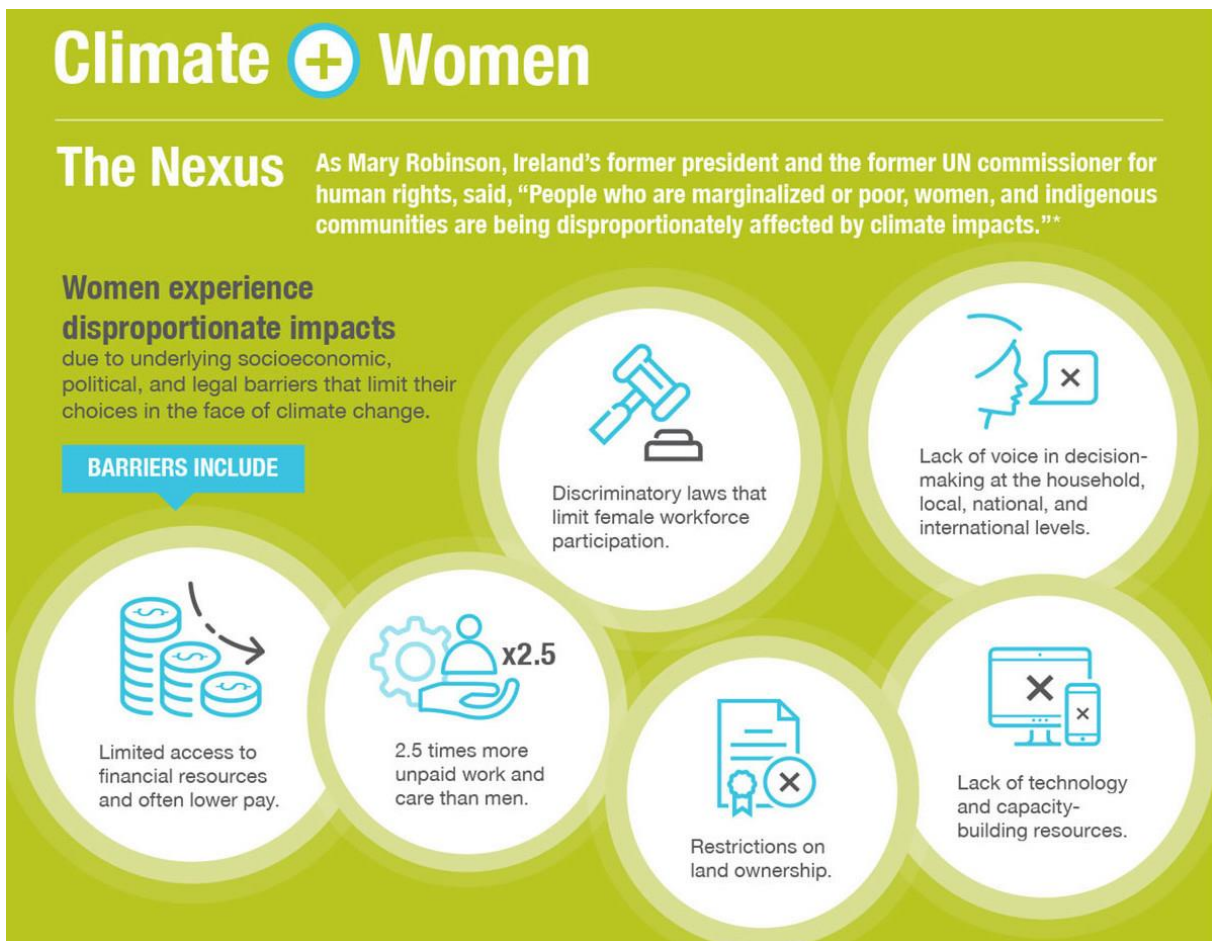
What should be done?

- **Adopt Gender-Inclusive Climate Policies**: A gender perspective should be integrated in **State Action Plans on Climate Change**, moving beyond stereotypes and **acknowledging women as key agents of change**.
  - Climate change actions need to be based on **consultation with women**, to build and incorporate their skills and knowledge, and to provide opportunities for improving health, education and livelihoods.
  - Women's issues, needs and contributions should be integrated across the planning and execution cycles of climate change policies and projects.

o Adaptive actions should **build asset base for women**. Access to assets determine **adaptive capacities**. Climate interventions should shore up **women's productive resources**, including land, education and access to credit.

o It should be ensured that mitigation, adaptation efforts **address sources of gender-based vulnerability**, gender inequality and poverty.

o Actions, technologies and strategies need to be **pro-poor** and **gender-responsive** in their design, implementation, monitoring and evaluation.

o Women should be given **greater representation** in climate action negotiations.

- **Empower Local Communities**: Enabling village-level decision-making and action, particularly empowering women in panchayats and Self-help Groups, can result in effective local climate resilience.

- **Prioritize Vulnerable Groups in Heatwave Protection**: Measures should be implemented to protect groups like outdoor workers, pregnant women, infants, and the elderly from extreme heat, as cities experience excess deaths during heatwaves.

- **Enhance Water Resource Management**: Traditional rainwater harvesting systems should be revitalized, as exemplified by the work in Tamil Nadu by the M.S. Swaminathan Research Foundation, to combat water scarcity.

- **Urban Planning for Heat Mitigation**: Strategies like painting roofs with reflective paint, improving tree cover, and enhancing green spaces should be adopted, as demonstrated by the **Mahila Housing Trust** in Udaipur, to reduce urban heat effects.

5. Falling Fertility Rate in India

News: A Lancet study has observed that the fertility is falling irreversibly in India and could dip to 1.29 by 2050. This points to a rapidly depleting working age population in India.

What is the trend of fertility rate in India?
National Family Health Survey (NFHS 2019-21) Data

- India's Total Fertility Rates (TFR) has reached 2.0 at the national level. The total fertility rate, was as high as 6 or more in the 1950s.
- The TFR is at 1.6 in urban areas and 2.1 in rural India.
- Bihar, Meghalaya, Uttar Pradesh, Jharkhand and Manipur remain the only states with fertility rates above the **replacement level** and the **national average**.

Total Fertility Rate (TFR) and Replacement Rate
TFR refers to the total number of children born or likely to be born to a woman (15-49 years) in her lifetime.

A TFR of 2.1 is known as **replacement level fertility rate**. It is the level of fertility at which a **population exactly replaces itself from one generation to the next**.

TFR lower than 2.1 children per woman indicates that a generation is not producing enough children to replace itself. This eventually leads to reduction in population.

Global Burden of Disease, Injuries and Risk Factors Study (GBD) 2021

- India's TFR which was 6.18 in 1950, reduced to 4.60 in 1980 and further declined to 1.91 in 2021.

- At a global level, the TFR has more than halved in the last 70 years, from around five children for each woman in 1950 to 2.2 children in 2021.

What are the reasons for falling fertility rate in India?

- **Family Planning and Welfare Programmes**: The family planning and welfare programmes, including the maternal and child-health related cash transfer induced to reduce fertility.

- **Improvement of Maternal and Child Health**: The substantial decline in the infant and maternal mortality rates guaranteed the survival of children and reduced the need to have more children.

- **Women Empowerment**: The rise of female literacy, improving women's participation in workforce, career consciousness, financial returns and economic independence have empowered Indian women to take decisions regarding the size of the family. They have gained more **reproductive autonomy**.

- **Behavioural Changes**: The behavioural changes due to campaigns such as '*Hum do Humare do*' and use of contraceptives have changed the mindset and nudged them to reduce fertility rates.

- **Reversal of Intergenerational Flow of Wealth**: Experts argue that due to reversal of intergenerational flow of wealth, parents do not receive much benefit from their children the way they used to. This has influenced their decision to have an additional child that would involve a substantial cost of bringing them up.
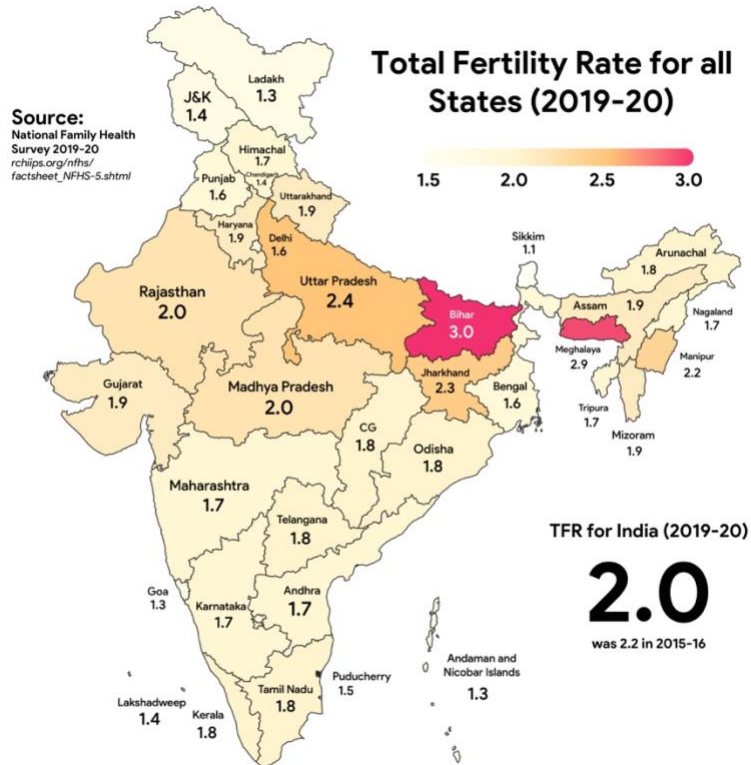
What is the significance of falling fertility rates for India?

- **Labour Productivity and Economic Growth**: The decline in population growth would increase the amount of capital resources and infrastructure available in per capita terms. A young skilled workforce would improve labour productivity, leading to accelerated economic growth.

- **Better Employment Opportunities**: A lower population will result in improved working conditions and higher wages for the workers. It would also lead to **reduction of wage discrimination for migrant workers**. It will also help reduce security concerns for migrants as population of destination region reduces.

Source: Indiatimes. The TFR has fallen consistently for both rural and urban areas since NFHS 1 (1992-93).

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- **Participation of Women**: Women will have to spend less time on childcare and improve their availability for work.
- **Quality of Service Delivery**: Falling fertility rate will help improve the quality of education, health and skilling services as the burden of population on resources decreases.
- **Environment**: Reduction of population will reduce the pressure on resources (land, water, minerals etc.) and help improve the status of environment.

What are the concerns associated with fertility rate being lower than replacement level?

- **Demographic Disadvantage**: With low fertility rates, the proportion of old and ageing population rises while that of productive workforce decreases. This reduces economic productivity in the mid- to long-term.
- **'Non-Developmental' Expenditure**: Drastic fall in fertility rate will lead to increase in Government's non-developmental expenditure on **pensions and subsidies**, due to increase in aged population and shrinking of workforce.

Source: The Economist. China's TFR had fallen below the replacement rate in the early 1990s. China's population has shrunk in absolute terms for the last two consecutive years.

- **Labour Shortage**: Substantial decrease in the working age population creates drastic shortage of labour force e.g., Japan is facing labour crisis and extreme shortage of workers even for basic services.
- **Loss of 'Brain Power'**: Young people form the 'brain pool' for entrepreneurship, innovation and the development of new technologies. Lesser proportion of young population reduces the capacity of innovation of the economy.
- **Social Imbalance**: The declining rate of fertility can lead to social imbalances due to gendered preference of having a male child. This can lead to skewed sex-ratios.

What should be the way forward?

- **Implement Scandinavian Model of 'Supporting New Families'**: The Scandinavian countries model of 'supporting new families' by providing affordable childcare, investment in healthcare and large-scale male-engagement initiatives to build gender equity, can be implemented in India.
- **Economic Policies**: Economic policies that stimulate growth and job creation, alongside social security and pension reforms will be essential in mitigating the impacts of declining fertility rate.
  - Focus should be on creating jobs outside agriculture. Low-paying jobs in the informal sector have low labour productivity. So focus should be on **skilling** and creating **productive employment opportunities**.
- **Managing Migration**: The policies for effective inter-state migration must be designed to offset the regional imbalances due to falling rates of fertility in southern states of India.
- **Balancing Domestic Responsibilities**: Men and women should share domestic responsibilities including childcare so that women can fulfil their career aspirations while having children and supporting their families.
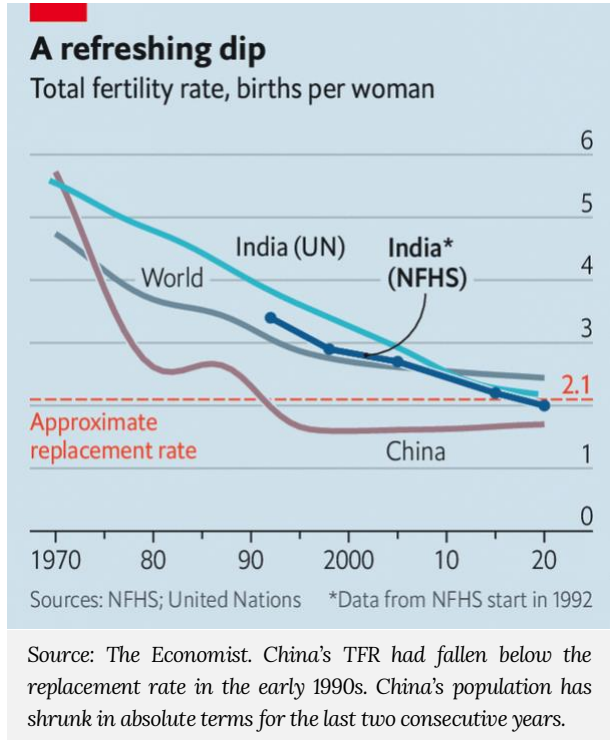
1. Impact of Laws and Judgments Applied with Retrospective Effect

News: The Judgments of Courts and amendments to laws with retrospective effect have deep economic consequences. The retrospective implementation of laws must be avoided.

What are some cases of retrospective application of Laws and Judgments?

- In 2012, the Government of India passed a law with retrospective effect to **check tax avoidance** by corporate entities.
  - The **Finance Act of 2012** had imposed taxes on deals executed after 1962 which involve transfer of shares in foreign corporations with existing assets in Indian jurisdictions. The law was targeted to **retrospectively tax Vodafone's acquisition of Hutchinson in 2007** for US$ 11 billion deal through an overseas holding company.
- In 2024, the Supreme Court declared the **Electoral Bond Scheme as unconstitutional**. However, it also ruled to make the details of donor public which were held confidential according to the law. Some critics have argued that the disclosure of donor details in a retrospective manner has **violated the privacy of the donors** (donations made when they were protected under Law).

What are the consequences of retrospective application of Laws and Judgments?

- **Economic Instability**: The retrospective tax law of 2012 led to **reduced private sector investment** and **job losses**. This indicates how such laws can create **economic uncertainty** and **discourage investment**.
- **Legal Uncertainty**: Applying laws retrospectively creates a **sense of unpredictability** about the legal environment. Individuals and businesses become unsure if their **past actions might suddenly be deemed illegal**.
- **Loss of Confidence**: The retrospective application likely erodes public confidence in the legal system. The possibility of criminalization of past actions impacts choices for the future.
- **Questioning Judiciary's Role**: It raises questions about the judiciary's accountability and its impact on economic and legal stability.
- **Violating Individual Rights**: It can lead to the **violation of individual rights**, as actions that were legal at the time they were taken are **judged illegal in hindsight**. This was a concern with the invalidation of the electoral bonds in 2024.

What should be done?

- **Ensure Judicial Prudence**: The Judiciary's decision on electoral bonds in 2024 **overlooked practical consequences**, like returning to less transparent political funding methods. The Courts should **balance legal principles with practical outcomes**.
- **Enhance Transparency in Political Funding**: The electoral bond scheme, though flawed, was a step towards transparency compared to the previous anonymous system. A revised version of the scheme, addressing the shortcomings, could improve transparency in political funding.
- **Strengthen Checks and Balances**: Like the Government (accountable to voters and oversight bodies), the **Judiciary also needs mechanisms for accountability**.

2. Electoral Candidates' Right to Privacy

News: The Supreme Court has held that candidates need not disclose every piece of information and possession in their election affidavit unless it is substantial in nature.

What has the Supreme Court ruled?

- The SC has held that a candidate's decision to keep private those details which do not pertain to or affect their **suitability for public office** should not be considered as a '**corrupt practice**' under **Section 123 of the Representation of People Act, 1951**.
  - o Such non-disclosure would not amount to a 'defect of a substantial nature' under **Section 36(4) of the 1951 Act**.
- The Supreme Court observed that it is not necessary for a candidate to **declare every item of movable property** that he or his dependent family members owns.
  - o Items which constitute a **sizeable asset** in itself or reflects upon the candidature, in terms of his lifestyle, must be disclosed.
- The Court also highlighted that candidates must declare their assets to **enhance democratic participation** and ensure voters have the necessary information to make **informed choices**.
- It recognized the **voters' right to essential information about candidates** but also noted the importance of **balancing this right with the candidates' privacy rights**, suggesting that **disclosure of every personal detail is not necessary**.

What are the existing legal provisions?

- **Representation of People Act, 1951**: According to **Section 33** of the Act, all contesting candidates need to file their nomination paper for elections along with an affidavit in a prescribed format.
- **The Supreme Court Judgment**: The Supreme Court in *Association of Democratic Reforms (ADR) Vs Union of India (2002)* held that **voters have the right to know about the criminal antecedents**, **income** and **asset details of the candidate** and **his/her dependents**.
  - o This resulted in **Section 33A** being added to the 1951 Act that requires details of criminal antecedents to be part of the election affidavit.
- According to **Section 125A** of the RP Act, if a contesting candidate fails to furnish required information; gives false information or conceals any information in the nomination paper or affidavit then he shall be liable to be punished with **imprisonment up to 6 months or fine or both**.

What are the concerns associated with the existing laws?

- **Disqualification on Trivial Grounds**: The election of an independent candidate from Arunachal Pradesh was set aside by the Gauhati High Court because he failed to declare 3 vehicles as assets in his election affidavit. However, the Supreme Court reversed the decision and held that "*non-disclosure of information that is not substantial cannot be considered an attempt to unduly influence the voters*".
- **Circumvention of Rule**: Many contesting candidates circumvented the requirement of rule 4A by leaving certain columns blank and filing incomplete affidavits. This prompted Supreme Court in *Resurgence India Vs EC (2013)* to issue an order that **all columns need to be filled appropriately**.

What should be the way forward?

The Law Commission in its **244th Report on 'Electoral Disqualifications'** (2014) and the ECI in its memorandum on '**Electoral reforms**' submitted in 2016 had provided certain recommendations.

- If someone is found guilty of submitting a false affidavit, they must face at least 2 years in prison and be disqualified from running for office. The trials in these cases must be conducted daily.
- Experts have suggested that persons convicted by a competent court with offences punishable by imprisonment of at least 5 years should be **debarred from contesting in the elections**.
- The Supreme Court's order in *Public Interest Foundation Vs Union of India (2018)* that directed candidates as well as political parties to issue a declaration about criminal antecedents, at least 3 times before the

election, must be strictly implemented. This would enable a discerning voter to exercise a well-informed choice.

3. The Government Notifies PIB Fact-Check Unit (FCU)

News: The Government of India has notified the PIB's Fact-Check Unit (FCU) under the Ministry of Information and Broadcasting.

What is the PIB's Fact-Check Unit (PIB-FCU)?

- PIB's Fact-Check Unit was established in November 2019 with a stated objective of acting as a **deterrent to creators and disseminators of fake news and misinformation**.
- It provides people with an easy avenue to **report suspicious and questionable information** pertaining to the Government of India.

Functions of the PIB-FCU

- **Check Misinformation**: The PIB-FCU has been mandated to **counter misinformation on Government policies**, initiatives and schemes either *suo motu* or under a **reference via complaints**.
- **Monitoring and Response**: It actively **monitors, detects**, and **counters disinformation campaigns**, ensuring that false information about the Government is **promptly exposed and corrected**.
- **Removal of Fake Content**: When this unit flags a piece of content as fake, **social media platforms** will have to take it down as part of their **due diligence** requirement under the **IT Rules**.
  ○ The internet and telecom service providers will have to **block the web link** of a particular fake news information.

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What is Government's rationale for notifying PIB-FCU)?

- **Checking Fake News**: This fact-checking body can help to address the issue of fake news and mis-information on online platforms, which can potentially cause harm to the society.
- **Improved Accountability of Social Media Intermediaries**: The notification of PIB-FUC will increase accountability of social media intermediaries like Meta, X etc. The platforms will now be required to remove false and misleading content.
- **Enhancement of Cybersecurity**: FCU can improve the cybersecurity by preventing the misuse of online platforms for illegal or harmful activities e.g., it can help in identification and removal of deepfakes.
- **Prevention of Hate Speech and Violence**: The FCU seeks to ensure compliance with Indian laws like IT Act and laws related to national security. This helps to prevent the misuse of social media platforms and other digital media outlets to **incite violence or spread hate speech**.

What are the concerns associated with the FCU?

- '**Chilling Effect**' **on Freedom of Expression**: There are concerns that FCU and its power to censor content could have a chilling effect on free speech/expression provided under **Article 19(1)(a)**. People may be hesitant to express their opinions online for fear of being censored or facing legal consequences.
- **Potential for Misuse**: The FCU's power could be misused by the Government to **silence dissenting voices** or criticism of Government actions. This could have serious implications for **democracy and human rights**.
- **Conflict of Interest**: The role played by the FCU has a significant conflict of interest as it plays the role of judge, jury and executioner.

- **Lack of Clarity**: There is lack of a clear definition of **what types of information qualify as** '**fake or false or misleading**'. This lack of clarity creates ambiguity and can lead to **arbitrary censorship** by the Government.
- **Bypassing Legal Procedures**: The notification of a fact-checking unit with powers to issue directions to take down content, short-circuits the procedures, safeguards and conditions laid out in *Shreya Singhal v. Union of India* and **Section 69A of the IT Act**. The judgement extends the right to free speech into the online space.

What should be the way forward?

- **Building Consensus**: Opposition political parties have criticised the notification of FCU. The Government must build consensus by assuring them of 'credible' functioning of the body.
- **Transparent and Participatory Process**: The Government should work with media organizations, civil society and other stakeholders to develop a more **transparent and participatory process** for determining the content that can be considered fake or misleading.
- **Independent/Autonomous Body**: The Government should ensure that anybody tasked with fact-checking is independent and non-partisan, with clear guidelines for decision-making.
- **Adherence to Legal Guidelines**: The Government should ensure that any takedown requests are made in accordance with the procedures and safeguards laid out in *Shreya Singhal v. Union of India* or under **Section 69A of the IT Act**. These define and restrict the conditions under which Government can take down online content.

4. Ensuring Health Equity in India

News: The World Health Day is observed on April 07 every year. The theme of this year was "My Health, My Right" highlighting the significance of health equity.

What is the meaning of Health Equity?

- The WHO notes that Health Equity is achieved when **everyone can attain their full potential for health and well-being**.
- Health Equity is achieved when **people from all groups** (whether those groups are defined socially, economically, demographically, or geographically or by any

Determinants of Health Equity/Inequities

Health Equity is determined by the Socioeconomic and Political Context.

Socioeconomic and Political Context
- Governance
- Macroeconomic Policies
- Social Policies (*Labour Market, Housing, Land*)
- Public Policies (*Health, Education, Social Protection*)
- Cultural and Societal Values

Socioeconomic Position
- Social Class
- Gender
- Ethnicity
- Education
- Occupation
- Income

Social Deteminants
- Material Circumstances (*Living and Working Conditions, Food availability etc.*)
- Behavioral & Biological Factors
- Psychosocial Factors

other dimensions of inequality) can **access health-care services without discrimination**.
- Health and health equity are determined by the conditions in which people are born, grow, live, work, play and age, as well as biological determinants. Social norms, political, legal and other structural determinants play a critical role in health equity.
- In India, the **National Health Policy** talks about **Universal Health Coverage** as one of its goals. Universal Health Coverage (UHC) signifies **universal accessibility** to **comprehensive**, **high-quality health services**, without **financial hardship**. UHC can be a crucial lever to **achieve Health Equity** in India. (*Refer EPIC May 2023 (click) Universal Health Coverage in India*).

What are the challenges before India to attain health equity?

- **Health Disparities**: According to the 2011 census, more than 17% of India's metropolitan areas are slums, which face **significant health disparities**. According to the Indian Council of Medical Research, infectious diseases like tuberculosis are **1.5 times more prevalent** in slums compared to non-slum areas.

- **Social discrimination**: According to the NFHS-5 (2019-21) data, Scheduled Castes and Scheduled Tribes experience higher child mortality and lower immunization rates. Further, 59% of poor women suffer from anaemia which is almost double the rate in the higher income groups.

- **Rise of Non-communicable Diseases (NCDs)**: NCDs account for more than 60% of all fatalities in India. According to Public Health Foundation of India, economic effect of NCDs could cross US$ 6 trillion by 2030.

- **Paucity of Doctors**: WHO data indicate that India has only 0.8 doctors per 1,000 people, which is below the advised ratio (1:1000). Rural areas have an acute shortage of doctors.

- **Right to Health**: India does not have a Constitutional provision for the **fundamental right to basic health**. The Constitutional right to health is critical to break the vicious cycle of poverty and poor health.

- **Issues of Migrant Workers**: India has a large migrant population. According to UN-Habitat/World Bank, 49% of the urban population lives in urban slums. Urban slums do not have access to clean drinking water and sanitation, which are critical determinants of health.

5-A Challenges in Healthcare

Accountability is poor. Instances of poor services are not adequately addressed.

Absence of human resources (Doctors, nurses, pharmacists) in the rural areas. Disparities exist among States also.

Acsess to healthcare services especially in rural and remote areas is poor. Availability of primary health centres within 5km still poor in many areas.

Affordability is poor with high ratio of out-of-pocket expenditure. Poor unable to afford expensive services in private service providers.

Awareness is poor especially about maternal, reproductive and mental health. Rising Lifestyle diseases.

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What should be the way forward?

- **Ensure Portability of Health care Services**: Access to health care should be made more mobile and portable for migrant workers.

- **Minimize Out-of-pocket Expenditure**: There is a need to **simplify reimbursement processes** for reducing out-of-pocket expenditure. The design of cash transfers and reimbursement in India's public healthcare system should be adapted according the **needs of migrant and marginal communities**.

- **Inclusive Health Systems**: In order to overcome language barriers and diversity in the urban context, there is a need to integrate health management information system dashboards with both public and private systems. This will make the health system more inclusive to all sections of society.

- **Strengthening Primary Health Care**: There is a need to strengthen and implement **community-based primary healthcare** in urban and peri-urban areas with seamless referral systems.

- **Health Literacy**: In order to achieve the target of Universal Health Coverage and health equity, there should be more focus on health literacy. India should **include health education in National Health Mission**. This would **enable people to make educated decisions about their health**.
- **Leveraging the Role of NGOs**: Organizations with a strong local presence are essential for ensuring health equity. In this context, it is important to leverage the role played by the NGOs and civic societies because they **engage directly with the grassroots community**. They can help in tailoring health initiatives that are **culturally sensitive** to the community's unique needs.
- **Evidence-based Practices**: Research institutes and academic institutions can offer insights into health inequalities and the efficacy of health interventions. This will assist in creating evidence-based practices.

5. One Health Approach and the National One Health Mission

News: The National One Health Mission adopts the One Health Approach for better management of diseases affecting humans, animals, and the environment.

What is the National One Health Mission?

- The 'National One Health Mission' is an **integrated approach to manage diseases** affecting humans, animals, and the environment.
- The Mission will involve **co-ordination among 13 Ministries and Departments**, including Health, Animal Husbandry, Science & Technology, Biotechnology etc.
- The Mission will develop strategies for **disease surveillance**, **research**, and **response to human and animal diseases**.
- The Mission will focus on diseases affecting both humans and animals, such as COVID-19, foot and mouth disease, and lumpy skin disease etc.
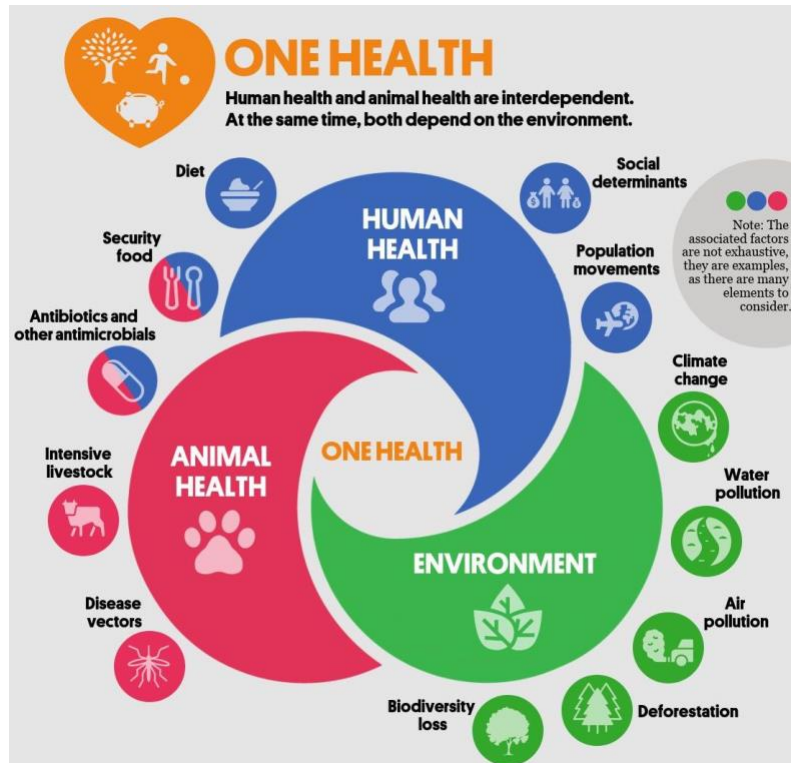
What is the importance of One Health Approach?

- It is a collaborative, multisectoral, coordinated, and transdisciplinary approach. It recognizes the interconnection between **people**, **animals**, and the **environment**.
  - **More than two-thirds of existing and emerging infectious diseases are zoonotic**. Experts believe that there are more than 1.7 million viruses circulating in wildlife, and many of them are likely to be zoonotic. One Health Approach is essential to **check transmission** of diseases across species and for **integrated disease management**.
  - It addresses diseases like COVID-19, which **affect multiple species**, showing **the inter-connectedness of health and diseases** between humans and animals.
  - Zoonotic diseases place a **heavy burden on the economy**. The WHO estimates that rabies (also a zoonotic disease) costs the global economy ~US$ 6 billion annually.

- One Health Approach calls for working at the **local, regional, national, and global levels** with the goal of achieving optimal health outcomes.
  - Outbreaks of viral diseases like Nipah virus, Ebola, SARS show the **trans-boundary nature of diseases**. One Health Approach promotes **global coordination** to check outbreaks of pandemics.
  - One Health approach focuses on **establishing a global network of** '**One Health**' **institutes** for unified disease response strategies.
- It extends beyond diseases to **address issues like antimicrobial resistance**, **food safety**, and **climate change**.
- One Health was **endorsed during India's G20 Presidency**, highlighting the need for international collaboration in health surveillance.

What initiatives have been taken under the 'National One Health Mission'?

The Government of India has **launched the** '**National One Health Mission**', aiming to synergize efforts in managing diseases that impact humans, animals, and the environment.

- The Government has established the **National Institute for One Health in Nagpur**, serving as a central hub for coordinating both national and international activities related to health management.
- The **Department of Biotechnology** had launched India's first consortium on One Health in October 2021. It brings together 27 organizations from several Ministries and plans to assess the burden of five transboundary animal diseases and 10 select zoonotic diseases.
- The Government had established a **National Standing Committee on Zoonoses** in the 1980s.
- The **Department of Animal Husbandry and Dairying** (DAHD) has launched several schemes to mitigate the prevalence of animal diseases since 2015 e.g., under the **National Animal Disease Control Program**, INR 13,343 crore have been sanctioned for Foot and Mouth disease and Brucellosis control.
  - DAHD has partnered with the Ministry of Health and Family Welfare in the **National Action Plan for Eliminating Dog-Mediated Rabies**.
- Efforts are being made to revamp programs that focus on **capacity building for veterinarians**.
- The Government is also upgrading the **animal health diagnostic system** such as Assistance to States for Control of Animal Diseases (ASCAD).

What should be done?

- The **disease management should be enhanced** across human, animal, and environmental sectors by efficiently using the national network of **high-risk pathogen laboratories**, including **BSL 3** and **BSL 4 labs**.
- **Application of advanced technologies** such as AI and machine learning can be employed to **enhance epidemiology and data analysis**. This approach can be modelled on the success of **genomic surveillance** from wastewater, as demonstrated during the COVID-19 pandemic.
- The focus should be to **increase investments and augment awareness generation** towards the 'One Health' approach.

> **Biosafety Levels (BSL)**
> Biological Safety Levels (BSL) are a **series of protections** specific to **autoclave-related** (sterilizers) **activities** that take place in **biological labs**. Biosafety levels are **individual safeguards** designed to **protect laboratory personnel**, as well as the **surrounding environment** and **community**. BSL are classified from 1 (lowest) to 4 (highest, most stringent).
> The levels are determined by factors like **Risks related to containment**, **Transmissibility**, **Severity of infection**, **Nature of the work** conducted within the lab, **Origin of the microbe**, Agent in question and **Route of exposure**.

- The existing **animal health and disease surveillance systems** must be integrated.
- **Promotion of active collaboration** between government agencies, NGOs, academia, the private sector, and citizens can advance the 'One Earth, One Health' initiative, aiming for inclusive health management.

6. Provisions Related to the Living Will

News: 30 people in Thrissur (Kerala) have executed living wills recently. The SC had legalized living wills in 2018 to allow terminally ill patients to withdraw treatment and die with dignity.

What is a Living Will?

- It is a legal document that **outlines preferences for medical treatment for terminally ill patients** who are unable to communicate their decisions, particularly regarding life-sustaining measures and end-of-life care.

What is the procedure for executing living will?

The SC has streamlined the procedure which was a little complicated earlier.

- Living wills must be handed over to a **competent officer** in the local government after being signed in the presence of 2 witnesses and attested before a notary or a gazette officer. The competent officer will serve as a custodian of living will.
- The decisions on withdrawing treatment are certified by **Primary Medical Board** and then confirmed by **Secondary Medical Board**. Secondary Board should have a doctor nominated by Chief Medical Officer (CMO).
- According to the Supreme Court, if the patient does not have a living will then the Primary Medical Board will have to obtain the written consent of the '**next of kin**' for withdrawing/withholding treatment.

What are the issues in the implementation of living will in India?

- **Lack of Custodians for Living Wills**: State Governments have not designated custodians for living wills e.g., a PIL had to be filed in the High Court of Bombay to appoint custodians across the State recently.
- **Absence of Protocol**: The National Health Authority has not produced protocols that could allow living wills to be authenticated through digital health records.
- **Complicated Procedure:** According to the guidelines, the secondary board must have a doctor nominated by the CMO. This implies that hospitals cannot have secondary medical boards unless the CMO has nominated a doctor in the hospital where the concerned patient is admitted. Terminally ill patients, even those who have made living wills, are not able to make critical decisions about medical care.
- **Ambiguous Guidelines**: Indian law does not have a clear definition for '**next of kin**'. There is lack of clarity when any **family members disagree** about the best course of action. Officials might refrain from taking decisions in such cases.
- State Governments have shown reluctance in implementing the procedure.

What should be the way forward?

- The **Union Government can bridge the gap** in expertise by developing **model orders** and **protocols**.
- These protocols can provide the State Governments with the necessary confidence and the **guidance to effectively implement the Supreme Court Judgment**.

7. India's Evolving Foreign Policy and Challenges

News: India's foreign policy has witnessed a significant shift in the last one decade. The changing geopolitics, however, poses several new challenges.

What is the new focus of India's Foreign Policy?

- **Strategic Islands and Maritime Regions**: India is emphasizing strategic importance of islands and maritime territories, like the development of Andaman and Lakshadweep, Mauritius, Maldives, Papua New Guinea etc.
- **Adopting the Indo-Pacific Framework**: India has embraced the Indo-Pacific concept, moving away from viewing it as an American plot. This shift is a response to tensions with China and aligns with the QUAD.

- **Increased Focus on Eurasia and Europe**: At the same time, India has shown keen interest in Eurasia by joining the **Shanghai Cooperation Organisation** as full member in 2017. There's also a growing engagement with Europe, as seen in increased diplomatic visits and a free trade agreement with the EFTA countries.
- **Broadening Relations with the Middle East and Africa**: India is strengthening ties with the Middle East, including partnerships with UAE and Saudi Arabia, and showing a **naval presence in the Red Sea region**. This reflects a more integrated approach towards the Middle East, Africa, and the eastern Mediterranean.
- **Shifting Attention from South Asia**: With the decline of SAARC, India's focus is moving from South Asia to **sub-regional** and **trans-regional cooperation**, such as with the Bay of Bengal nations.
- **New Focus on Zomia and Khorasan**: India is looking towards new regions like Zomia (South-east Asian highlands including Myanmar, Thailand, Cambodia, Laos, Vietnam etc.) and Khorasan (Afghanistan, parts of Central Asia and Iran) due to geopolitical changes on its eastern and western borders.

What is India's new approach to international relations?

- **Non-Western Identity**: India is positioning itself as **non-Western**, **not anti-Western**. This contrasts with other BRICS nations like Russia and China, which often appear more opposed to Western perspectives.
- **Flexible Alliances**: India advocates for **flexible international relationships**, avoiding alignment against the West despite being a part of BRICS.
- **Stronger Ties with the West**: India is strengthening its relationships with Western nations, including the US. The relationship got special boost post the PM's State visit to the US in 2023.

How have global dynamics influenced India's foreign policy?

- **China's Rise and US Alignment**: The increasing influence and territorial disputes with China have led India to strengthen its ties with the United States, especially after the Galwan clash in June 2020.
- **Economic Engagement with the Middle East**: India's active involvement in Middle Eastern politics, evidenced by its participation in the **I2U2 group**, demonstrates a strategic interest in the region. Additionally, economic initiatives like the **India-Middle East-Europe Economic Corridor**, announced at the G-20 summit, further highlight **India's expanding economic engagement in the Middle East**.
- **Reorientation from Traditional Allies**: With Russia's diminishing influence in global politics and China's assertiveness, India is visibly shifting its foreign policy, moving away from its **traditional reliance on Russia**.

What challenges does India face in shaping its new foreign policy?

- **Relationship with China**: India's deteriorating relations with China, marked by several military crises, pose a significant challenge, especially in adopting the Indo-Pacific strategy and **managing regional dynamics**.
- **Balancing Ties with Russia and the West**: India's approach to Eurasia is changing, influenced by the escalating conflict between Russia and the West and the strengthening alliance between China and Russia. This evolution presents India with the challenge of **maintaining a balance in its relations with both sides**.
- **Economic Engagement with Europe**: While India is increasing its diplomatic and trade ties with Europe, successfully negotiating and finalizing a comprehensive free trade agreement remains a complex challenge.
- **Internal Challenges in South Asia**: The failure of SAARC and changing dynamics with Pakistan require India to adapt its approach in South Asia, focusing more on sub-regional cooperation.

8. Katchatheevu Island Dispute between India and Sri Lanka

News: The controversy surrounding the Katchatheevu Island dispute has resurfaced in the run-up to the Lok Sabha elections.

Historical Evolution of the Dispute

Timeline	Status
October 1921	• Both Madras and Ceylon Governments claimed the island during the talks for delimitation of Palk Strait and the Gulf of Mannar. • **Ceylon's (Sri Lanka) Claim**: It claimed sovereignty on the ground that the Portuguese had occupied the island during 1505-1658 CE and had exercised jurisdiction over the islet. • **Madras (India's) Claim**: The erstwhile Raja of Ramnad (Ramnathpuram) had possession of the island. The British, citing the traditional claims of the Ramnad zamindari, attached it to the Madras Presidency.
Till 1947	• The *zamin* of Ramnathpuram collected taxes till 1947. It was taken over by the State Government following the **Zamindari Abolition Act**.
Post-Independence	• The dispute over the control of the island broke out again after Independence **over fishing rights** around the island.
1974	• Under the 'Indo-Sri Lankan Maritime Agreement', the Government of India **agreed to cede the Katchatheevu island to Sri Lanka**. It was aimed to settle the discord and strengthen ties with Sri Lanka. • Most of the Opposition parties opposed the agreement and staged walk-outs in the two Houses.
1991	• The Chief Minister of Tamil Nadu urged the Union Government to **retrieve the island** and restore the fishing rights for Tamil Fishermen. • The **Tamil Nadu Legislative Assembly adopted a resolution** demanding retrieval of Katchatheevu.
2008-2013	• Major political parties of Tamil Nadu, approached the SC to declare the Katchatheevu Agreements of 1974 and 1976, as **null and void**.
2014	• The Union Government informed the SC that the Katchatheevu islet is a sovereign property of Sri Lanka. • The 1974 and 1976 Agreements between India and Sri Lanka do not confer any fishing rights on fishermen from India.
2022	• The Union Government, while referring to the two Agreements of 1974 and 1976, pointed out in its reply in the Rajya Sabha that **Katchatheevu lies on the Sri Lankan side of the India-Sri Lanka International Maritime Boundary Line**. • It added that the matter was sub-judice in the Supreme Court.

Where is Katchatheevu island located?

- It is a small island (~285 acres in size) located in the **Palk Strait**, between India and Sri Lanka. The island lies **33 km northeast of Rameswaram** and about 62 km southwest of Jaffna.
- The island is **uninhabited**, as there is **no source of drinking water on the island**. The island originated from volcanic activity during the 14th century.
- The island's sole structure is **St. Anthony's Church**, built in the early 20th century. Every year, during a festival, Christian priests from India and Sri Lanka jointly conduct services, drawing pilgrims from both countries.

What are the provisions of the Maritime Boundary Agreement?

- Under the 1974 Agreement, each country shall have **sovereignty and exclusive jurisdiction** and control over the waters, the islands, the continental shelf and the subsoil, **falling on its own side** of the boundary.
- Only **navigational rights** of the vessels of Sri Lanka and India over each other's waters have been preserved.

Allowed Activities for Indian Fishermen	Prohibited Activities for Indian Fishermen
• Resting and drying the nets. • Visit the annual St. Anthony's festival without the need of visa.	• The fishing vessels and fishermen of India shall **not engage in fishing** in the territorial sea, historic waters, and the Exclusive Economic Zone of Sri Lanka.

- Under the 1976 Agreement, each Party shall respect rights of navigation through its territorial sea and exclusive economic zone in accordance with its laws and regulations and the rules of international law.

What are India's concerns associated with the Katchatheevu Island dispute?

- **Detaining of Indian Fishermen**: Indian fishermen from Tamil Nadu often face punitive action from the Sri Lankan authorities. At least 6,184 Indian fishermen have been detained and 1,175 Indian fishing vessels have been seized in the last 20 years.
- **Livelihoods of Traditional Fishing Community**: The Katchatheevu Island controversy has restricted the mobility of traditional fishing communities in coastal waters. This has made it difficult for these fishing communities to sustain their livelihood, impacting the economic stability of these communities.
- **Threat to the Socio-cultural Fabric**: This dispute has threatened the cultural and social fabric of the Indo-Sri Lankan region. Fishermen associations in Ramnathpuram district boycotted the annual two-day festival at St. Anthony's Church, which draws pilgrims from both countries.
- **Geostrategic Significance**: The island has assumed significant geostrategic significance in light of growing Chinese influence in the Indian Ocean region.
- **Undermining of Co-operative Federalism**: The transfer of Katchatheevu has led to opposition particularly from Tamil Nadu. The local political parties claim that the opinion of the State Government was not taken before ceding the territory to Sri Lanka.

What are the implications of the dispute?

- **India-Sri Lanka Relationship**: The re-emergence of the Katchatheevu Island dispute would deleteriously impact the improving India-Sri Lanka ties, after the Sri Lankan economic crisis.
- **India's 'Big Brother' Attitude**: The controversy will damage India's credibility in the neighbourhood and reinforce India's alleged Big Brother attitude as perceived by its neighbours. Reopening of old agreements, would set a bad precedent.
- **Damage the Architecture of Agreements**: The controversy will damage India's architecture of boundary agreements, if there is a change in the original understanding. It might raise concerns for Bangladesh which has finalised land boundary agreements with India.
- **Growth of Chinese Influence**: Any antagonistic actions taken by India on the finalised and operational agreements, would only propel the growth of Chinese influence in India's neighbourhood.

What should be the way forward?

- **Refrain from Political Rhetoric**: The political parties must limit the rhetoric for the sake of national interests. Security of the nation and friendly relationships with neighbouring countries should have higher priority over narrow domestic political interests.
- **No Backtracking on the Finalised Agreements**: Controversy regarding settled Agreements should be avoided as the talks of backtracking from a signed agreement leads to distrust among India's neighbours.

- **Improve Relations with Neighbours**: India must look to improve its relations in the neighbourhood. The gains made due to neighbourhood policy should not be lost.

9. 75 Years of NATO

News: NATO has completed 75 years of existence in April 2024. Since its formation, NATO has undergone several rounds of expansion. NATO is facing new challenges amidst global uncertainties.

What was the rationale behind the creation of NATO?

- It is an **intergovernmental military alliance** founded in April 1949, with 12 members. The 12 founding members signed the **Washington Treaty**, which was based on the **Article 51 of the Charter of the United Nations**.
- **Article 51** of the UN Charter reaffirms the inherent right of independent States to **individual and collective defence**.
- It was formed during the Cold War as a **deterrent against the expansion of the USSR**.
  - NATO was formed to counter the risk that the **USSR would seek to extend its control of Eastern Europe** to other parts of the European Continent.
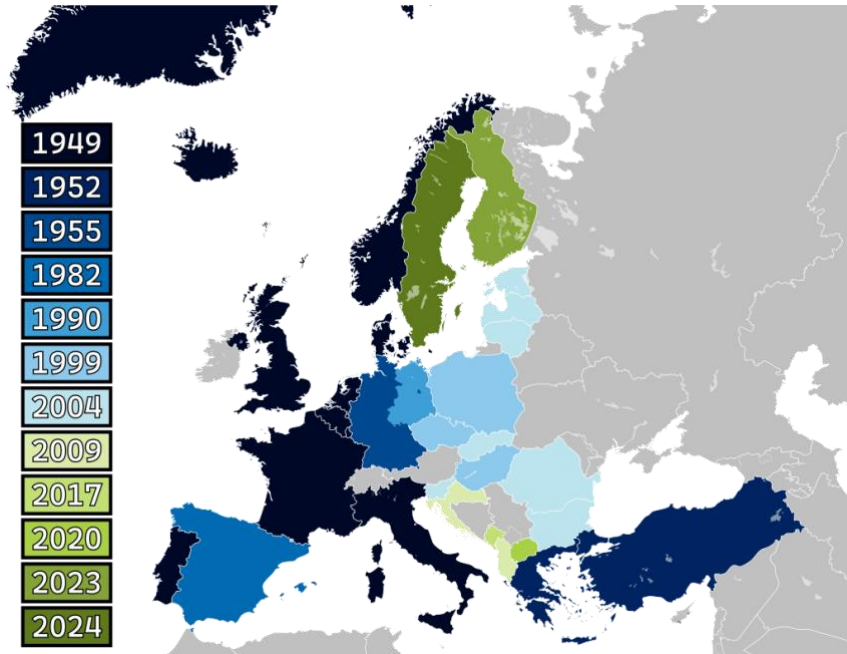
*The 12 founding members were Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, Norway, the Netherlands, Portugal, the UK and the US. The new members include Greece and Turkey (**1952**); West Germany (now Germany, **1955**); Spain (**1982**); the Czech Republic, Hungary, Poland (**1999**); Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia, and Slovenia (**2004**); Albania and Croatia (**2009**); Montenegro (**2017**); North Macedonia (**2020**); Finland (**2023**); and Sweden (**2024**).*

What have been the achievements of NATO in the last 75 years?

- **Collective Security**: During the Cold war era, NATO helped the European countries in securing themselves against actual or potential dangers emanating from the erstwhile USSR.
- **Controlling Militarized Conflicts**: NATO has played a key role in containing and controlling militarised conflicts in Central and Eastern Europe by actively promoting stability within the former Soviet bloc.
- **Stabilization of Western Europe**: NATO has helped in the stabilization of Western Europe, whose States had been bitter rivals in the past e.g., the lasting peace between France-Germany.
- **Crisis Management Operations**: NATO has provided support to other countries in their crisis management operations. These range from aid operations such as **delivery of relief supplies** after the 2005 Kashmir Earthquake to **counter-terrorism operations** in the Mediterranean and the coast of Somalia.
- **Invocation of Collective Security**: Article 5 of the North Atlantic Treaty has been invoked only once so far following the September 11, 2001 attacks on the US. NATO forces were sent to Afghanistan and deployed for nearly 20 years.

Objectives of the NATO

- **Collective Defence**: NATO's primary objective is **collective defence**, as outlined in **Article 5** of the **Washington Treaty** (North Atlantic Treaty). The concept of Collective defence stipulates that an attack on any of the members is an attack on all of them and demands **collective action**.
- **Political Cooperation**: It's objective is to **promote democratic values** and enable the members to consult and cooperate on **defence and security related issues** to solve problems, **build trust** and **prevent conflict**.
- **Military Assistance**: It is also mandated to provide **military assistance** and undertake **crisis management operations**, in case of diplomatic failures in dispute resolution.

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What are the challenges being faced by NATO?

- **Funding Challenges**: Only a few members have met the defence spending target of 2% of their GDP, pledged after Russia's annexation of Crimea in 2014. At present, the US accounts for over 67% of the alliance's defence spending, which is considered unfair by the some officials in US.
- **Intra-block Tensions**: Disagreements between countries have led to intra-block tensions within NATO e.g., Turkey held off Sweden and Finland's NATO's membership for their criticism of violation of human rights by Turkey. French President has criticised NATO regarding lack of strategic coordination between the European allies and the US and Turkey.
- **Deterioration of Ties with Russia**: Russia's ties with NATO have now slipped to the level of direct confrontation in the face of NATO's open support for Ukraine in the Russia-Ukraine War.
- **Participation in Global Military Conflicts**: NATO has gained a bad name for participation in more than 200 military conflicts worldwide, which includes 20 major conflicts. It has been criticised for inflicting damage, human toll and bringing destruction and alienation instead of declaring peace and stability e.g., NATO's bombing of Yugoslavia.
- **Continuation of Colonial Practices**: Increasing number of Global South countries have started looking at NATO as a continuation of the ugly colonial practices in a modern avatar under the slogans of democracy, human rights and freedom as prescribed by the Euro-Atlantic rulers.
- **NATO's Expansionism**: NATO's expansion in the post-Soviet space and Eurasia is creating more alienation and damaging the traditionally close ties between the countries.
  - Many political experts have attributed the Russian aggression in Ukraine to NATO's eastward expansion right up to the borders of Russia.

What should be the way forward?

- **Restart Dialogue with Russia**: NATO should abandon the strategic concept adopted at the 2022 NATO summit by which Moscow is proclaimed to be the most significant and direct threat to allied security, peace and stability in the Euro-Atlantic. The dialogue mechanisms with Russia must be started at the earliest.
- **Positive Agenda for Global Peace**: NATO should present its agenda to contribute to the maintenance of global and regional peace and security. It should allay the fears of expansionism and continuation of colonial expansion by enhancing transparency in functioning.
- **Focus on Non-Traditional Threats**: NATO should further adapt to address non-traditional threats like terrorism, cyber-attacks, disinformation campaigns, and threats to security of supply chains.
- **Enhance the Quality, Coherence and Timelines of Advice**: The importance and functions of the 5 main policy committees within NATO must be enhanced. These include:

o The Military Committee, Political Committee, Policy Coordination Group, Executive Working Group, and Senior Resource Board.

10. Prime Minister's Visit to Bhutan and the Gelephu Mindfulness City

News: During a recent visit to Bhutan, the PM announced that India will double assistance to Bhutan from INR 5,000 crore to INR 10,000 crore by 2029. The PM also endorsed the Gelephu Mindfulness City.

What are the key highlights of the PM's visit?

- The King of Bhutan conferred the PM with **Bhutan's top civilian honour**, **the Order of the Druk Gyalpo**.
- The two countries signed various agreements:
  o Several MoUs and agreements were signed covering areas like petroleum, trade, digital connectivity, space, and agriculture.
  o India and Bhutan also initiated an agreement for rail links between **Kokrajhar-Gelephu** and **Banarhat-Samtse**, as well as waterway navigation on the Brahmaputra.
- The PM firmly supported the King's initiatives, which encompassed **Brand Bhutan**, **Bhutan Believe**, and the **Gelephu Mindfulness City project**. *(Refer EPIC April 2023 (click) for India-Bhutan Relationship and Influence of China)*.

What is the Gelephu Mindfulness City project?

- Gelephu Mindfulness City (GMC) is a **planned carbon-neutral city** in Bhutan, spanning 1,000 kms^2.
- It will concentrate on **eco-friendly industries** such as IT, education, hotels, and hospitals.
- Bhutan aims to **diversify its economy** beyond hydropower and tourism, addressing challenges like youth out-migration.

What are the challenges faced by the Gelephu Mindfulness City project?

- Gelephu's location on a broad plain in a mountainous area leads to **high rainfall and flooding** during the monsoons.
- The city is situated near **wildlife corridors**, which requires careful planning to prevent disturbing natural habitats.
- **Past insurgencies** in nearby Assam and Myanmar, and a history of militant activities in the area, highlight **security challenges**.
- As a landlocked area, Gelephu is **dependent on India for essential infrastructure** like trade and transport.
- The project requires significant investment for infrastructure development, including upgrading the local airport to international standards.

What are the implications of the Gelephu Mindfulness City project?

- **Strategic Influence**: India's involvement in the Gelephu project strengthens its influence in South Asia, countering China's growing presence.
- **Economic Benefits**: The project **dovetails with India's regional connectivity plans**, enhancing trade routes and infrastructure development.
- **Investment Opportunities**: India's role in financing and expertise, particularly in airport expansion, opens avenues for further **investments in Bhutan**.
- **Environmental Model**: The carbon-neutral aspect of Gelephu Mindfulness City sets a precedent for **sustainable urban development** globally.
- **Geopolitical Relationship**: The project offers Bhutan a platform for international engagement.
- **Regional Connectivity**: The city's location is strategic for India's Act East policy, improving connectivity to Southeast Asia and the Indo-Pacific region.

General Studies Paper III

1. India Employment Report 2024

News: The International Labour Organisation (ILO) and the Institute of Human Development (IHD) have jointly published a report titled India Employment Report 2024.

What is the India Employment Report 2024?

- The Report has been prepared by the Institute for Human Development in collaboration with the ILO.
- This Report has used the data analysis from the **National Sample Surveys** and the **Periodic Labour Force Surveys** between 2000 and 2022.
- It highlights the **challenges of youth employment** within India's evolving economic, labour market, educational, and skills landscapes.

Employment blues

Labour participation for various sections increased slightly in 2022 (compared to 2019) but was still low vis-a-vis 2000
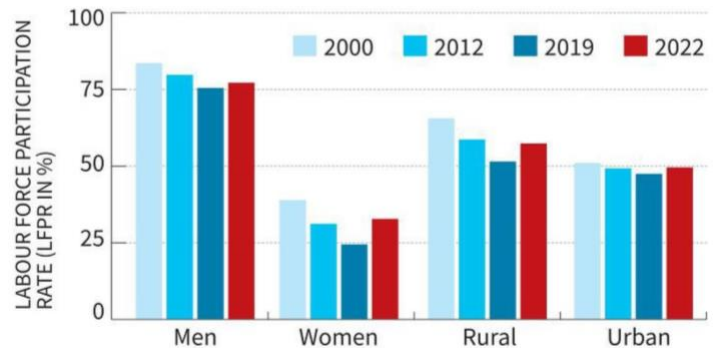
What are the key findings of the Report?

- **Rising Female Labour Participation Rate (FLPR)**: The FLPR has risen considerably between 2019 to 2022 after having fallen consistently between 2000-2019.
  o The number of women in the workforce has dropped in slums but increased overall in urban areas.
- **Sectoral Shift**: There has been a gradual **shift in the workforce from agricultural to non-farm sectors**.
- **Self-Employment**: There has been **predominance of self-employment** and **casual employment**, with ~82% workers in the informal sector. These jobs often **lack security and benefits**.
- **Stagnant Real Wages**: A modest rise in the wages of casual laborers between 2012 and 2022 has been observed while **real wages for regular workers have stagnated or declined**.
- **Urban-Rural Disparities in Employment and Wages**: Urban areas saw a higher unemployment rate at 4.8% in 2000, compared to 1.5% in rural areas. Despite higher urban unemployment, **urban wages were notably higher**: 76% more for the self-employed, 44% more for regular employees, and 22% more for casual labour in 2022.
- **Changing Migration Trends**: The Report indicates a shift in the migration patterns, with overall migration increasing but male migration slightly decreasing from 2000-08 and further in 2021. India is expected to have a migration rate of around 40% in 2030 and will have an **urban population of around 607 million**.
- **Urban Poverty and Migration**: Rural-to-urban migration has led many to settle in slums, highlighting the need to analyse income and employment trends in these areas to understand economic mobility prospects for the urban poor.

What are the challenges highlighted in the Report?

- ~90% of workers remain engaged in **informal work**.
- There has been a **rise in contractualisation**. Only a small percentage of regular workers are covered by **long-term contracts**. The share of regular work increased steadily after 2000 which declined after 2018.
- There are **widespread livelihood insecurities** with only a small percentage being covered with social protection measures, precisely in the non-agriculture, organized sector.

- India's large young workforce is a **demographic dividend**, but they **don't have the skills to deliver**; with 75% of youth unable to send emails with attachments, 60% unable to copy and paste files, and 90% unable to put a mathematical formula into a spreadsheet.

World Bank's South Asia Development Update

- **Employment Ratio**: The report shows a **decline in the overall employment ratio** from 64.1% in 1999-00 to 58.2% in 2021-22, mainly due to **reduced agricultural jobs**.
- **Non-farm Employment**: There's an **increase in non-farm employment**, with the ratio rising from 25.7% to 33.3%.
- **Rise in Factories**: It highlights the **growth in larger non-agricultural firms**. The number of factories with over 100 workers rose, indicating a **shift towards more substantial employment sources**.
- **Large-scale Employment**: The workforce in larger factories (100+ workers) has been growing faster than in smaller factories, suggesting a **trend towards larger-scale employment**.

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What are the concerns associated with the current job situation in India?

- **Low Employment Rate**: Only 46.6% of India's working-age population is currently employed, which is significantly lower than the approximately 70% seen in other emerging markets.
- **Job Creation**: India needs to create **90 million new non-farm jobs** by 2030 to keep pace with its growing working-age population.
- **Service Sector Focus**: The Indian economy has heavily focused on service industries, employing 5.4 million in IT and back-office roles, but faces challenges such as automation reducing job opportunities.
- **IT Sector Decline**: For the first time in 25 years, the IT sector, a cornerstone of India's service economy, has experienced shrinkage, influenced by increasing automation and artificial intelligence.

What are the promising future prospects for India's labour market?

- **Continued growth in the manufacturing sector** is expected as seen with 3.74 million jobs being added in 2021-22.
- Improvement in tertiary education has led to **higher employability among graduates**. The National Employability Test score increased from 33.9 in 2014 to 51.3 in 2024.
- There has been a **decline in the youth unemployment rates**, with graduate unemployment dropping from 35.4% to 28% from 2017-18 to 2022-23.

What measures are needed to address these challenges?

- **Global Capability Centres (GCCs)**: Expansion of GCCs can lead to job creation, with current employment at 1.6 million and expected growth to 4.5 million by 2030. These centers offer services ranging from finance and HR to tech innovation, helping India become a major exporter of services.
- **Tech Startups**: Encouragement for tech startups to scale up, leveraging India's capabilities in AI, SaaS, Defense, and Greentech, can lead to significant direct and indirect employment gains.
- **Green Energy**: Focus on renewable energy with plans to install 500 Gigawatts by 2030, can lead to creation of 50 million new jobs in the green economy.
- **Manufacturing Sector**: Revitalizing the manufacturing sector is crucial, especially for small and medium enterprises (SMEs) that are less prone to automation and can employ more people. This effort should be supported by digital infrastructure to boost their competitive advantage.

- **Labour-intensive Services**: Labour-intensive services sectors like tourism have potential to provide a large number of jobs to unskilled and semi-skilled workers. Such sectors should be promoted through appropriate policy measures.
- **Skilling**: The Government should focus on enhancing skills of the youth to improve their employability.

2. *Viksit Bharat* 2047: Achieving the Developed Economy Status

News: The Government has set a target for achieving the developed economy status by 2047. Several challenges must be addressed to achieve the status.

What is India's Goal for 2047?

- **Developed Economy Status:** The Government aims to become a developed country by 2047, focusing on broad societal and economic development.
- **High-Income Economy**: The target is to reach a per capita income of ~US$ 14,000, aligning with the World Bank's criteria for high-income country.
- **Improving on Past Performance**: Recognizing slower growth in earlier decades, the goal is to significantly accelerate development, similar to the post-1990s economic reforms. *(Refer EPIC September 2022 (click) for India as a Developed Nation)*.

What factors are needed for India to become a developed country by 2047?

- **Economic Growth**: India needs to maintain an **8% annual growth rate until 2047**. This mirrors the growth rates of nations like South Korea and Singapore that have successfully achieved the developed status.
- **Policy and Governance**: Effective policies in areas like fiscal management, foreign trade, education, health, and law are crucial. This reflects the success factors of developed East Asian countries.
- **Global Context**: India's progress will be influenced by global economic and geopolitical situations. Adverse global economic conditions can considerably slow down India's growth despite **favourable domestic factors**.
- **Technological Progress**: Adapting and innovating in technology is vital, similar to how China and East Asian countries have advanced. China is taking a lead in cutting-edge technologies like AI, quantum computing etc. India must develop indigenous capabilities in these fields and not let the gap with China become too large.
- **Addressing Climate Change and Resource Scarcity**: Mitigating climate impacts and managing resources efficiently is essential.

How have the India and Chinese Economies grown since 1990?

- In 1990, China's GDP was just 23% higher than India's. China and India were ranked as the world's 11th and 12th largest economies, with nominal GDPs of US$ 395 billion and US$ 321 billion, respectively.
- In 2022, the gap had widened significantly. China's economy was 5.3 times larger than India's (430% larger).
- China's economy grew at a faster pace, averaging 10% in the 1990s and 10.4% in the 2000s, compared to India's growth of 5.8% in the 1990s and 6.3% in the 2000s.
- China's per capita GDP in 2022 was US$ 12,720 (nearly high-income range). India's per capita income was US$ 2,411, in the lower-middle income range.
- In 2022, India with a GDP of $3.4 trillion, resembled China's economy in 2007.

Why should the Government focus on improving the Per Capita Income?

Measure of Living Standards: Per capita GDP indicates the average income per person, directly relating to the living standard of the population. *(Refer EPIC July 2023 (click) for Challenges to India's Economic Growth and Comparison of Indian and Chinese Economies)*.

- **Poverty Elimination**: It provides a more comprehensive economic goal than just reducing poverty, focusing on overall improvement in quality of life.
- **Policy Making Tool**: Setting targets for per capita GDP helps policymakers in planning and implementing strategies for sustainable and inclusive economic growth.
- **Long-term Vision**: India's aim to quadruple its per capita GDP by 2047 is an example of using these targets for long-term economic planning and development.

Relative growth of India and China's economies (1990-2022)

GDP rankings in descending order

1990	2000	2010	2013	2022
US	US	US	US	US
Japan	Japan	CHINA	CHINA	CHINA
Germany	Germany	Japan	Japan	Japan
France	UK	Germany	Germany	Germany
Italy	France	France	France	INDIA
UK	CHINA	UK	UK	—
Canada	Italy	Brazil	Brazil	—
Spain	Canada	Italy	Russia	—
Russia	Mexico	INDIA	Italy	—
Brazil	Brazil	—	INDIA	—
CHINA	Spain	—	—	—
INDIA	Korea	—	—	—
—	INDIA	—	—	—

Source: World Bank DataBank

GDP in current US dollars — India — China

394.6 · 321.0 · 17963.2 · 3416.6
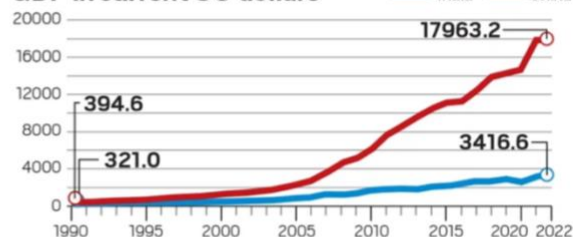
GDP Per Capita in current US dollars

347.6 · 368.7 · 12720.2 · 2410.9
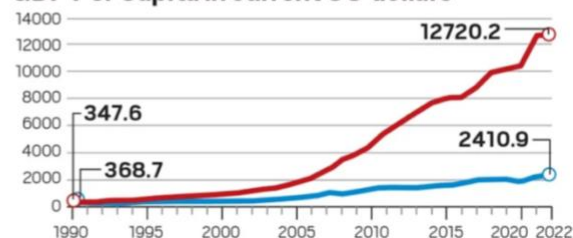
Source: Indian Express. Till mid-1990s, India and China had comparable economies with similar per capita incomes and nominal GDPs. Since then, the gap has widened considerably.

What challenges must be addressed?

- **Resource Allocation**: There is challenge of scarce resource allocation due to limitation of capital, skills and technology. Resource scarcity calls for judicious allocation and use.
- **Political Instability**: Presence of stable Governments is necessary to provide policy certainty. This can help create conducive environment for investments.
- **Policy Uncertainty**: The Government has to provide a stable policy environment. Frequent policy changes are detrimental to economic growth in the long run.
- **Global Economic Environment**: A global slowdown reduces demand for domestic goods and can lower the growth rate of domestic economy. Several economists have observed that India may not be able to replicate China's model of being 'manufacturing factory of the world' as the global demand for goods has diminished. India may have to develop its own strategy with a **mix of manufacturing** and **labour-intensive services sector as main drivers of employment**.

3. 90 Years of the RBI

News: The RBI has completed 90 years of existence. It has played a central role in India's economic growth.

What are the significant achievements of the RBI?

- **Balance Sheet and Liquidity Support**: As of March 31, 2023, the RBI's balance sheet is at a remarkable INR 63 lakh crore, which is larger than the Government's annual budget.

- The RBI has offered liquidity support equivalent to nearly 9% of GDP (US$ 227 billion) after the COVID-19 pandemic.
- **Foreign Exchange Reserves**: India's foreign exchange reserves have touched ~ US$ 640 billion, ranking 4th globally. These reserves are vital for stabilizing the value of the rupee and have supported India during global crises like the 1997 East Asian currency crisis and the 2008 financial crisis.

> **History of the RBI**
> The RBI was established on April 1, 1934, based on the suggestions from the **Royal Commission on Indian Currency and Finance** to ensure India's monetary stability.
> The RBI started functioning on April 1, 1935, with **Sir Osborne Smith** as its first Governor.
> The RBI's main office was first in Kolkata but moved to Mumbai in 1937.

- **Inflation Management**: Over time, the RBI's responsibility for managing inflation or price stability has changed. In 2016, a flexible **inflation targeting system** was introduced. This involves a 6-member **Monetary Policy Committee** (MPC) determining interest rates to keep inflation within a **target range of 2-6%, with 4% as the goal**.
- **Financial Sector Regulation**: The RBI has taken steps to lower **non-performing assets** (NPAs) in banks and keep a **healthy capital adequacy ratio** between 15-16%. It has also acted as a lender of last resort, helping troubled banks such as Yes Bank and Lakshmi Vilas Bank.
- **Macroeconomic Stability**: Prudent policies of the RBI has enabled the economy to withstand crises like the Financial crisis of 2008 or the COVID-19 pandemic.
- **Use of Technology**: RBI's policies have played a crucial role in the development and uptake of technology in the financial sector like the UPI and digital payments. RBI is also working on the development of **Central Bank Digital Currency**.

What are the challenges faced by the RBI?

- **Banking Regulation and Supervision:** The RBI needs to enhance its regulatory and supervisory mechanisms, as demonstrated by the YES Bank and Infrastructure Leasing & Financial Services (IL&FS) Ltd. crises.
  - Additionally, rising incidents of frauds in the digital domain pose a new challenge to the RBI.
- **Regulating New-Age Fintech Firms:** The RBI faces the challenge of effectively regulating emerging fintech firms while balancing the need for innovation.
- **Transparency with Regulated Entities**: There's a challenge in maintaining transparency, specifically highlighted by the RBI's dealings with Paytm Payments Bank.
- **Limited Powers over Public-Sector Banks**: The RBI's constrained ability to regulate public-sector banks indicates a need for legal changes to empower the institution more effectively.
- **Potential Fiscal Dominance of Monetary Policy**: The Government's role in fiscal policy could overshadow the RBI's monetary policy, stressing the need for the Government to maintain low fiscal deficits.
- Several former RBI Governors has stressed upon the need to **keep the RBI insulated from Government's interference** and **maintaining its autonomy**.

What should be the way forward?

- The Government and the RBI should **work in close coordination to ensure macroeconomic stability**, but the Government must refrain from exercising control over the RBI.
- The RBI must adopt a **proactive approach to Financial sector regulation**. Emerging technologies have potential to improve efficiencies in the sector. RBI should **promote innovation** while **protecting consumer interest**.
  - Proactive approach should **prevent the crises** like Paytm in future or cause large losses to investors.

4. Challenges Related to Wealth Tax

News: Economists have raised concerns about rising inequality in India. Wealth Tax has been proposed as a solution to reduce inequalities, but there are several challenges related to its implementation.

What is the current status of wealth inequality in India?

- **Increase in HNIs**: The number of High Net-worth Individuals (wealth more than US$ 1 billion) has risen from 1 in 1991 to 162 in 2022.
- **Comparison with Other Countries**: This growth is higher than in China over the last few years.
  - India's top 1% income share and wealth share is among the very highest in the world, behind only perhaps Peru, Yemen and a couple of other small countries.
- **Extreme Wealth Concentration at the Top**: Between 1961 and 2023, the top 1% wealth share has increased three-fold, from 13% to 39%.

To address rising wealth inequality, economists have suggested solutions like **Super-rich Tax** or **Wealth Tax on HNIs** and **multi-millionaires**. *(Refer EPIC March 2024 (click) for World Inequality Lab Report: Income and Wealth Inequality in India 1922-2023).*

Long-run wealth inequality in India, 1961-2023

Legend: Bottom 50%, Middle 40%, Top 10%
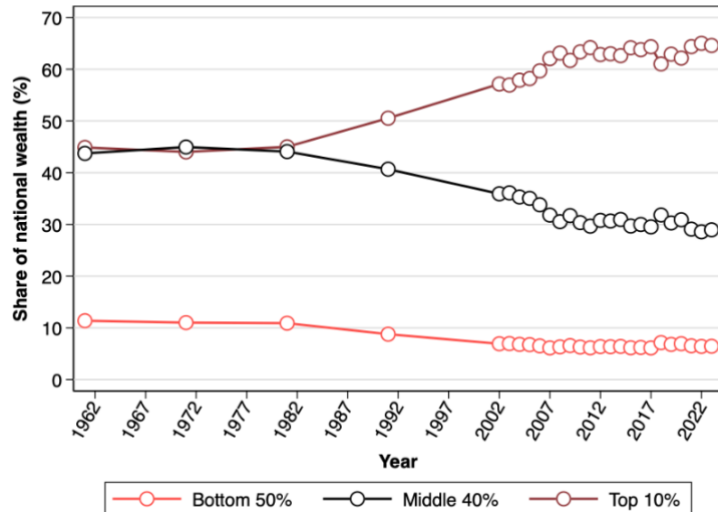
Source: World Inequality Lab. The share of bottom 50% in wealth ownership fell from 10% in 1961 to ~8% in 2023. The share of middle 40% fell from ~43% to ~30%. The share of top 10% rose from ~43% to ~65%.

Why do the poor care more about poverty than inequality?

- **Personal Impact**: People are more affected by their immediate financial situation, like poverty, rather than abstract concepts of national or global inequality.
- **Awareness**: The general public is often unaware of the **technical measures of inequality**, like the Gini Coefficient.
- **Economic Priorities**: In developing countries like India, the focus is more on wealth creation and escaping poverty, as demonstrated by the significant reduction in extreme poverty alongside rising inequality.

What are the challenges of implementing a wealth tax?

- **Difficulty in Fair Assessment**: Assessing and taxing wealth is complex, particularly with diverse assets like real estate and cryptocurrencies.
- **Liquidity Problems**: A wealth tax could unfairly burden people with illiquid assets, like a home, which might need to be sold under distress to pay taxes.
- **Visibility of Assets**: Visible assets, especially stocks, are easier to tax, but this could unfairly target certain forms of wealth.
- **Economic Impact**: A wealth tax might discourage businesses from going public and could **lead to flight of capital** to lower-tax countries.
  - It might discourage new entrepreneurship, particularly important for first-generation entrepreneurs.
- **Discouraging Investment:** A heavy wealth tax could deter wealthy individuals from investing in high-return ventures, which is vital for economic growth.

- **Inefficiency in Capital Allocation**: Such a tax could make capital allocation less transparent and efficient, adversely affecting the economy. It can **slow down economic growth in the long run**.

Why is wealth creation important?

- **Poverty Reduction**: Wealth creation is crucial for reducing poverty, as seen in India's progress where extreme poverty significantly declined alongside economic growth.
- **Economic Growth**: When wealth is generated, it contributes to overall economic development, benefiting broad society.
- **Investment and Entrepreneurship**: Wealthy individuals often invest in high-return ventures, promoting economic activity.

What should be the way forward?

- **Increasing Minimum Wage**: The Government should raise the minimum wage rate especially in the unorganized sector where people get very less social security benefits.
- **Higher Investment in Education and Health**: The Government of India must invest 6% of GDP in Education and 2.5% of GDP in Health to ensure equitable development and reduce inequalities.
- **Better Targeting of Welfare Schemes**: There should be greater focus on digitization and JAM usage in order to reduce leakages and inclusion and exclusion errors in schemes.

5. Tamil Nadu's Model of Economic Diversification and Decentralized Industrialization

News: Tamil Nadu is India's most economically diversified State. It has achieved this diversification through a model of decentralized industrialization.

What are the components of Tamil Nadu's Economy?

- Tamil Nadu is **India's top ranked State** in **economic complexity**, measured by the **diversity of its Gross Value Added** (GVA) and **employment profile**.

SECTOR-WISE SHARES OF GVA & WORKFORCE: 2022-23 (%)

	Gross Value Added*		Workforce	
	All-India	Tamil Nadu	All-India	Tamil Nadu
Agriculture	18.19	12.55	45.76	28.87
Industry**	18.80	22.69	12.27	17.88
Construction	8.84	11.70	13.03	18.04
Services	54.18	53.05	28.94	35.21

*At Basic Prices; ** Includes manufacturing, mining, electricity and utilities. GVA is GDP net of product taxes and subsidies. Source: National Accounts Statistics and Periodic Labour Force Survey.

Source: Indian Express. Tamil Nadu's share of Agriculture workforce (28.9%) is much below the national average (45.8%).

- Tamil Nadu's economy is **less dependent on Agriculture for GVA** and work-force participation; **services**, **construction**, and **industry** provide greater livelihood opportunities.
- Although **Gujarat has larger share of industries** (**GVA** (43.4% of Gujarat's GVA) and **workforce** (24.6%)), but its economy still has a **significant share of agriculture workforce** (41.8% workers contributing only 15.9% to GVA of the State).
- Within Agriculture also Tamil Nadu is one of the most diversified State. ~45.3% of Tamil Nadu's farm GVA comes from the **livestock subsector**, the highest for any State and above the **all-India average of 30.2%**.

What are the reasons behind greater diversification in Tamil Nadu's economy?

- **Cluster-based Industrialization**: Tamil Nadu's economic shift has been driven by medium-sized businesses whose turnover range between INR 100 crore-5,000 crore. The State's industrialization has also been more **widespread and decentralized**, focusing on the **development of clusters**.

- **Specialized Agglomerations**: The clusters have **specialized in particular industries** e.g., Tirupur has specialized in cotton knitwear; Coimbatore for spinning mills and engineering goods; Sivakasi for safety matches and fire crackers; Salem, Karur and Somanur for powerlooms and home textiles etc.
- **Diversification**: Some cluster towns have become **hubs for multiple industries** e.g., Karur has powerlooms, bus body builders and makers of mosquito and fishing nets etc. Dindigul has spinning mills and leather tanneries.
- **Dispersed Locations**: Most clusters have come up in **small urban/peri-urban centres**. They provide employment to people from surrounding villages.
  - This has **checked large scale migration** to big urban areas like Chennai.
  - This has created diversification options outside of agriculture, reducing the proportion of TN's workforce dependent on farming.
- **Grassroot Entrepreneurship**: The decentralized industrialization has been led by entrepreneurs from **ordinary farming backgrounds** and **local merchant communities**.
  - Tamil Nadu's entrepreneurial culture is diverse, spreading among different communities and across various industries.

The **grassroots entrepreneurship**, along with **substantial investments in public health and education**, helps in explaining Tamil Nadu's relative success in industrialization and diversification away from agriculture.

If the experience of Tamil Nadu is replicated in other States, it can help boost the MSME sector, promote the industrial sector, reduce the pressure of population on agriculture and check rural-urban migration.

6. Digital Competition Law

News: The Committee on Digital Competition Law has recommended a more proactive approach for regulation of digital markets in India. The Committee has also proposed a draft Digital Competition Bill to give effect to its recommendations.

What are the recommendations of the Committee?

Ex-ante Regulation

- The current **ex-post framework** (intervention after an event occurs) under the **Competition Act, 2002**, does not facilitate **timely redressal of anti-competitive conduct** by digital enterprises.
- This approach is **ineffective to address** the irreversible **tipping of markets** in favour of **large digital enterprises** (permanent dominance of a firm in the relevant market).
- The Committee has recommended enacting the **Digital Competition Act** to enable the Competition Commission of India (CCI) to selectively regulate large digital enterprises in an **ex-ante manner** (proactive regulation to anticipate and intervene before an event occurs).

Systemically Significant Digital Enterprises (SSDEs) and Associate Digital Enterprises (ADEs)

- The Committee has recommended designating entities offering certain **core digital services** like search engines, social networking services, operating systems, and web browsers, as **Systemically Significant Digital Enterprises** (SSDEs).
- The business enterprises within the SSDE group that are directly or indirectly involved in providing core digital services are required to be notified by the CCI as the **Associate Digital Enterprises** (ADEs).

Thresholds for classification of SSDEs

- It has recommended using both **quantitative thresholds** and **qualitative criteria** to designate enterprises as SSDEs.
- **Quantitative Criteria**: Dual test for gauging significant financial strength and spread:
  - Parameters for **Significant Financial Strength**
    - Turnover (at least INR 4,000 crore in India and global turnover of at least US$ 30 billion).

- Gross merchandise value (INR 16,000 crore in India), and market capitalization (Global market capitalisation of US$ 75 billion in the immediately preceding 3 financial years).
  - o Parameter for Significant Spread
    - Number of business users and end users of the core digital service in India (either 10,000 business users or 1 crore end users).
- **Qualitative Criteria**: Since the quantitative criteria may not cover all digital enterprises that may have a significant presence in Indian digital markets, the Committee has recommended qualitative criteria. This includes **resources of the enterprise** and **volume of data aggregated by them**.

Obligations of SSDEs

The SSDEs are prohibited from carrying out certain practices. These include:

- **Favouring their own products** and services or those of related parties.
- **Use non-public data** of business users operating on their core digital service.
- Restriction of users from **using third-party applications** on their core digital services.
- **Incentivising the users** of an identified core digital service **to use other products** or services offered by the SSDE.

Enforcement of provisions

- The Director General, appointed under Competition Act 2002, is required to investigate any contraventions when directed by the CCI.
- A separate bench of the **National Company Law Appellate Tribunal** must be constituted for timely disposal of appeals.

Penalties

- CCI has the powers of imposing civil penalties on the SSDEs found to be indulged in anti-competitive practices. CCI has the powers to impose monetary penalties for non-compliance with ex-ante obligations and with its orders. The monetary penalties have been capped at 10% of the global turnover of the SSDE.

Big Tech

- Big Tech (Tech Giants) refers to the **most dominant companies** in the technology and digital industry.
- The term is most notably used for the 5 largest American Tech companies (Big 5): **Alphabet** (Google), **Amazon**, **Apple**, **Meta** (Facebook), and **Microsoft**.
- The Big Five are **dominant players** in their respective areas of technology like Artificial Intelligence, e-commerce, online advertising, consumer electronics, cloud computing, computer software, media streaming, and social networking.
- They are among the **most valuable public companies**. (very high market capitalization).
- They have been criticized for creating a new economic order called **surveillance capitalism**. They offer services to millions of users, and are **able to influence user behaviour.**
- Concerns over **monopolistic practices** have led to **antitrust investigations** in the US and the EU.

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What is the need for Digital competition Law?

- **Abuse of Dominant Market Position**: Core digital service providers have been found to be involved in abuse of their dominant market position e.g., Google (Android and Play Store Ecosystem) **forced app developers to use Google's proprietary billing system** by charging a fee if they opt for a competitor's service.

- **Self-preferencing and Platform Bias**: Core digital companies have been competing with other third party service by **promoting their own services** or subsidiaries on their platform e.g., Amazon's e-commerce service has been under scrutiny in India due to its dual role of being a **marketplace operator**, as well as a **retailer** on its own platform.
- **Restrictions on Third-Party Applications**: Big digital entities have restricted installation or operation of third-party applications e.g., Apple's restriction on installing 3rd-party applications on iPhone.
- **Bundling and Tying**: Big Digital tech firms have been compelling consumers to **purchase related services by linking their main products** or services to other complementary offerings. Operating system providers like Microsoft, **bundle the use of its search engine and products like Office**.
  o This generates **pricing asymmetry** and results in the **elimination of competition** from the market.
- **Anti-Steering**: Anti-steering provisions are employed by big tech entities to hinder business users from **migrating away from the platform** (and utilizing alternative options). This results in restriction of customer choices.
- **Network Effect and Economies of Scale**: The core digital services companies demonstrate network effects, which **enable rapid growth of their user base** and fixation of arbitrary prices. This **creates challenges for new competitors** to overcome e.g., Meta's subscription model offering people in EU, European Economic Area (EEA) and Switzerland the choice to **use Facebook and Instagram without any ads**.
- **Concerns Over Data Privacy**: Core digital companies gather vast amounts of user data through their platforms and services. This has raised concerns about **data privacy**, **digital surveillance**, and **data security** e.g., CCI is probing WhatsApp's privacy policy based on allegations that the messaging platform shares user data with its parent Facebook.
- **Killer Acquisitions, Mergers and Monopoly**: Killer acquisitions, where big techs **purchase valuable start-ups without being subject to merger control rules** based on turnover, create an unfair playing field in the digital market e.g., Facebook's killer acquisition of Instagram and WhatsApp has led to the monopolisation of social media communication domain.

What will be the advantages of Digital Competition Law?

- **Reduction in time for anti-competitive case redressal**: Ex-post measures for redressal of anti-competitive practices were **time-consuming** e.g., CCI adjudicating in 2018 on a complaint of abuse of dominant position filed in 2012. The ex-ante measures introduced with the Digital Competition Law will reduce the redressal time.
- **Create Level Playing Field**: The new Digital Competition law will create a level playing field for all digital service providers operating in India.
- **Catalyse the Startup Growth**: The new law will further catalyse the growth of digital startups in India. They will not be in a disadvantageous position due to the 'network effect' and 'economies of scale' of core digital service providers.
- **Address Data Privacy Concerns**: The incorporation of penalties for violation of data privacy will further strengthen data privacy regime in India.
- **Boost to Digital Economy**: It is expected that India's digital markets will reach US$ 800 billion by 2030 by effective regulation through this digital competition law.

What are the associated concerns?

- **Stifling of Innovation**: There are concerns that strict regulations **could limit creativity** and growth in the digital sector.
- **Potential for Misuse**: Critics point that the draft Bill's ex-ante approach gives **excessive discretionary power to the regulators**. This raises concerns about its potential misuse.

- **Overlap with Existing Laws**: The proposed new law might overlap with the provisions of the Competition Act, leading to **regulatory complexity** and potential confusion.
  - It could result in parallel inquiries and divergent rulings for the same issue.

What should be the way forward?

- **Revamping CCI**: The institutional structure of CCI must be revamped by creating separate cell/division, beefing up the **technical manpower** for dealing with digital anti-competitive practices.
- **Early establishment of separate bench of NCLAT**: The Government must constitute a separate bench in the NCLAT for **early adjudication** of anti-competitive cases.
- **Effective Checks and Balances**: A mechanism of **ensuring effective checks and balances** must be instituted to curb any abuse of discretionary powers by the authorities.

7. Supreme Court's Ruling on Right Against Climate Change

News: The SC has recognized the Right against the Adverse Effects of Climate Change as a fundamental right in the Constitution linking it with the Right to Life (Article 21) and Right to Equality (Article 14).

What is the Supreme Court ruling on Right Against Climate Change?

- The SC ruling has come in the case connected with the survival of the endangered **Great Indian Bustard** Species.
- **Right against Climate Change is a Fundamental Right**: Right to a **healthy environment**, which is safe from the ill-effects of climate change, is a fundamental right.
- **Expansive View of the Fundamental Rights under Article 14 and 21**: SC has held that Right to Life and Right to Equality could not be fully realised without a clean, stable environment. SC has expanded the scope of Article 14 and Article 21 to underline the need to protect lives and livelihoods in the face of climate change.
- **Impact on the Right to Health due to Climate Change**: The Right to Health (which is a part of the Right to Life, Article 21) is impacted due to factors such as air pollution, vector-borne diseases, rising temperatures, and droughts. These factors are **exacerbated due to climate change**.
- **Impact on the Right to Equality due to Climate Change**: Climate Change and environmental degradation lead to acute food and water shortages and **the poorer communities suffer more than the rich**. Forest dwellers, tribal and indigenous communities have a higher risk of losing their homes and culture due to climate change as compared to other communities.
- **Interconnection between Climate Change and Human Rights**: SC in its Judgement has held that climate change impacts various human rights such as the right to health, indigenous rights, gender equality, and the right to development.
- **Right against Climate Change and Right to Clean Environment Interlinked**: The right against the adverse effect of climate change and the right to clean environment are **two sides of the same coin**. However, with the increase in adverse effects of climate change, it is **imperative to recognise the right against adverse effects of climate change as a distinct right**.

What is the significance of the Supreme Court Ruling on Right against Climate Change?

- **Reiteration of Commitment to Climate Justice**: The SC ruling reiterates India's climate responsibilities under international laws and agreements such as the Paris Agreement, which aim to provide environmental and **climate justice**.
- **Climate Change and Public Discourse**: The recognition of Right Against Climate Change as a fundamental right, makes the issue of climate change a part of the **public and political discourse**. It will nudge the Parliament to enact legislations on the issues of climate change.

- **Environmental Jurisprudence**: The Judgment opens the doors of the Constitutional courts for citizens to **litigate climate change issues** in future.
- **Progressive Step in Legal Precedent**: In the absence of a single or umbrella legislation against climate change in India, the recognition of the rights of Indians against climate change by the Judiciary, is a progressive step setting a **significant legal precedent**.
- **Recognition of Vulnerability to Climate Change**: The ruling is a recognition of the vulnerability of Indians to climate change which has been highlighted by the several studies, including the IPCC reports.

What are the other SC rulings on Environmental Issues?

Judgment	Details
MC Mehta vs Kamal Nath (2000)	• The SC held that any **disturbance of the basic environment elements**, namely air, water and soil (necessary for 'life'), would be **hazardous to 'life'** within the meaning of Article 21 of the Constitution. • The SC held that Right to Life within Article 21 includes the **right to live in a healthy environment**, right to **enjoy pollution-free water and air**, and **right to live in a pollution-free environment**.
Virender Gaur vs State of Haryana (1994)	• It is the duty of the State Governments and municipalities to take adequate measures to promote, **protect and improve both the man-made** and the **natural environment**.
Karnataka Industrial Areas Development Board vs C Kenchappa, (2006)	• The Supreme Court took note of the adverse effects of rising sea levels and rising global temperatures.
Bombay Dyeing Co. Ltd. (3) v. Bombay Environmental Action Group (2006)	• The Supreme Court recognised that the climate change posed a "major threat" to the environment.

What should be the way forward?

- **Legislative Effect**: **Enaction of legislation** and framing of policies against climate change will help in the actual realisation of the right of citizens against climate change.
- **Inclusion in Political Manifestos**: The recognised fundamental right against climate change must be a part of the **manifestos of the political parties** in the General and State Assembly elections. They must outline their **plan of action** for the realisation of these rights.
- **Environmental Jurisprudence and Policy Action**: Governments must be proactive in implementing and giving effect to the judgments. The delay in enaction of policy must be avoided.

8. Supreme Court's Judgment on Deforestation in Jim Corbett National Park

News: The SC has ruled against the illegal cutting of 6,000 trees in Jim Corbett National Park, emphasizing the need to prioritize eco-centric approaches over human-centered approach for conservation.

What is the recent SC judgement on Jim Corbett National Park?

- **Illegal Felling of Trees**: The SC highlighted the collusion among politicians, forest officials, and local contractors in the illegal cutting down of 6,000 trees in the Jim Corbett National Park. This action violated **conservation-focused laws** such as the **Wildlife Protection Act**, **1972**, Project Tiger, and the **Forest (Conservation) Act**, **1980**.

- **Shift in Conservation Approach:** The Supreme Court criticized the current **anthropocentric methods of conservation** and advocated for an **ecocentric approach**, prioritizing nature and **ecosystem integrity** over human benefits.
- **Ban on Tiger Safaris**: The SC has banned tiger safaris in the **core areas of national parks** to **reduce disturbance to wildlife and natural habitats**, stressing that wildlife must not be treated like zoo exhibits.
- **Formation of Committee**: The Court ordered the formation of a committee to evaluate the feasibility of permitting tiger safaris in peripheral areas, reflecting a **balanced approach towards conservation and tourism**.
- **Precautionary Principle**: The Judgment applied the precautionary principle, emphasizing **preventive action in environmental governance** to minimize harm to biodiversity and ecosystems.

What are the issues with the SC Judgment?

- **Lack of Defined Methodology for Restoration**: The Court's intention to assess and recover costs for the damage to Jim Corbett's green cover **lacks a clear methodology**, making actual restoration doubtful.
- **Inadequate Compensation Methods**: The existing financial mechanisms, such as the **compensatory afforestation levy** and **net present value** (NPV), introduced by the Supreme Court in 2002 after the **T.N. Godavarman Case (1996)**, do not fully account for the **environmental damages**. They fail to consider the **broader ecological harm caused by deforestation** beyond just tree loss. The recent Supreme Court Judgment did not address these limitations.
- **Underestimation of Ecosystem Services**: The SC could have emphasized the importance of ecosystem services, which are more valuable than the revenue from eco-tourism. A methodology for evaluating such services, as discussed in the **International Court of Justice's Costa Rica v. Nicaragua Case (2018),** could have been considered.
- **Focus on Eco-Tourism over Biodiversity**: The emphasis remains on eco-tourism for revenue, despite significant biodiversity losses, including a **90% reduction in area under 4 biodiversity hotspots** and **12% of species being endangered**.

How Precautionary Principle is helpful in tackling environmental problems?

- **Prevents Irreversible Damage**: The Precautionary Principle states that the lack of full scientific certainty should not delay actions to prevent environmental harm, especially when the **damage could be serious or irreversible**.
- **Applied to Biodiversity**: Norman Myers highlights its importance for biodiversity, noting that unchecked mass extinction could **impoverish the biosphere for millions of years**.
- **Supports Endangered Species**: The principal underscores actions to protect the **12% of endangered animal species in India**, as identified by the IUCN's Red List.

9. Heat Waves in India

News: The Indian Meteorological Department (IMD) has warned of 'extreme heat' and more than double the number of heatwave days than usual in the summer season this year.

What are Heatwaves?

- Heat waves are **prolonged periods of excessively hot weather** that can have adverse impacts on human health, the environment, and the economy.
- In India, the IMD defines heatwave based on multiple criteria.
  - o **Physiography of Regions**

- **Plains**: The maximum temperature recorded at a station is 40°Celsius or more.
      - **Coasts**: The maximum temperature recorded at a station is 37°Celsius or more.
      - **Hills**: The maximum temperature recorded at a station is 30°Celsius or more.
   o **Based on Departure from Normal Temperature**
      - **Heat Wave**: Departure from normal is 4.5°C to 6.4°C.
      - **Severe Heat Wave**: Departure from normal is > 6.4°C.
   o **Based on Actual Maximum Temperature**
      - **Heat Wave**: Actual maximum temperature ≥ 45°C.
      - **Severe Heat Wave**: Actual maximum temperature ≥ 47°C.
- Heat Wave is declared if above criteria are met in **at least 2 stations in a Meteorological subdivision** for **at least two consecutive days**.

What is the status of Heatwaves in India?

- Being a tropical country, summers in India are typically hot. However, during the last few decades, due to **increased impact of climate change**, the instances of heat waves have **risen quite significantly**.
- States like Rajasthan, Gujarat, Uttar Pradesh, Delhi, Haryana, Punjab, Madhya Pradesh have been affected the most by the Heatwaves.
- According to IMD, between 1981 and 1990 there were 413 heatwave days in India. However, the heatwave days have increased to 600 days between 2011 and 2020.
- The number of deaths from heat-related causes increased from 5,457 between 1981 and 1990 to 11,555 between 2011 and 2020.

What are the factors behind the increase in Heatwaves in India?

Heatwaves can be caused by a combination of natural and human-induced factors. The main causes are mentioned below:

Natural causes

- **High Atmospheric Pressure Systems**: Heatwaves occur when high-pressure systems stall over a region. These systems **trap warm air near the Earth's surface** and prevent the normal movement of air masses, leading to prolonged periods of hot weather.
- **Climate Variability**: Natural climate variations, such as **El Nino** and **La Nina** events, influence weather patterns and increase the likelihood of heatwaves e.g., during El Nino events, warmer ocean waters in the tropical Pacific lead to changes in atmospheric circulation and weather patterns. Typically, El Nino years lead to higher frequency and intensity of heat waves in northern India.
- **Drought and Dry Conditions**: Prolonged periods of drought and lack of precipitation reduces the overall moisture of the soil, causing the land to heat up more quickly during heat waves.
- **Changes in Wind Patterns**: Shifts in wind pattern transports hot air from one region to another which can intensify heat waves in areas that are not typically prone to such extreme temperatures.
- **Geography and Topography**: Geographic features and topographical conditions also contribute to the development of heat waves e.g., Landlocked valleys and regions surrounded by mountains trap hot air and lead to temperature spikes.

Human-Induced Factors

- **Global Warming**: The long-term increase in Earth's average temperature, primarily driven by human activities such as burning of fossil fuels, deforestation, and industrial processes, has increased the frequency and intensity of heat waves.
- **Urban Heat Island Effect**: Urban areas with high population density, extensive concrete and asphalt surfaces, and limited vegetation tend to absorb and retain more heat.

o This creates **localized zones of higher temperatures**. This phenomenon, known as the urban heat island effect, and intensifies heat waves in cities.

What are the impacts of Heatwaves?

- **Impact on Human Health:** Rapid rise in heat **compromises body's ability to regulate temperature**, resulting in a cascade of illnesses, including heat cramps, heat exhaustion, heatstroke, and hyperthermia.
- **Impact on Energy**: Heatwaves increase the electricity demand for cooling purposes, leading to strain on power grids and potential blackouts.
- **Impact on the Economy**: Heatwaves disrupt economic activities, affecting productivity of workers and labourers, lacking the access to reliable electricity for cooling during heatwaves. According to an ILO study at 34°C, workers can lose up to 50% of their work capacity.
- **Impact on Water Resources**: Heatwaves **worsen water scarcity** crises due to drying up of water bodies and decrease in the groundwater table. Inter-State water conflicts become exacerbated during such crises.
- **Impact on the Food Security**: The rise in heat waves **increases the probability of droughts**, enhance demand of irrigation water, which impacts agricultural production and increases food insecurity.

What steps have been taken by the government to address the issue of heatwaves?

Action	Details
Heat Action Plans	• The Government of India has updated **Heat Action Plans** across 23 States, aiming to strategically combat and manage heatwaves.
Public Health Preparedness	• The Union Health Ministry reviews the preparedness for managing **Heat-Related Illnesses** (HRIs) periodically indicating a proactive approach to address the health impacts of heatwaves.
Focus on Vulnerable Groups	• The Government initiatives **prioritize protecting high-risk groups** like children, pregnant women, the elderly, and people with chronic diseases.
Awareness Campaigns	• About 100 districts have initiated campaigns to raise awareness about heatwave risks and precautions.

What should be the way forward?

- **Effective implementation of Heat Wave Action Plan**: Effective implementation of the Heat wave action plan with the States playing a leading role and sharing responsibility with other stakeholders is necessary. *(Read More on Heat Action Plan).*
- **Sustainable Cooling**: Passive cooling technology like construction of **well-ventilated buildings** and the use of porotherm bricks, can be a alternative to **address the urban heat island effect** for residential and commercial buildings.
- **Heatwave Mitigation Plans**: Heatwave mitigation plans which include access to drinking water, ORS (Oral Rehydration Solutions), shades at public places, flexible working hours in workplaces must be effectively designed and implemented.
- **Creation of more Green Spaces**: According to the UN, investment of US$ 100 million in street trees globally can bring a temperature reduction of ~1°C. India must scale up its reforestation and tree plantation efforts e.g., *Haritha Haram* project of Government of Telangana to increase the green cover in Telangana from the current 24% to 33%.
- **Adoption of Energy Efficient Solution**: The masses should be encouraged to adopt more energy efficient solutions like using desert coolers in place of air conditioners in dry areas.

10. Maoist Insurgency in India

News: The security forces have killed at least 29 Maoists in the Bastar region in Chhattisgarh. The area controlled by Maoists has shrunk over the last decade; however, the insurgency is far from being eliminated.

What is Maoist Insurgency?

- It is also known as **Left-wing Extremism** (LWE) or **Naxalism**.
- It is an armed movement rooted in political ideologies that seeks to bring socio-political and economic changes through violent means.

Prevalence of Maoist Insurgency or Left-Wing Extremism (LWE)

- The Maoist Insurgency started in 1967 and gradually spread to different parts of the country. The Maoist insurgency **peaked in the early mid-2000s**.
- The Government's continued push to end Maoist insurgency through the mix of **anti-Naxal Operations** and **Welfare measures for the tribals**, has started showing results. According to the Ministry of Home Affairs (MHA), LWE has been **limited to 70 districts**. Out of these 70 districts, **25 districts are** '**Most LWE affected Districts**'.

A map of India's Maoist conflict

A crackdown on Maoist rebels has led to a rise in the number of casualties in the country's tribal areas. Here are the regions that are most affected.

- Highly affected
- Moderately affected
- Marginally affected

Source: satp, Government of India, Ministry of Home Affairs

- The LWE has been limited to **jungles of Central India** and places of **sparse tribal presence** with a weaker presence of the developmental and welfare state relative to the rest of India. The prevalent area of LWE is called '**Red Corridor**'. This region stretches across several States, like Chhattisgarh, Jharkhand, Bihar, Odisha, West Bengal, and parts of Andhra Pradesh, Telangana, and Maharashtra.
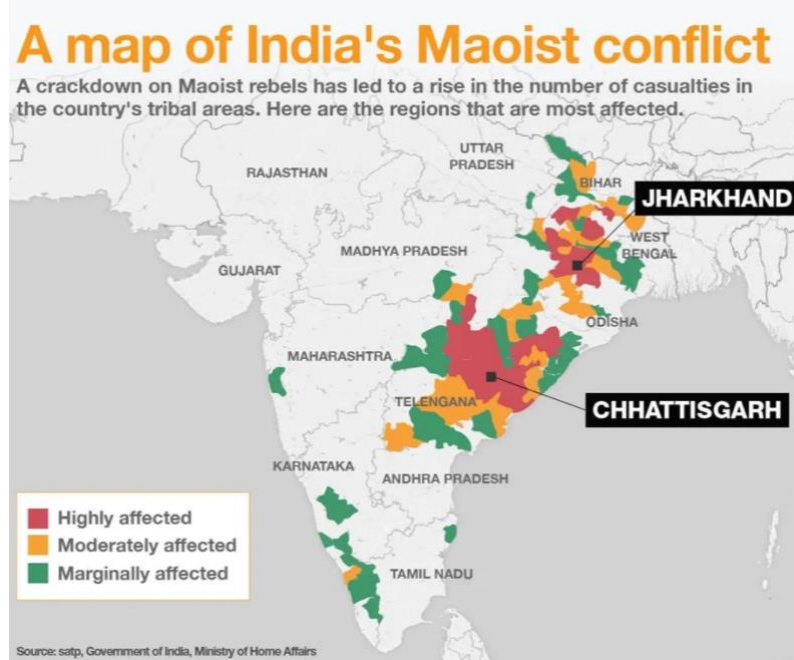
What are the reasons that led to the growth of Left-Wing Extremism in India?

The **Bandopadhyay Committee** (2006) identified **gaps in governance** and **extensive discrimination against tribals** in economic, socio-political and cultural spheres as the primary causes for spread of Naxalism:

- **Inequitable Development**: Socio-economic inequities and unemployment in hinterland region nudge the youth to take up arms. There has been disruption of traditional occupations and lack of alternative work opportunities.
- **Gaps in Governance**: **Governance deficit** in the remote parts of Red Corridor regions led to the growth of LWE. There was **development apathy** and **huge corruption** in the red corridor area.
- **Political Marginalization**: The tribal groups were politically marginalized by the self-serving dominant groups. This led to **political deprivation** among the marginalized groups leading to hopelessness and a sense of powerlessness.
- **Land Alienation and Displacement**: The land reforms and efforts in land redistribution after Independence didn't achieve desired results. The development projects and acquisition of land for industrial purposes have led to the **displacement of local communities** without adequate rehabilitation. This has been a focal point of Naxalite agitation.

- **Discrimination Against Tribals**: There has been poor implementation of laws prohibiting transfer of tribal land to non-tribals in the Fifth Schedule areas. Non-regularisation and hasty rejections of land grants of traditional land rights under FRA, 2006 have also led to the growth of LWE.

What are the challenges posed by Left-wing extremism (LWE) in India?

- **Threat to Internal Security**: LWE poses significant internal security threat to India, leading to violent clashes and loss of lives among security forces and civilians. According to an estimate, ~7,800 civilians, 2,700 security personnel and 3,300 Naxalites were killed between 1999-2018.
- **Social and Economic Disruption**: The Maoists insurgency has disrupted social and economic development in the affected regions, **hindering infrastructure and welfare projects**. Maoists have specifically targeted Government's efforts to build roads, schools and other infra (like mobile towers) to gain control.
- **Forced Recruitment and Child Soldiers**: Maoist groups have been known to force vulnerable individuals, including children, to join their ranks, exploiting them for their cause. This practice violates human rights and disrupts the lives of countless innocent people.
- **Extortion and Illegal Activities**: LWE groups often engage in extortion and other illegal activities to fund their operations. They demand 'protection money' from local businesses, leading to economic stagnation in affected areas.
- **Political Instability**: Maoist insurgency contributes to political instability, as the affected regions struggle with governance issues and weakened trust in democratic institutions.
- **Human Rights Violations**: LWE groups have been known to commit human rights violations, including extrajudicial killings, abductions, and torture. These actions not only harm innocent civilians but also tarnish India's international reputation.
- **Alienation of Tribal Populations**: Maoist insurgents often exploit and alienate tribal population in their stronghold, creating a cycle of violence and mistrust between the communities and the Government. This makes it difficult to address the root causes of extremism and to foster long-term peace and stability.

What steps have been taken to control Maoist insurgency in India?

- The Government of India has employed various approaches to control LWE, focusing on a combination of security, development, and political initiatives.

Development Schemes for LWE

Scheme/Policy	Details
Road Connectivity Project for LWE-affected areas (RCPLWE)	• The Government introduced the scheme in 2016 for **improving road connectivity in LWE-affected States**. • The roads included under the scheme have been identified by the **Ministry of Home Affairs** in consultation with the State Governments and the security agencies. **8,124 km roads** and **306 bridge works** have been completed under the scheme.
LWE Mobile Tower Project	• This project has been launched to **improve mobile connectivity** in the LWE affected areas. The aim is to **improve the communication network** for better governance delivery.
Aspirational District Programme	• The **Ministry of Home Affairs** has been tasked with the monitoring of **Aspirational Districts Programme** in 35 LWE affected districts. • The Government has implemented various welfare and development schemes to address the root causes of LWE, such as **unemployment**, **poverty** and **social inequality** in these aspirational districts.

Security Schemes for LWE

Scheme/Policy	Details
National Policy and Action Plan to address Left Wing Extremism 2015	• The **comprehensive action plan** aims to enhance the **capabilities of security forces** to combat LWE. • It ensures that the rights and entitlements of local communities are safeguarded and focuses on socio-economic development in affected regions.
SAMADHAN Doctrine	• It encompasses the entire strategy of Government from short-term policy to long-term policy formulated at different levels. • **S**: Smart Leadership, **A**: Aggressive Strategy, **M**: Motivation and Training, **A**: Actionable Intelligence, **D**: Dashboard-based KPIs (Key Performance Indicators) and KRAs (Key Result Areas), **H**: Harnessing Technology, **A**: Action plan for each Theatre, **N**: No access to Financing.
Security Related Expenditure (SRE) Scheme	• Under the Security Related Expenditure (SRE) Scheme, the Central Government **reimburses the security related expenditure** of 10 LWE affected States. • The security related expenditures are related to training and operational needs of security forces, ex-gratia payment to families of civilians, security forces killed/injured in violence, rehabilitation of surrendered LWE cadres, community policing, village defence committees and publicity materials.
Special Infrastructure Scheme (SIS)	• Under this scheme, funds are being provided to States for **strengthening the infrastructure related to Security**. • Under the scheme 250 Fortified Police Stations are being constructed.

Socio-Political Schemes for LWE

Scheme/Policy	Details
Panchayat Extension to Scheduled Areas (PESA) Act, 1996	• Through this Act the Government aims to **strengthen local governance** in LWE-affected areas by **promoting democratic participation** and by empowering the local institutions.
Civic Action Programme (CAP)	• It aims to **bridge the gaps between Security Forces and local people** through personal interaction and bring the **human face of Security Forces** before the local population. • The CAPFs deployed in LWE affected areas are **provided funds for conducting civic activities** for the welfare of the local people.
Media Plan	• Government is implementing this Scheme in LWE affected areas to **counter the false propaganda of Maoists**. Under this scheme activities like **Tribal Youth Exchange programmes** are organised by NYKS along with radio jingles, documentaries and pamphlet distribution.
Inter-State Coordination	• The Government is promoting coordination among States affected by LWE to ensure a unified response e.g., Regular meeting of Union Home Minister with the CMs of all LWE States.
Surrender and Rehabilitation Policies	• Government has introduced surrender and rehabilitation policies for LWE cadres **willing to renounce violence and join mainstream society**. • These policies offer **financial incentives**, **vocational training**, and **support for reintegration into society**.

What are issues associated with government measures to control LWE?

- **Human Rights Violations**: Security operations against Maoist insurgency have sometimes led to human rights violations, including **extrajudicial killings**, arbitrary arrests, and harassment of civilians. These actions can **alienate local communities** and create resentment against the Government.
- **Inadequate Implementation of Development Schemes**: Despite numerous welfare and development programs, their implementation in LWE-affected areas is often hampered by **corruption**, administrative inefficiencies, and a lack of coordination between various agencies. As a result, the intended benefits may not reach the affected communities.
- **Insufficient Capacity Building of Security Forces**: The security forces sometimes lack specialized training, equipment, and intelligence support to effectively tackle Maoist insurgency. This leads to operational failures and increased casualties among security personnel.
- **Reliance on Force**: Excessive focus on security operations overshadows the need for political engagement and dialogue with LWE groups. A purely **militaristic approach** could prolong the conflict and hinder efforts to find a peaceful resolution.
- **Rehabilitation Programs**: The surrender and rehabilitation policies are **not effectively implemented**. There are certain cases of inadequate support for reintegration such as insufficient vocational training or financial assistance.
- **Lack of Trust and Cooperation**: Mistrust between the Government and affected communities hinders the implementation of development initiatives and security operations. Building trust is crucial for fostering cooperation and addressing the root causes of LWE.
- **Political Instability and Opportunism**: Political instability and opportunism undermines efforts to address LWE. Politicians often exploit the issue for electoral gains. This complicates the Government's response to the problem.

What should be done to effectively control Left Wing Extremism?

- **Focus on Development**: The successful implementation of development projects in Andhra Pradesh and Telangana reduced Maoist insurgency. Thus more effort should be put on the effective implementation of development projects.
- **Strengthen Local Governance**: Empowering local governments can address grievances and deliver public services effectively. It can help build trust between communities and Government authorities. This has been seen in the Panchayati Raj system's success in reducing Naxalism in West Bengal.
- **Enhance Security Forces' Capabilities**: Specialized training and better equipment should be provided to security personnel, similar to the Greyhounds force in Andhra Pradesh, which proved effective in countering Maoist insurgency.
- **Encourage Dialogue and Peaceful Resolution**: The Government should explore the possibility of engaging the Maoist groups in meaningful dialogue and ask them to give up arms. The strategy has been utilized with several insurgent groups in the North-east India and has shown some promising results.
- **Foster Community Engagement**: Involving local communities in development projects and decision-making processes can help build trust. It has been demonstrated by the success of the Janmabhoomi program in Andhra Pradesh, where community participation helped reduce Maoist influence.
- **Ensure Accountability and Transparency**: Measures should be strengthened to prevent corruption and human rights abuses. It can bring back the confidence of the local communities in the Government institutions. It will also reduce the influence of the Maoists in the region.

Factly

Polity

1. Checking Use of Cash, Liquor During Elections: Steps Taken by the Election Commission

News: The ECI takes various steps to check movement of cash, liquor, jewellery during the elections.

Steps to check Money Power during Elections
- The Election Commission of India (ECI) **caps campaign expenditure at INR 95 lakh per constituency** in **bigger States**, and **INR 75 lakh per constituency** in smaller States.
- Before each election, the ECI instructs **police**, **railways**, **airports**, the **Income Tax** (IT) **Department**, and other agencies to **closely monitor the movement of cash**, **liquor**, **jewellery**, **drugs**, and **gifts** to prevent their distribution to sway voters.
- The ECI has **specialized teams** to address election expenditure and violations, including **expenditure observers in each district**, **Static Surveillance Teams** (SST), and **flying squads** led by a Senior Executive Magistrate.

Rules for carrying cash and other items
- Authorities are supposed to instantaneously report to the IT Department if anyone is **carrying cash worth more than INR 10 lakh**, or more than 1 kg in bullion.
- Cash or bullion **can be seized till verification is completed**, in order to ensure that it is not related to any political party or candidate.
- If a vehicle carrying a candidate, her agent or a party worker is found with over INR 50,000 in cash, drugs, liquor, arms or gift items worth more than Rs 10,000, then the items can be **instantly seized**.
- If during checking, there is any **suspicion of a crime**, the seizure will be done under the **Criminal Procedure Code** (CrPC).
- When it comes to carrying liquor across State borders, the excise laws of the respective State will apply.

Procedure After Seizure
- In case any cash or other items are seized, authorities are meant to **return them if they are not related to any candidate or a crime**.
- A District-level Committee looks at grievances in order to avoid inconvenience to the public and genuine persons.
- The Committee, including the District Election Office's **Expenditure Monitoring Officer** and the **District Treasury Officer**, will automatically review each seizure case where there's no complaint or the seizure isn't connected to any candidate, political party, or election campaign.

2. Allocation of Election Symbols

News: There has been a controversy in Maharashtra about allocation of similar symbols to a political party and an independent candidate in the ongoing General Elections.

About Allocation of Electoral Symbols
- The allocation of symbols in elections falls under the jurisdiction of the **Election Commission of India** (ECI).
- The process is governed by **The Election Symbols (Reservation and Allotment) Order**, **1968**, which aims to **define**, **reserve**, and **assign symbols** for **recognized political parties**.

- Symbols are classified as either **reserved** (reserved solely for **recognized parties**) or **free** (accessible to **unrecognized registered parties**).
- Exclusive symbols are allocated to recognized National and State Parties.
- Candidates from unrecognized registered parties can select from free and non-exclusive symbols.
- **Rule 10B** of the Symbols Order states that a 'registered unrecognized party' can use a common free symbol for two general elections.
- The Election Commission publishes lists of parties along with their symbols in the Gazette of India.

Preference of Political Parties
- Unregistered parties need to provide **10 preferred symbols** from the Commission's list. They can also propose **3 new symbols** with designs and names for consideration by the Commission.
- These new symbols must meet certain criteria, avoiding similarity to existing symbols and **steering clear of religious or communal connections or animal depictions**.
- If a recognized political party splits, the **Election Commission decides on allocation of symbols**.

3. Curative Petition

News: The SC has recently set aside the 2017 Arbitral award in the dispute between the Delhi Metro Rail Corporation and the Reliance Infrastructure group. Legal experts have questioned the use of curative jurisdiction in a commercial dispute and overturning an Arbitral Award.

About Curative Petition
- It is the final and last option for the people to get justice.
- The SC allowed the curative petitions in *Rupa Ashok Hurra Vs. Ashok Hurra (2002)* as the last resort to correct judgments. It may be filed after a **review plea** against the final conviction is dismissed.
- The objective of the Curative Petition is to ensure there is **no miscarriage of justice** and to **prevent abuse of process**.

Criteria for Admission of Curative Petition
- It can be entertained if the petitioner establishes that there has been a **violation of the principles of natural justice**.
- It can be admitted where a judge has failed to disclose facts that raise the apprehension of bias.
- A curative petition needs a senior advocate's certification that mentions a good number of reasons to consider it.

Hearing of Curative Petitions
- A curative petition must be first circulated to a bench of the 3 senior-most judges, and the judges who passed the concerned judgment (If available).
- It only gets listed for a hearing if **most of the judges agree that it is necessary** and, ideally, it is heard by the same Bench as before.
- Curative petitions are usually **decided by judges privately**, unless someone asks for an **open-court hearing**.
- At any point, the Bench can ask a senior counsel to assist as *amicus curiae* during the curative petition review.
- If the Bench decides at any point that the petition is baseless and without any merit, it can make the petitioner pay extra costs.

4. Section 153A of the IPC

News: The SC has clarified that for an act to be considered an offense under Section 153A of the Indian Penal Code, it must cause animosity and discord between two or more groups or communities.

About Section 153A of the IPC
- Section 153A of the IPC aims to **penalize individuals who promote hostility between different groups** based on factors like **religion**, **caste**, **race**, **place of birth** or **residence**, or **language**.
- The provision holds accountable those who:
  o Spread hate through words (spoken or written), images, or signs to stir up discord, animosity, or unrest among people of different groups, religions, castes, or communities.
  o Spread disharmony and disturb the public tranquillity of the people belonging to different racial and religious groups.
  o Assist in arranging activities that promote and train participants to use criminal force and violence against people of different racial and religious backgrounds.
  o The section covers the above offences committed at any place of worship.

Punishment Under Section 153A
- The offense is **cognizable** and can lead to up to **3 years in prison**, a fine, or both.
- If the offense happens in a **place of worship**, the punishment can increase to **5 years in prison** and a fine.
- Under Section 153A, the **offense is non-bailable**, and the accused is tried by a **first-class magistrate**.
- A **cognizable offense** allows a police officer to investigate and make an arrest **without needing a magistrate's order or a warrant**.
- According to the National Crime Records Bureau (NCRB), the **conviction rate of cases registered under Section 153A is only 20.2%** (as of 2020).

Safeguards Against Misuse
- Sections 153A and 153B need **Government approval before starting prosecution**. This approval is necessary before the trial, not during the initial investigation.
- To limit arbitrary arrests, the Supreme Court set guidelines in 2014 in the case of **Arnesh Kumar v State of Bihar**.
  o According to these guidelines, for crimes with sentences less than 7 years, the police cannot arrest someone automatically before investigating.

5. Adjudicating Authority Under PMLA

News: The Adjudicating Authority under the PMLA has confirmed that it has attached assets worth INR 752 crore belonging to the National Herald newspaper.

About Adjudicating Authority under PMLA
- Under the **Prevention of Money Laundering Act** (PMLA), the Adjudicating Authority has to determine whether the properties seized by the Enforcement Directorate (ED) are **linked to money laundering or not**, **within 180 days**.
- **Section 5 of the PMLA** allows the **seizure of any property** that is suspected to have been acquired by the proceeds of crime in a case of any offence that is listed in the schedule of the law.
- The attachment order is issued when the ED Director suspects that the proceeds of crime may be concealed, moved, or used in a way that could disrupt confiscation proceedings.

- **Provisional Attachment Order**: It is valid for a period of 180 days, within which the Adjudicating Authority must confirm the attachment. If within this time, the attachment is not confirmed, then the **property is automatically released from attachment**.
- The accused can continue to use the property until the Adjudicating Authority approves the seizure. **After, adjudicating authority's approval, ED will take control of it**.

Process After Attachment
- **Right to Appeal**: The accused has the right to challenge the Adjudicating Authority's confirmation order at the PMLA's **Appellate Tribunal** within 45 days.
- **Appeal Against Appellate Tribunal**: If the Appellate Tribunal also confirms the order, the accused can file a **plea in the High Court**.
- **Status of Property**: Unless the property is released, the owner won't have access to it as long as trial is not over.
- **Final Confirmation**: Once the confirmation is final, if it's a residential property, the ED will ask the owner to leave with their belongings, and the ED will take over possession.
- **Conviction**: If there's a conviction, the trial court may order confiscation of the attached property and transfer ownership to the Union Government.

6. Powers of the Enforcement Directorate (ED)

News: The SC, in a recent hearing on a sand mining case, has endorsed the Enforcement Directorate's (ED) authority to summon "anyone for any information".

About Enforcement Directorate (ED)

Aspect	Details
About ED	• It is a specialized **financial investigation agency** under the Department of Revenue, **Ministry of Finance**. • It is headquartered in New Delhi.
Origin	• On 1 May 1956, an 'Enforcement Unit' was formed, in the Department of Economic Affairs, for handling **Exchange Control Laws** violations under **Foreign Exchange Regulation Act**, **1947**. • In 1957, the Unit was renamed as 'Enforcement Directorate'.

Mandate	• It has been given the task of enforcing the provisions of two special laws
	  o Foreign Exchange Management Act, 1999 (FEMA).
	  o The Prevention of Money Laundering Act, 2002 (PMLA).

Key Powers of the ED
- **Probing Financial Crimes**: The ED has the authority to **probe and enforce regulations** concerning money laundering, breaches of foreign exchange regulations, and similar economic infractions.
- **Freezing and Seizing Assets**: The ED is authorized to **freeze and confiscate assets** believed to be connected to money laundering or illicit operations.
- **Properties Attachment**: The Directorate has the authority to **seize properties** implicated in or derived from money laundering activities, thus halting their disposal during the investigation. This attachment directive lasts for 180 days and may be prolonged by the Adjudicating Authority.
- **Issuing Summons**: **Section 50(2)** of the PMLA allows the ED to **summon any individual** deemed necessary to provide evidence or produce records during an investigation or proceeding under the statute.

- **Section 50(3)** mandates that the summoned person **must attend in person or through authorized agents**, providing truthful statements and required documents.
- **Arrests**: The Agency can arrest individuals engaged in money laundering or foreign exchange violations, as per the Law's provisions. **Arrests may be made with or without a warrant**, depending on the circumstances of the case.

7. Dispute Over Power to Levy Duty on Industrial Alcohol

News: A Constitution Bench of the SC has begun to hear arguments on whether the Union or State Governments hold exclusive control over regulating levying of duty on the Industrial Alcohol.

Excise Duty Levied on Alcohol

- Excise duty on alcohol is a major part of a State's income. States often raise additional excise duty on alcohol to boost their revenue.
- The Supreme Court is hearing a case related to the question whether States have a right to regulate and tax Industrial Alcohol.

Industrial Alcohol

Industrial Alcohol is also known as **denatured alcohol or ethanol**. It is **not meant for human consumption**.

It is typically used for **industrial purposes** such as **solvent extraction**, **fuel**, **antifreeze**, and as a precursor in the **production of chemicals and pharmaceuticals**.

Arguments Before the Bench

- **States**: States argue that they possess authority under **Entry 8 of the State List** in the Constitution, which pertains to '**intoxicating liquors**'. The States argue that the term intoxicating liquor includes "all liquids containing liquor" including the industrial variety.
- **Union**: The Union Government asserts **exclusive control** over it through the **Industries (Development and Regulation) Act, 1951 (IDRA)**. **Entry 52 of the Union List** and **Entry 33 of the Concurrent List** pertain to industries regulated by Parliament in the interest of the public.
- Subjects in the Concurrent List can be legislated upon by both States and the Union. However, if there is a Union law, State laws cannot contradict it.

Previous Judgments of the Supreme Court

- In *Synthetics & Chemicals Ltd. v. State of Uttar Pradesh (1989)*, it was established that States do not have the authority to levy taxes on industrial alcohol. Under Entry 8 of the State List, States' powers were limited to regulating "intoxicating liquors" which are different from industrial alcohol.
  - However, the SC said that the States retain the power to **regulate the usage of industrial alcohol** to prevent its misuse for drinking purposes.
- In *Ch Tika Ramji v State of UP (1956)*, it was affirmed that States possess the authority to regulate industries listed in the Concurrent List (Entry 33), even if the Centre holds some level of control.

8. Strategic Litigation Against Public Participation: SLAPP Suits (Intimidation Suits)

News: The Supreme Court has overruled a trial judge's order that had directed Bloomberg to remove its article on SEBI's investigation into Zee Entertainment Enterprises (ZEE).

About SLAPP Suits

- SLAPP stands for Strategic Lawsuit Against Public Participation.
- The concept of a SLAPP lawsuit evolved in the US. The lawsuits are **filed against critics to intimidate or silence them** by burdening them with the cost of a legal defence until they abandon their criticism.
- The objective of the SLAPP suits is to target those who speak out against abuse of power.

- SLAPP suits are filed against acts like journalism, advocacy, whistleblowing or even peaceful protests.
- The focus of the lawsuit is not victory. The petitioner's (one who files the lawsuit) goal is accomplished if the defendant succumbs to fear and intimidation and then subsequently withdraw his criticism.
- They are routinely filed for **defamation**, **abuse of process**, malicious prosecution, conspiracy, **invasion of privacy**, and tortious interference with contract or business relationships e.g., most common SLAPP suits often involves a powerful corporation suing local citizens for speaking against their company.
- Thus SLAPP lawsuits are exploited by the powerful to **curb the use of right to freedom of expression** against them.
- In the present case involving Bloomberg and ZEE, the SC expressed concern regarding the growing use of SLAPP suits "*to prevent the public from knowing about or participating in important affairs in the public interest*".
- Bloomberg had published a news report regarding investigation by SEBI against ZEE on the allegations of diversion of funds by the owners.

Policy

1. Registration of Births and Deaths (Amendment) Act, 2023 and Rules for Registration of Birth

News: The Ministry of Home Affairs has drafted model rules for registration of childbirth.

About the New Rules for Childbirth Registration

- When registering a child's birth, parents will now need to **specify the religion of both the father and mother separately**. Earlier, birth registers noted the family's religion only.
  - This update also applies to parents of adopted children.
- According to the **Registration of Births and Deaths (Amendment) Act**, **2023**, information on birth and death registrations will be **maintained in the national database**.

National database

All reported births and deaths are to be digitally registered through the Centre's portal for the Civil Registration System

- The database may be made available to other authorities preparing or maintaining other databases such as electoral rolls or ration cards
- Information from digital certificate can be used for purposes such as admission to an educational institution or appointment to government posts
- Data is used by the govt. for socio-economic planning and to evaluate the effectiveness of social sector programmes

About the Registration of Births and Deaths (Amendment) Act, 2023

- It amended the **Registration of Birth and Death (RBD) Act,1969**. According to Registration of Birth and Death (RBD) Act, 1969 a birth or death must be registered **within 21 days**. If not registered within this period, it can be registered under the RBD Act with an order from a First-Class Magistrate, verifying the details of the event.

Key features of Registration of Births and Deaths (Amendment) Act of 2023

- **National Database**: According to 2023 Amendment Act, the birth and death database will be maintained at the national level.
- **Connecting Database**: It may be used to update various databases including the National Population Register (NPR), electoral rolls, Aadhaar, ration card, passport, driving license, property registration, and any other databases as notified.
- **Digital Records**: All births and deaths in the country must be digitally registered through the Centre's Civil Registration System portal (crsorgi.gov.in).
  - Digital birth certificates issued through this system will serve as a single document to verify the date of birth for various services, including admission to educational institutions.

- **Mandatory Data Sharing by States**: States will be required to register births and deaths on the Centre's Civil Registration System (CRS) portal and to share the data with the **Registrar General and Census Commissioner of India** (RGI), operating under the Union Ministry of Home Affairs.

2. Committee to Address Issues Faced by LGBTQIA+ Community

News: The Union Government has constituted a Committee to address issues faced by the LGBTQIA+ Community.

About the Reasons to Constitute the Committee

- **Address Discrimination and Violence**: The community faces violence and systemic discrimination, especially in accessing social welfare programs.
- **Supreme Court's Directive**: The creation of the Committee follows a directive from the Supreme Court, which, in *Supriyo vs Union of India (2023)*, emphasized the need for legislative action to recognize and protect the rights of same-sex couples.
- **Public Support for LGBTQIA+ Rights**: A Pew Research survey showed that 53% of Indian adults favor legalizing same-sex marriages, indicating a shift in public opinion that supports the committee's objectives.

About the View of the Supreme Court

- The Supreme Court, in *Supriyo vs Union of India* **(2023), did not grant constitutional validity to same-sex marriage** but instead shifted the responsibility to the Legislature.
- **Specific Rights Mentioned**: The Court listed specific rights for same-sex couples, including being treated as family for banking, medical needs, jail visitations, and last rites.
- **Legal Consequences**: The Court also outlined legal consequences like succession rights, maintenance, financial benefits under laws like the Income Tax Act, and rights related to employment such as gratuity, family pension, and insurance.

Progress on Queer Rights in India

- The progress on queer rights in India has shown a slow and uneven advancement.
- **Judicial Landmarks**: A significant judicial action includes the Supreme Court's decision in *Navtej Singh Johar v. Union of India (2018)*, to read down the provisions of **Section 377** (of IPC, that criminalized homosexuality).
  - It was a progressive judgment but didn't address the broader rights of the LGBTQIA+ community.
- **Political Manifestos**: Only a few political parties address LGBTQIA+ rights in their election manifestos, highlighting the lack of widespread political support for queer rights.

3. 4Ps of India's Development Policy

News: India's key development and welfare works, like the Swachh Bharat Mission (SBM), have been driven by 4 key Principles (4Ps).

About the 4Ps of India's Development Strategy

- India's development strategy, particularly exemplified by the Swachh Bharat Mission (SBM), is structured around **4 key principles (4Ps)**:
- **Political Leadership**: The advocacy for change has been driven by the top political leadership. The Prime Minister has been directly involved in implementation and monitoring; and has raised the issue in his speeches regularly.
- **Public Financing**: The Government has invested approximately US$ 20 billion in sanitation. It shows a commitment to prioritizing sanitation alongside other national developmental goals.

- **Partnerships**: The SBM **collaborated with international organizations** like the World Bank, UNICEF, and the Bill and Melinda Gates Foundation, alongside local governments and NGOs, demonstrating a multi-stakeholder approach.
- **People's Participation**: Emphasizing community involvement, the initiative saw mass movements across rural India, with villages striving to become open defecation free through collective local efforts.
- The principles of the SBM are now being **applied to other critical global challenges**, including climate change and pandemics, by the World Bank and other international agencies.
- The approach emphasizes the importance of leadership, funding, cooperation, and community involvement in tackling large-scale public issues. *(Refer EPIC February 2024 (click) for Improving Access to Sanitation in India)*.

4. Vibrant Villages Programme

News: The Government has allocated INR 1,050 crore for FY2024-25 for the Vibrant Villages Programme in the Interim Budget.

About the Vibrant Villages Programme

- It is a **centrally sponsored scheme** introduced in the Union Budget 2022-23, to be continued until 2025-26.
- It aims to **enhance the living standards of residents in identified border villages** by focusing on their development, improving their quality of life, and addressing outmigration along the northern border.
- The **Union Ministry of Home Affairs** is the nodal ministry for the scheme.
- The scheme covers the border regions of **Himachal Pradesh**, **Uttarakhand**, **Arunachal Pradesh**, **Sikkim** and **Ladakh**. A total of 2,962 border villages in 5 States will be developed under this scheme.
- **Vibrant Village Action Plans**: The district administration, in collaboration with Gram Panchayats, will formulate **Vibrant Village Action Plans**. These plans will guarantee full coverage of both Central and State schemes, avoiding any overlap with the **Border Area Development Programme.**
- **Growth Centres**: The Scheme will also develop growth centres on the '**hub-and-spoke model**'. It will be done through the promotion of **social entrepreneurship**, **empowerment of youth and women** through **skill development** and **entrepreneurship**.
- It will **create livelihood opportunities** through agriculture, horticulture, tourism, cultural heritage, skill development, and entrepreneurship.
- The program also seeks **to enhance road connectivity**, **housing**, **rural infrastructure**, **energy**, **television**, and **telecom connectivity** in remote areas.

5. BhashaNet Portal

News: The Government of India has unveiled the BhashaNet Portal.

About the BhashaNet Portal

- It has been launched by the **Ministry of Electronics and Information Technology** (MeitY) and **National Internet Exchange of India** (NIXI).
- Its objective is to **advance digital inclusion** and **promoting Universal Acceptance** across India.
- Its key features include:
  - **Multilingual Support**: The portal will provide resources and information in multiple Indian languages, making it accessible to a wider audience.
  - **UA Readiness Tools**: Developers and businesses can access tools and guidelines to help them assess and improve the UA readiness of their applications and systems.
  - **Best Practices**: The portal will showcase best practices and case studies from organizations that have successfully implemented UA, serving as a source of inspiration and guidance for others.

- **Significance**
  o It will support the cause of **Universal Acceptance** by providing resources, tools, and information to help developers, businesses, and organizations make their applications and systems **Universal Acceptance-compliant**.
  o It will **bridge the digital divide** and ensure that everyone, irrespective of their language or script, can access and benefit from digital services.
- **Universal Acceptance**: It is a concept that aims to ensure that all domain names and email addresses, regardless of language or script, can be used by all internet-enabled applications, devices, and systems.

6. Girl Empowerment Mission (GEM) by NTPC

News: National Thermal Power Corporation has launched the latest edition of Girl Empowerment Mission.

About the Girl Empowerment Mission (GEM)
- It is the flagship **Corporate Social Responsibility** initiative by NTPC.
- The program aligns with the Government of India's *Beti Bachao*, *Beti Padhao* initiative.
- It aims to **tackle gender inequality** by nurturing girls' imaginations and fostering their ability to explore opportunities.
- GEM **facilitates empowerment** by conducting a 1-month workshop for young girls over the summer break, providing a platform for their **comprehensive development and empowerment**.
- The Mission is dedicated to empowering girls by identifying and **fostering their leadership skills** to prepare them for the future.
- It includes interventions that focus on **health**, **hygiene**, **safety**, **fitness**, **sports**, and **yoga**.
- The GEM Mission has grown into a national movement. Despite COVID-19 setbacks in 2020 and 2021, it has continued to expand, **benefiting 7,424 girls to date**.
- In 2023, the program reached 2,707 girls across 40 NTPC locations in 16 Indian states.

Economy

1. Current and Capital Accounts

News: According to RBI, India's Current Account Deficit (CAD) has narrowed to 1.2% of GDP to US$ 10.5 billion in October-December 2023. The CAD was 1.3% of the GDP in July-September 2023.

About Current Account
- It records transactions related to **trade in goods and services**, **investment income**, and **transfers**.
- Its components include the **balance of trade** (exports and imports of goods), **services**, **net investment income**, and **net cash transfers**.
- In case of Current account, a **negative balance indicates higher imports than exports**, while a positive balance shows higher exports.
- It is a key indicator of the country's external sector.

About Capital Account
- It reflects the **net change in ownership of national assets**.
- It deals with the **sources and application of capital**, such as **Foreign Direct Investment** (FDI), **Portfolio Investment** (FPI), and **Government loans**.
- It records the **trading of foreign assets and liabilities**, including investments, loans, and banking capital movements.

- In case of capital account, **a surplus indicates an inflow of money into the country**, while a **deficit indicates capital moving out of the country**.

2. Gross Fixed Capital Formation (GFCF)

News: Private investment has failed to pick up despite stimulus by the Government of India. Slow Gross Fixed Capital Formation (GFCF) is a major challenge before the Indian economy.

About Gross Fixed Capital Formation (GFCF)

- GFCF refers to the growth in the size of fixed capital in an economy. Fixed capital requires investment for its creation.
- GFCF indicates how much of the new value added in an economy is **invested rather than consumed**. It measures the **value of acquisitions of new or existing fixed assets** by the **Business sector**, **Government**, and **Households** (excluding their unincorporated enterprises) **minus disposals of fixed assets**.

Source: World Bank. Trend of GFCF (Public + Private) in India.

- GFCF serves as a rough indicator of **how much the private sector in an economy is willing to invest**.

Importance of GFCF

- GFCF helps in creation of fixed capital that **helps to boost economic growth** and **improve living standards**.
- Fixed capital largely determines the **overall output of an economy**.
- **Developed economies** (like the US) possess **more fixed capital per capita** than developing economies such as India.

Trend of Private Investment in India

- In India, private investment began to pick up significantly after the **economic reforms** of the late 1980s and the early 1990s that **improved private sector confidence**.
- From independence to economic liberalisation, private investment largely hovered around 10% of the GDP. Public investment as a percentage of GDP, on the other hand, steadily rose over the decades from less than 3% of GDP in 1950-51 to overtake private investment as a percentage of GDP in the early 1980s.
- **Public investment began to drop post-liberalisation** with private investment taking on the leading role in fixed capital formation. The growth in private investment lasted until the global financial crisis of 2007-08. It rose from around 10% of GDP in the 1980s to ~27% in 2007-08.
- From 2011-12 onwards **private investment began to drop** and hit a low of 19.6% of the GDP in 2020-21.

3. Jobs for Resilience Report by the World Bank

News: The World Bank, in its regional update 'Jobs for Resilience', has stated that countries in the South Asian region, including India, are not generating sufficient jobs to support their youthful populations.

Observations Made by the World Bank

- **Decline in Employment Ratio**: The World Bank Report observed that India has **failed to match its job creation** with the **expanding working-age population from 2000 to 2023**.
  - As a result, India experienced a more **significant decline in its employment rate** compared to any other nation in the region, except Nepal, until 2022.
  - In 2023, **South Asia's employment ratio was 59%**, compared to **70% in other emerging markets**. The World Bank has highlighted that South Asia was the only region where the proportion of employed working-age men decreased over the past two decades.
  - This puts the **South Asian region's demographic dividend at risk**, despite experiencing the world's fastest economic growth, which is projected at 6.0-6.1% for 2024-25.
- **Low Female Participation**: The employment rates for women in several South Asian countries, including India, rank among the lowest globally, at less than 40%.
- **Affected Sectors**: The poor employment patterns in the area mainly affected non-agricultural sectors like manufacturing and services.
- **Recommended Actions**: The Bank has suggested **boosting job creation by promoting female participation** in the economy, **enhancing trade openness**, and **enhancing educational standards**.

4. Exchange-Traded Currency Derivatives (ETCD)

News: The RBI has postponed the new norms for the Exchange-Traded Currency Derivatives (ETCD) market.

About Exchange-Traded Derivatives (ETD)

- Exchange-Traded Derivatives (ETDs) are **financial instruments** traded on regulated exchanges, offering transparency, liquidity, and centralized clearing mechanisms.
- They must follow regulations set by market regulators like the **Securities and Exchange Board of India** (SEBI) in India.
- They get their value from **underlying assets** like stocks, bonds, commodities, currencies, or indices.
  - In case of ETCDs, the **underlying asset is currency**.
- Examples of ETDs include:
  - **Futures Contracts**: They involve an agreement to buy or sell an asset, such as wheat or oil, at a set price on a future date.
  - **Options Contracts**: Options contracts let the holder decide whether to buy or sell an asset at a set price within a specific timeframe, without being obligated to do so.

About the New Norms

- The new norms were released in January 2024 and were to come into force from April 05, 2024. The new norms allowed users to **take positions (long or short) in foreign exchange derivatives market**, without having to **establish existence of underlying exposure**, up to US$ 100 million. **The purpose of new norms is to curb speculative trading in currency derivative**.

> **Hedging vs Speculation**
> Speculation involves **trying to make a profit** from a security's price change (stock or commodity).
> Hedging attempts to **reduce the amount of risk**, or volatility, associated with a security's price change.

- The "underlying exposure" in derivatives contracts refers to the order bill or receipt for exporters or importers, and supporting documents for remittances e.g., if an Indian exporter is expecting payment in US dollars in three months, this can be considered as the **underlying contracted exposure**.
- The RBI stated that participation in rupee-involved ETCDs follows the **Foreign Exchange Management Act (FEMA), 1999,** and its regulations. These regulations allow currency derivative contracts involving the rupee,

solely for **hedging exposure to foreign exchange rate risks**. Speculation, in order to make profits, is not allowed.

- Until now, currency traders had the liberty to engage in derivative market trading, **whether they disclosed their underlying exposure or not**. Currency derivatives serve as a means to hedge forex risk. **Disclosure of underlying exposure ensures that currency trade is for hedging and not speculation**.

5. RBI Allows FIIs to Invest in Sovereign Green Bonds

News: The Reserve Bank of India (RBI) has allowed the Foreign Institutional Investors (FIIs) to invest in India's Sovereign Green Bonds (SGBs).

About FIIs

- FIIs are institutional investors that invest in assets belonging to a different country other than that where these organizations are based.
- Investors such as **pension funds**, **mutual funds**, **insurance companies**, **banks**, and other **significant financial institutions from abroad** are included in Foreign Institutional Investors (FIIs).
- FIIs are crucial to a country's financial markets as they **enhance liquidity**, **boost trading volumes**, and affect **stock prices**.
- These investors deploy their capital into various financial instruments like stocks, bonds, and derivatives, driven by their strategic investment plans and views on market conditions.
- The capital influx from FIIs **can positively or negatively impact the local economy**, influenced by factors including **market dynamics**, **Governmental policies**, and **worldwide economic conditions**.
- FIIs in India are governed by the **Securities and Exchange Board of India** (SEBI), and the **Reserve Bank of India** (RBI). They also set the investment limits for them.
- SEBI has over **1450 FIIs registered with it**.

About Green Bonds

- Green Bonds are issued by a sovereign entity, inter-governmental groups or alliances and corporates with the aim that the proceeds of the bonds are **utilised for projects classified as environmentally sustainable**.
- The framework for the Sovereign Green Bonds in India was issued by the Government on November 9, 2022.
- Green bonds are specifically designed to **fund environmentally friendly initiatives**. The projects they finance can include **renewable energy**, **energy efficiency**, **clean transportation**, **sustainable agriculture** etc.
- Green Bonds provide investors with an opportunity to **support environmentally sound practices**, impacting the strategic decisions of the entities issuing the bonds. They offer a way to **mitigate risks associated with climate change** and aim to achieve returns that are comparable to, if not better than, traditional investments.

6. Price-to-Earnings (P/E) Ratio and Hockey Stick Effect

News: The Chairperson of SEBI has remarked that despite high P/E Ratio, foreign investors are attracted to Indian capital markets due to rapid economic growth and trust of global investors on India.

About the Price-to-Earnings (P/E) Ratio

- It is the **ratio of share price of the company** to its **Earnings per Share** (EPS). EPS is calculated by dividing the company's net profit by the total outstanding shares.
- EPS is a measure of a company's profitability. It shows how much money a company makes per share.
- P/E ratio **helps assess the relative value of a company's share**. A high P/E ratio means that company's shares are over-valued and ideally the price of the share should be less (or share price should fall).

- P/E ratio on a standalone basis can't tell about the relative value of a stock. It is **compared with the industry benchmark** or a **competitor firm to determine the relative value** e.g., the average P/E ratio for cement industry may be 20. If a cement company has a P/E ratio of 32, it can be considered as overvalued.

About Hockey Stick Effect

- The **hockey stick effect** is characterised by a **sharp rise or fall** of data points after a long flat period. It is illustrated using the graphical shape of a line chart that resembles a hockey stick.
- The rapid rise in data can be related to rise in business revenue or profits, customer base, or even the global temperatures in the context of climate change.

The 4 Stages of Hockey Stick Growth
1 TINKERING 2 THE BLADE YEARS 3 THE GROWTH INFLECTION POINT 4 SURGING GROWTH — REVENUE
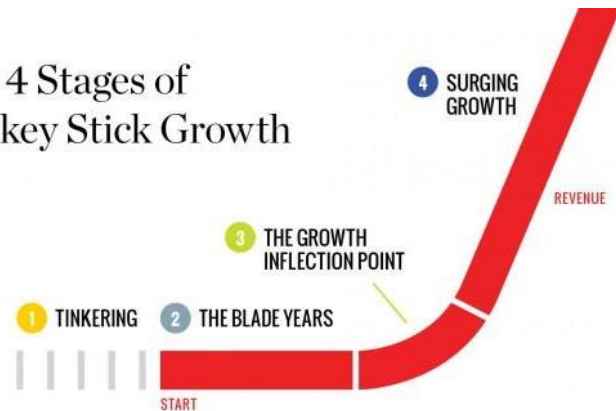
7. Reverse Flipping

News: Several start-ups like Pine Labs are looking to move their headquarters to India.

About Flipping

- It refers to the practice where start-ups, originally based in India, **relocate their holding company and intellectual property (IP) to foreign jurisdictions** (usually the US or Singapore). They do so despite having most of their market, personnel/workers and founders in India.
- This is mainly done for **access to deeper pools of venture capital**, **favourable tax framework**, **market penetration** and **brand positioning as an international entity**.
- Flipping has several negative impacts on the economy:
  - Young, skilled, and innovative founders relocate to overseas jurisdictions **resulting in loss of human capital** and **stalling of innovation** and **technological advancements** within the country.
  - It results in value creation in foreign jurisdictions rather than in India. Home-grown innovative ideas and disruptive technologies **contribute to the economic growth of other countries**.
  - It also results in the **loss of Intellectual Property and Tax Revenue** for India.

About Reverse Flipping

- Reverse flipping refers to the phenomenon where international start-ups relocate their headquarters back to India and to subsequently go public on Indian stock exchanges.
- It is driven by various factors including **India's thriving economy**, **expansive market potential**, rapidly developing **venture capital ecosystem**, **favourable tax frameworks**, strong intellectual property protection, **educated workforce**, and supportive governmental policies.
- Companies opt for reverse flipping due to the ease of accessing capital from private equity and venture capital firms, **regulatory changes regarding round-tripping**, and the increasing maturity of India's capital markets.
- The **Economic Survey 2022-23** suggested measures to expedite the process, such as **simplifying procedures** for tax incentives, taxation of Employee Stock Ownership Plans (ESOPs), capital movements, **reducing tax complexities**, among others.

8. Funding Winter

News: The investments from foreign investors in Indian start-ups declined by 80% in 2023.

About Funding Winter

- It is a term used to describe a **period of reduced capital inflows to start-ups**. It is a **cyclical effect** that happens due to multiple factors which impact the free flow of investments in the market.
- Funding winter can take place due to **geopolitical unrest**, **shift in the monetary policies** or **financial irregularities** in a country. It can also be centric to the relevant sectors.
- The duration of a funding winter is unpredictable. It may last for a long time depending on the multiple factors acting upon it.

Impact of Funding Winter

- It is difficult to raise funding and achieve higher valuations.
- It requires business owners to **reset their priorities** in terms of scaling-up their operations, hiring, or the future plan to get listed on the stock exchange.
- The **focus shifts to cutting costs**, and saving working capital.
- Expenditures like the advertisement expenses, capital expenditures, and **expansion plans are put on hold** in order to improve the sustainability of the firm.

9. India–Mauritius Double Taxation Avoidance Agreement (DTAA)

News: India and Mauritius have amended their Double Taxation Avoidance Agreement (DTAA).

About the Amendments to the DTAA

- India and Mauritius have amended their Double Taxation Avoidance Agreement (DTAA) to **address treaty abuse related to tax evasion or avoidance**. It aims to **prevent misuse of the treaty** for tax-related purposes.
- The amendment applies to all incomes such as **capital gains**, **dividends**, fee for technical services etc.
- The revised agreement implements the **Principal Purpose Test** (PPT), which **denies treaty benefits** such as reduced withholding taxes on interest, royalties, and dividends.
  - It applies when the **main intention behind a transaction or arrangement is to avoid taxes**.
- The preamble of the treaty has been amended to emphasize the intent to eliminate double taxation **without creating opportunities for non-taxation or reduced taxation** through **tax evasion** or **tax avoidance.**
- Following the amendment, any **cross-border structuring of investments** into or out of India via Mauritius must consider the **implications of the BEPS MLI** (Multilateral Convention to Implement Tax Treaty Related Measures to Prevent Base Erosion and Profit Shifting). This is relevant when such structuring **aims to utilize tax treaty benefits** in either India or Mauritius.

Status of Investment from Mauritius in India

- Until 2016, Mauritius was a preferred jurisdiction for investments in India due to the **non-taxability of capital gains** from selling shares in Indian companies.
- The DTAA significantly influenced many **Foreign Portfolio Investors** (FPIs) and entities to invest in India via Mauritius.
- As of March 2024, FPIs from Mauritius contributed INR 4.19 lakh crore, 6% of India's total FPI investment of INR 69.54 lakh crore.

10. Impact of US Interest Rates on the Indian Economy

News: The US Federal Reserve may delay the anticipated cut in the interest rates. This will have a direct impact on Indian economy.

Impact of US Interest Rates on India

Depreciation of Rupee

- A rise in the interest rates in the US causes the investors to **take their investments away from India** and to the US. This causes **appreciation in the value of US Dollar** and **a depreciation in Indian Rupee**.
  - o With a delay in rate cuts, the US$ is expected to stay strong and Rupee will stay weakened.

Imported Inflation

- The depreciation of Rupee **increases the prices of imported goods**, particularly oil and other commodities.
  - o This would **add ~0.4 percentage points to India's inflation** through 2024 and 2025 which would **exacerbate the cost of living and production costs** within India (**imported inflation**).

Slowdown in Growth Rate

- According to ADB's projections, **India's GDP growth may slow slightly** (~0.2 percentage points in 2025).
  - o This is partly due to **increased costs of borrowing and investments**, as global capital shifts towards higher yielding US assets, **reducing the amount of foreign investment flowing into emerging markets like India**.
- Rise in inflation due to higher import prices of oil and commodities (imported inflation) may **force RBI to increase domestic interest rates** and prevent further depreciation of the rupee.
  - o Rise in domestic interest rates may have a negative impact on corporate investments, **slowing down the growth rate of economy**.

Rise in Indian Exports

- On the positive side, a weaker rupee could **make Indian exports more competitive on the global market**, potentially **boosting export volumes**. This could add ~0.05 percentage points to India's GDP growth in 2024.
  - o However, this effect might reverse in 2025 and 2026 as global monetary conditions stabilize and the Rupee potentially strengthens, making exports less competitive again.

11. Impact of Artificial Intelligence on Real Interest Rates

News: Economists estimate that the proliferation of AI and consequent impact on associated economic activities may result in rise in real interest rates.

Possible Impact of AI on Real Interest Rates

- AI will have a direct impact on economic activities.
  - o The development of AI would require **production of high-quality semiconductor chips**. This requires huge investments which will **enhance the demand for capital expenditure** (Capex).
  - o The **productivity of capital** is a major factor in shaping real interest rates. If capital productivity rises significantly due to AI, **real interest rates will also rise**.
  - o AI is expected to give rise to **higher demand for computational power** and need for large data centres. This will increase demand for **energy infrastructure** (hence more investments). It will also require more real estate, boosting overall demand for investments.
  - o AI-enabled drones and AI-driven warfare will encourage countries to invest more in AI capabilities.
  - o Boom in AI may **lead to job loss for millions of workers**. This would require **significant investments to help human workers deal with the resulting changes**.
  - o There may be an **expansion of Government programmes for worker assistance**.
- All these and similar forces will put **pressure on real interest rates**, and they are **expected to rise**. Demand to borrow and invest will go up in future without a substantial increase in savings.

12. Price Stabilization Fund

News: The Union Government has approved the inclusion of wheat and rice under the Price Stabilization Fund (PSF).

About the Price Stabilization Fund (PSF)

- The Price Stabilization Fund (PSF) was set up in 2014-15 under the **Department of Agriculture**, **Cooperation & Famers Welfare** (DAC&FW). The PSF scheme was **transferred to the Department of Consumer Affairs (DOCA)** in 2016.
- The fund management is centrally managed by a **Price Stabilisation Fund Management Committee** (PSFMC) that approves the proposals of all State Governments and Central Agencies.
- The **Small Farmers Agribusiness Consortium** (SFAC) maintains the PSF as a central corpus fund.
- It is aimed at **stabilizing prices of selected commodities** by **distributing or procuring the commodity** as required. It is usually used for activities aimed at **bringing down** or **raising the prices**.

Functions of the PSF

- It helps to **regulate the price volatility** of important **agri-horticultural commodities** like onion, potatoes etc. Pulses have been added subsequently.
- The PSF is utilized for **granting interest-free advance of working capital** to Central Agencies, State/UT Governments/Agencies to **undertake market intervention operations**.
- Apart from **domestic procurement** from farmers/wholesale mandis, **import may also be undertaken** with support from the Fund.
- Under the PSF scheme, **interest-free loans are extended** to State Governments/Union Territories (UTs) and Central Agencies to **cover their working capital** and related expenses incurred in the procurement and distribution of these commodities.

13. National Consumer Disputes Redressal Commission (NCDRC)

News: The Supreme Court has issued notice to two members of the National Consumer Disputes Redressal Commission (NCDRC) seeking an explanation from them for issuing non-bailable warrants.

About National Consumer Disputes Redressal Commission (NCDRC)

- It is a **quasi-judicial commission**. It was **set-up in 1988** under the **Consumer Protection Act**, **1986**.
- Its head office is in **New Delhi**.
- The Commission is headed by a **sitting or a retired Judge of the Supreme Court of India** or a **sitting or a retired Chief Justice of a High Court**.

Mandate

- **Section 21 of Consumer Protection Act**, **1986** says that the National Commission shall have jurisdiction to entertain a complaint valued more than INR 2 crore and also have **Appellate and Revisional Jurisdiction** from the **orders of State Commissions** or the District fora as the case may be.
- **Section 23 of Consumer Protection Act**, **1986**, provides that any person aggrieved by an order of NCDRC, may prefer an Appeal against such order to **Supreme Court of India** within a period of 30 days.

About Quasi-Judicial Bodies

- A quasi-judicial body is a body which has **powers and procedures resembling those of a court of law** or judge such as an arbitrator or tribunal board.
- It is obliged to objectively determine facts and draw conclusions from them so as to provide the basis of an official action.
- Their powers are usually **limited to a very specific area of expertise and authority**, such as land use and zoning, financial markets, public standards etc.
- **National Human Rights Commission**, **National Commission for Women**, **National Commission for Minorities**, etc. are examples of quasi-judicial bodies.

International Relations

1. Sittwe Port (Myanmar)

News: India has gained the rights to operate its second overseas port (after Chabahar) in Sittwe, Myanmar.

About Sittwe Port

- It is situated in the city of Sittwe, the **capital of Rakhine State in Myanmar**.
- It is situated at the **mouth of the Kaladan River**, which flows into the Bay of Bengal.
- The port has been constructed by India as part of the **Kaladan Multi-Modal Transit Transport Project**. *(Refer EPIC February 2024 (click) for Kaladan Multi-modal Project).*
- Its coastal location provides **access to maritime trade routes**, making it a crucial gateway for regional and international commerce.
- Being a **deep-water port**, it is capable of **accommodating large vessels**. Its depth allows for efficient loading and unloading of cargo, facilitating trade and transportation.

Strategic Importance for India

- **Alternative Route for Goods Transport**: Sittwe port serves as an essential outlet for goods from India's north-eastern region. It offers a smoother and **more cost-effective** alternative to the congested traditional land routes.
- **Enhances India's Maritime Connectivity**: The port is positioned close to the Indian Ocean and near the Strait of Malacca. The strategic location of the Sittwe Port enhances India's maritime connectivity and trade routes, while also bolstering regional security.
- **Countering Chinese Aggression**: The move of acquisition of the Sittwe Port supports India's economic ambitions, strengthens its naval capabilities, and demonstrates its commitment to protecting its strategic interests in the Indian Ocean amidst China's growing assertiveness in the region.

2. UN Resolution on Gaza Ceasefire

News: The UN Security Council has passed a resolution calling for a ceasefire in Gaza.

About the UNSC Resolution on Ceasefire in Gaza

- The UN Security Council has passed a resolution **demanding an immediate ceasefire in Gaza**.
- The US allowed the passage of the resolution by **abstaining** and the passage was passed by 14-0 vote.
- Earlier, the **US had vetoed 3 resolutions demanding a ceasefire** after the October 7 attacks by Hamas. This indicates a shift in the US stance.

Importance of Ceasefire

- **Humanitarian Crisis**: Rafah is facing a potential ground offensive by Israel. This is opposed by the US. Rafah is already sheltering over a million refugees from other parts of Gaza. Without ceasefire, the situation could worsen for the Palestinians, who are at **risk of famine**.

- **High Civilian Casualties**: The conflict has resulted in **over 30,000 civilian deaths**, **including 13,000 children**. A ceasefire would help prevent **further loss of innocent lives**.
- **Restoring Stability Post-Abraham Accords**: Before the October 7 escalation, Israel was part of the Abraham Accords, aimed at **normalizing relations with several Arab states**. A ceasefire would help **return to the stability** these accords were fostering in the region.

Strain in the Israel-US Relationship

- **Disagreement over Rafah Offensive**: There's a growing disagreement between US President Joe Biden and Israeli Prime Minister Netanyahu, particularly **over Israel's planned ground offensive in Rafah**, which the US opposes.
- **Netanyahu's Strong Rhetoric**: Netanyahu has reacted sharply to the US vote and **scrapped a visit to Washington** for talks, indicating increased tensions.
- **Ignoring US Advice**: Netanyahu is seen as disregarding US concerns and Biden's "red line" against a ground offensive, straining the relationship further.
- **Denial of Two-State Solution**: Netanyahu's denial of even the **principle of a Two-State solution** contrasts sharply with the US position, adding to the strain.

3. Extraction of Resources from International Seas

News: India has applied for rights to explore two vast tracts in the Indian Ocean seabed. The application to explore the Afanasy Nikitin Seamount (AN Seamount) has several advantages for India.

About Afanasy Nikitin Seamount

- It's a major seamount in the **central Indian Ocean Basin**. It is located ~3,000 km away from India's coast.
- It reaches up to ~1,200 meters from the surrounding ocean floor, which is at the depth of 4,800 meters.
- It is rich in deposits of **cobalt**, **nickel**, **manganese** and **copper**.

About the Laws Related to Extraction

- For extraction in the **international seabed**, countries must first apply for an exploration licence to the **International Seabed Authority** (ISA). These rights to extraction are applied to areas that are part of the **open ocean**.
- Open ocean means ocean (including air, surface and seabed) where **no country can claim sovereignty**.
- **~60% of the world's seas are open ocean** and believed to be rich in a variety of minerals. However, the costs and challenges of **extraction are prohibitively high**.
- At present, **no country has commercially extracted resources from open oceans**.
- Countries have **exclusive rights up to 200 nautical miles**, and its underlying sea-bed from their borders.
- The **Commission on the Limits of the Continental Shelf** is a UNCLOS-linked body. It decides on the limits of a country's continental shelf.

About Internal Seabed Authority

- The ISA is an **autonomous international organization**.
- It is headquartered in **Kingston**, **Jamaica**.

- It was established under the 1982 **United Nations Convention on the Law of the Sea** (UNCLOS) and the **1994 Agreement** relating to the Implementation of Part XI of the UNCLOS.
- All States Parties to UNCLOS are members of ISA. As of May 2023, ISA had 169 Members, including 168 Member States and the European Union.
- It has the mandate to ensure the **effective protection of the marine environment** from harmful effects that may arise from **deep-seabed-related activities**.
- ISA is the organization through which States Parties to UNCLOS organize and control all mineral-resources-related activities in the open oceans for the benefit of humankind as a whole.

4. Havana Syndrome

News: Russia has dismissed a joint media investigation that had linked Russian military intelligence unit to the 'Havana Syndrome' experienced by the US diplomats across the world.

About Havana Syndrome

- It is a term used to describe a **set of mental health symptoms** reportedly experienced by the **US intelligence and embassy personnel** in different nations.
- In 2016, American diplomats and personnel stationed in Havana reported feeling unwell after **encountering peculiar sounds** and **experiencing unusual physical sensations.**
- These symptoms, including **nausea**, **intense headaches**, **fatigue**, **dizziness**, **sleep disturbances**, and **hearing impairment**, have since been labelled as 'Havana Syndrome'.
- Havana is the capital of Cuba.

WHAT IS HAVANA SYNDROME?

No definitive cause has been found, but scientific studies have noted many of the acute symptoms are consistent with exposure to directed radio frequency energy

Acute symptoms (often ocurring suddeny) **may include:**
- Pain in one or both ears
- Tinnitus, hearing loss
- Intense pressure or vibration inside the head
- Difficulty with memory or concentration
- Nausea
- Visual disturbances
- Unsteady gait, loss of balance, vertigo/dizziness

Chronic symptoms (can last weeks, months or longer) **may include:**
- Headace
- Insomnia
- Depression
- Impaired balance
- Impaired concentration, memory loss

Source: National Academy of Sciences

Causes of Havana Syndrome

- Initial speculation leaned towards a **sonic attack by Cuban intelligence**, but later the National Academy of Sciences suggested that **pulsed microwaves** could be responsible for these symptoms.
- Microwaves, a type of electromagnetic radiation with frequencies between **300 megahertz** (MHz) and **300 gigahertz** (GHz), might have **affected victims' nervous systems**.
- There are suspicions of **high-powered microwaves** being delivered via a 'microwave weapon'.
- Microwave weapons are a form of **direct energy weapons**. They employ beams of **high-frequency electro-magnetic radiation** to **heat the water in a person's skin**, causing pain and discomfort.
- In India, the first case was reported in 2021 when a US intelligence officer travelling to New Delhi with the CIA director reported its symptoms.

5. Defence Attaché

News: India has started to post military and defence attachés to several new countries. This is being done to expand strategic ties with key regions across the globe.

About Defence Attachés

- A Defence Attaché is a **member of the armed forces** who serves in an embassy as a **representative of country's defence establishment abroad**.
- A Defence Attaché (DA) can **represent all branches of the military**, but in bigger countries, they may represent an **individual service branch**, such as an Air Force or Naval Attaché.
- Their duties include:
  o Protect, develop, and promote the **defence interests of their country** in the nation they are assigned.
  o They may be **deployed to work on specific issues**, like migration.
  o They may serve as **part of a military mission** with organisations such as NATO, the EU, or the UN.
- They usually operate as the head of the mission or a military adviser.
- The **Vienna Convention on Diplomatic Relations** (1961), gives immunity to individuals based on their position in a diplomatic mission. **Article 7** of the convention defines the legal status of the **Defense Attaché**.

About the Vienna Convention on Diplomatic Relations (1961)

- Its objective is to ensure that diplomats can conduct their duties without threat of influence by the host Government.
- Its provisions include:
  o It outlines the **rules of diplomatic relations** to facilitate friendly relations between States and to enable States to develop economic, cultural and scientific relations.
  o It provides the **legal basis for diplomatic immunity**.

6. India's Rapidly Rising Defence Exports

News: India's defence exports have hit a record high in FY2023-24.

About India's Defence Exports

- Defence exports have hit a record high of INR 21,083 crore (~US$ 2.63 Billion) in FY 2023-24. This marked a 32.5% increase from the previous fiscal year's exports worth INR 15,920 crore.
- **Contribution of Defence PSUs**: **~60% of defence exports** come from the **private sector**, while **Defence Public Sector Undertakings** (DPSUs) contribute **~40%**.
- **Rise Since 2014-15**: Between 2004-05 to 2013-14, India's total defense exports amounted to INR 4,312 crore. However, this figure surged to **INR 88,319 crore between 2014-15 to 2023-24**, marking a remarkable **21-times increase** (~2000% increase).
- India is projected to reach an annual defense production of INR 3 trillion (INR 3 lakh crore) by 2028-29, with exports of military hardware potentially hitting INR 50,000 crore. *(Refer EPIC December 2022 (click) for India's Defence Manufacturing Sector)*.

7. Combined Maritime Forces (CMF)

News: INS Talwar of the Indian Navy seized 940 kg of drugs in the Arabian Sea as part of an operation led by Combined Maritime Forces.

About the Combined Maritime Forces (CMF)

- It is a **multinational maritime partnership** that upholds the **Rules-Based International Order** (RBIO) by **countering illicit non-state actors on the high seas**.
- It covers ~3.2 million square miles of international waters, in some of the world's most crucial shipping lanes.
- It is **co-located** with the **US Naval Central Command** and **US Navy 5th Fleet at Naval Support Activity Bahrain**.
- CMF aims to **promote security**, **stability**, and **prosperity** across its vast **maritime domain**.

- CMF has 42 member and partner nations including:
  - Australia, Belgium, Brazil, Canada, Denmark, France, Germany, India, Italy, Japan, Republic of Korea, the Netherlands, New Zealand, Norway, Portugal, Qatar, Saudi Arabia, Seychelles, Singapore, Spain, UAE, United Kingdom, and the United States among others.
  - Djibouti, Oman and Sri Lanka are Partner nations.
- **Participation is voluntary** with no compulsory duties imposed on any member nation. **Countries are not obligated by any political or military commitments**.
- It is comprised of **5 task forces:** Maritime Security Operations outside the Arabian Gulf, Counter-Piracy, Maritime Security Operations inside the Arabian Gulf, Red Sea Maritime Security, Maritime Security Training.
- It has multiple focus areas like **Counter-Narcotics**, **Counter-Smuggling**, **Piracy Suppression**, **Regional Cooperation** and **Environmental and Humanitarian Response**.

Science and Technology

1. God Particle: Higgs Boson

News: Nobel Prize-winner Physicist Peter Higgs, known for proposing the Higgs Boson or the God Particle, has passed away at the age of 94 years.

About the Higgs Boson
- The Higgs boson is the fundamental **force-carrying particle of the Higgs field**, which is responsible for **providing mass to the fundamental particles**.
- Peter Higgs had proposed the existence of the Boson in 1964. However, the particle was discovered 48 years later in July 2012, by researchers at the **Large Hadron Collider** (LHC).
- LHC is the **most powerful particle accelerator** in the world which is located at the European particle physics laboratory **CERN**, Switzerland.
- The LHC confirmed the existence of the **Higgs field** and the mechanism that gives rise to mass, and thus **completed the Standard Model of Particle Physics**.
- The Higgs Boson is one of the **17 fundamental particles in the Standard Model**. This is the best theory about the behaviours of the universe's most basic building blocks. *(Refer EPIC May 2022 (click) for Standard Model of Physics and EPIC June 2023 (click) for Decay of Higgs Boson Particles).*

Features of Higgs Boson
- It has a mass of **125 billion electron volts** (eV), making it **130 times more massive than a proton**.
- It is a **chargeless particle with zero spin** (a quantum mechanical equivalent to angular momentum).
- It is the **only elementary particle with no spin**.

About Bosons
- A Boson is a '**force carrier**' particle that comes into play **when particles interact with each other**. A boson is exchanged during this interaction e.g., when two electrons interact, they exchange a **photon**, the force-carrying particle of electromagnetic fields.

2. Negative Leap Second

News: A recent study has found that the Earth's changing rotation, influenced by factors such as climate change and geological shifts, may result in clocks skipping a second. It can potentially lead to the need for a "negative leap second" around 2029.

About Leap Second

- It is a one-second adjustment used to address the **gradual slowdown of Earth's rotation**, caused by the continuous melting and refreezing of ice caps.
- It was introduced by the **International Earth Rotation and Reference Systems Service** in 1972.
- The Leap Second is **periodically added to Coordinated Universal Time** (UTC) to keep clocks world-wide **synchronized with atomic time** and to **compensate for the gradually slowing down of the Earth's rotation**.
- So far, 27 positive leap seconds have been added.

Source: Time and Date. The graph shows the difference between actual time of rotation of earth and 86,400 seconds (in milliseconds, 10^{-3} s). A value > 0 means, Earth takes more than 86,400 s to complete one rotation i.e., rotation is slowing down. The trend on extreme right end shows deviation is falling and earth's rotation is speeding up.
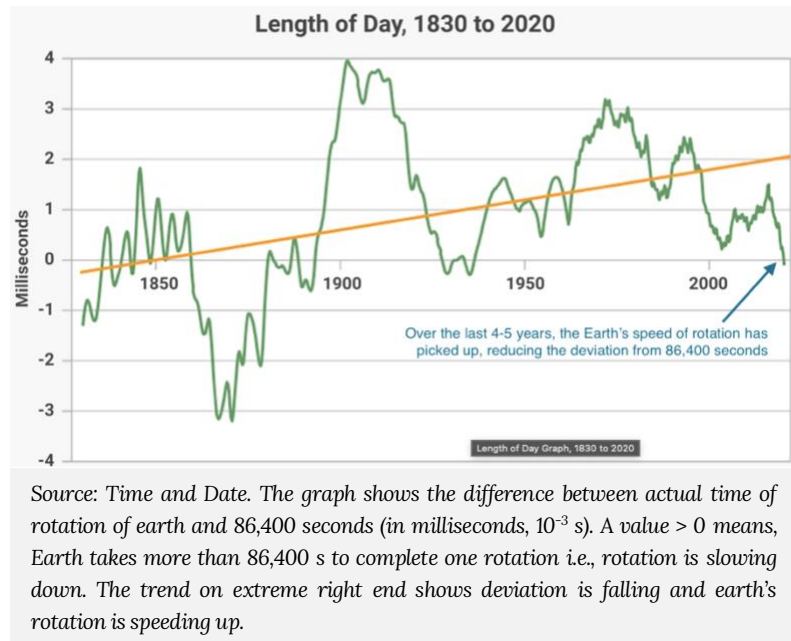
- **Reason for Addition**: Earth's rotation on its axis is not consistent; it can **speed up or slow down** due to factors like the moon's gravitational pull, which leads to ocean tides.
- A leap second is typically added **either on June 30 or December 31**.

About Negative Leap Second

- It is a second that is **removed from clocks to maintain synchronization with the Earth's rotation**.
- So far, **no negative leap second has been needed** because the Earth's rotation has generally been slightly slower over the past few decades.
- In recent times, the **Earth has been spinning faster than usual**. Hence the timekeepers thought about using negative leap seconds for the first time.

3. Coordinated Lunar Time

News: The US Government has asked NASA to develop a time system for the Moon to ensure that the international groups and private companies working on the moon, can synchronize their activities.

About Coordinated Lunar Time

- It will provide a **time-keeping benchmark** for **lunar spacecraft and satellites** that require **extreme precision** for their missions.
- It will also **synchronize the communication** between satellites, astronauts, bases and the Earth.
- A unified time standard would **ensure coordinated operations**, reliability of transactions and managing the logistics of lunar commerce.

Standard Time Measurement on Earth

- The world's clocks and time zones follow **Coordinated Universal Time** (UTC), which is a globally accepted standard for time. UTC is established by the **International Bureau of Weights and Measures** in Paris, France.
- The time is tracked by a **weighted average of more than 400 atomic clocks** placed all over the world.
- Atomic clocks measure time in terms of the **Resonant Frequencies**. Resonant frequency is the **natural frequency of an object** where it tends to **vibrate at a higher amplitude of atoms** such as Cesium-133.

- In atomic time, a second is defined as the period in which a **Cesium atom vibrates 9,192,631,770 times**. As the vibration rates at which atoms absorb energy are highly stable and ultra-accurate, atomic clocks make for an excellent device for gauging the passage of time.

Need for Coordinated Lunar Time

- UTC cannot be used to determine time on the Moon. Since there is less gravity on the Moon, **time ticks slightly faster as compared to time on the Earth**. An Earth-based clock will appear to lose on average 58.7 microseconds per Earth day with additional periodic variations.
- Even a small difference in time can have a critical impact on the functioning and operations of spacecraft and satellites like data transfers, communication, and navigation.
- With the rise in number of moon missions in future, it will be difficult to synchronize their mission operations standard with each other, and it may lead to collisions.

4. Pushpak Reusable Landing Vehicle (RLV)

News: ISRO has successfully tested the Pushpak Reusable Landing Vehicle (RLV) LEX 02. This is the 2nd test after RLV LEX-01 and showcased the autonomous landing capability of the RLV.

About Reusable Landing Vehicle (RLV) LEX-02

- The RLV LEX-02 has been conceptualized as a space plane with a **low lift-to-drag ratio**, requiring an approach at high glide angles that necessitates **landing at high velocities** of **350 km/h**.
- This design allows it to **transport payloads to low Earth orbits** and **return to Earth for future use**.
- RLV LEX-02 uses various indigenous systems, including localized navigation based on pseudo-lite technology, along with instrumentation and sensor systems developed by ISRO. *(Refer EPIC April 2023 (click) for Reusable Launch Vehicle (RLV)).*

Unique Features of the LEX-02 Experiment

- **Challenging Autonomous Landing**: The LEX-02 mission showcased the autonomous landing ability of the RLV under challenging conditions after being released from a Chinook helicopter at an altitude of 4.5 km.
- **Automatic Control Adjustments**: It approached the runway autonomously, making adjustments as needed, and landed precisely using its **brake parachute**, **landing gear brakes**, and **nose wheel steering system**.
- **RLV-LEX-01 System Reuse**: All flight systems from RLV LEX-01 were reused in this mission after receiving necessary certifications.
- The mission was carried out by **Vikram Sarabhai Space Centre** (VSSC), **Liquid Propulsion System Centre** (LPSC), and **ISRO Inertial Systems Unit** (IISU).

5. Artificial Intelligence and Issue of Copyright

News: New York Times (NYT) has filed a lawsuit against OpenAI and Microsoft for copyright infringement. NYT claims that OpenAI/Microsoft have used its copyrighted content for training their AI models.

About NYT's Arguments

- **Claims of Content Usage**: The NYT claims OpenAI and Microsoft **used its content without permission**, like articles and opinion pieces, to train their AI models.

- **AI Generating Similar Outputs**: They argue this AI can generate outputs very similar to NYT's style, sometimes using verbatim text.
- **Competition and Financial Impact**: The lawsuit suggests this **AI capability competes directly with the NYT**, potentially **taking away readers and revenue**. The newspaper mentions financial losses but hasn't specified an amount.
- **Targeted and Extensive Use of NYT Content**: The NYT emphasizes that their content was specifically targeted and extensively used in AI training.
- **Argument Against Fair Use**: The NYT contests the idea that this usage constitutes fair use, arguing that it's not transformative and directly competes with their original works.

About OpenAI/Microsoft's Arguments

- **OpenAI's Hacking Claims**: OpenAI states that "the Times paid someone to hack OpenAI's products" to generate specific results for their complaint.
- **Allegation of Manipulating AI Results**: OpenAI asserts that it took the NYT "tens of thousands of attempts" and exploiting a bug through "deceptive prompts" to elicit verbatim passages of NYT articles.
- **Technological Innovation and Consumer Choice**: Microsoft emphasizes the importance of supporting technological advancements and consumer choice, suggesting that restricting AI development could hinder progress in these areas.

The result of this lawsuit could set a precedent for **how AI technology uses copyrighted material**. Collaborative approaches, like those between Axel Springer and OpenAI, might offer a model for **balancing innovation with copyright protection**.

6. Shallowfakes

News: The social media has been flooded with misinformation amidst the ongoing General Elections. Most of the misinformation has been spread through Shallowfakes.

About Shallowfakes

- Shallow fakes, similar to deepfakes, involves **altering people's images**, **videos**, and **voice clips** for **malicious purposes**.
- Shallowfakes are called so because they involve **lower-quality image and video editing** compared to the **sophisticated techniques used in Deepfakes**.
- Uses of shallowfakes are also limited like to fabricate **false proof of identity or address**, such as photo ID documents like passports and driver's licenses, or to produce **counterfeit supporting evidence** for claims or transactions, such as contracts, agreements, invoices, etc.
- They are also exploited to **spread false political narratives** and **defaming opponents**.
- Due to their simpler creation process, many **experts consider shallowfakes as greater potential threats than deepfakes**.

Differences between Deepfakes and Shallowfakes

- **Technology**: Deepfakes use **advanced AI and machine learning algorithms**, while **shallowfakes are less advanced**, involving basic editing techniques like cropping, splicing, or adjusting video speed.
  o Shallowfakes can be **created with common editing software** and may not require AI or machine learning.
- **Accessibility**: It is easier for regular people to make shallowfakes and hence **shallowfakes are more common** compared to deepfakes.

- **Detection**: Generally, deepfakes are **difficult to detect** with the naked eye and **may require specialized software or expertise**. Shallowfakes are usually easier to spot than deepfakes because they **can show visual mistakes or differences**.

7. World Cybercrime Index

News: A team of international researchers has complied the World Cybercrime Index.

About World Cybercrime Index

- It identifies **key global cybercrime hot-spots** by ranking the most significant sources of cybercrime at a national level.
- It has been developed by the **University of Oxford** and **University of New South Wales, Canberra**.
- The index is based on data collected from a survey of 92 top global experts in cyber-crime, specializing in intelligence and cyber-crime investigations.
- It ranks ~100 countries **identifying key hot-spots according to various categories of cyber-crime**.
- The 5 major categories of cybercrime assessed by the study were technical products/services, attacks and extortion, data/identity theft, scams, cashing out/money laundering.

CYBERCRIME INDEX
Ranking countries by cybercrime threat level

Ranking	Country	WCI score	Ranking	Country	WCI score
1	Russia	58.39	11	Iran	4.78
2	Ukraine	36.44	12	Belarus	3.87
3	China	27.86	13	Ghana	3.58
4	United States	25.01	14	South Africa	2.58
5	Nigeria	21.28	15	Moldova	2.57
6	Romania	14.83	16	Israel	2.51
7	North Korea	10.61	17	Poland	2.22
8	United Kingdom	9.01	18	Germany	2.17
9	Brazil	8.93	19	Netherlands	1.92
10	India	6.13	20	Latvia	1.68

Key Findings of the World Cybercrime Index

- **Russia tops the list** with the highest cybercriminal threat, followed by Ukraine, China, the USA, Nigeria, and Romania.
- **India has been ranked 10th in cybercrime**, mostly due to frauds related to financial payments.
- The study indicated that **certain types of cybercrime were linked to specific countries** e.g., the **US was predominantly connected with data and identity theft crimes**, while crimes involving **technical products or services** were frequently traced to **China**.
  - Russian and Ukrainian cyber-criminals are technically most advanced.
- The **global economic impact of cybercrime** is projected to significantly increase over the next 4 years, escalating from **US$ 9.22 trillion in 2024** to **US$ 13.82 trillion by 2028**.

8. Unstructured Supplementary Service Data (USSD)

News: The Department of Telecom (DoT) has directed telecom operators to deactivate USSD-based call forwarding and transition to alternative methods. The DoT said that the USSD-based call forwarding, is being misused for inappropriate activities.

About the Unstructured Supplementary Service Data (USSD)

- It is a **communications protocol** utilized in **Global System for Mobile Communications** (GSM) networks for **sending short text messages**. USSD is similar to Short Message Service (SMS).
- It usually begins with either an asterisk (*) or hash symbol (#) and ends with a hash symbol (#).
- These messages consist of digits for **commands or data**, often separated by additional asterisks.

- USSD messages can contain up to 182 alphanumeric characters.
- In contrast to SMS messages, USSD establishes a **real-time connection throughout a session**, enabling a **two-way exchange of data sequences**. The real-time connection makes it **faster than SMS-based services**.
- Its applications include:
  o **Wireless Application Protocol** (WAP) browsing, mobile money services, prepaid call-back service, menu-based information services, and location-based content services.
  o It is used to show balance deductions on mobile phones, with a notification appearing on the screen after a call or outgoing SMS.
  o It is also employed for **checking IMEI numbers** of mobile devices.

9. Punnett Square

News: Punnett Squares are used to predict genetic combinations of offspring from two individuals.

About Punnett Square
- Punnett Square originates from the British geneticist Reginald Punnett who devised the approach in 1905.
- Biologists use this diagram to figure out the **chance of an offspring having a specific genotype**.

Working of Punnett Square
- The potential genetic traits of one parent listed on one side, and the traits of the other parent listed on the other side.
- Each square is filled by combining the traits from each parent. Each square represents a **potential combination of traits** that their **offspring might inherit**.
- It provides a straightforward method for visualizing the **likelihood of various traits appearing in the off-spring**.
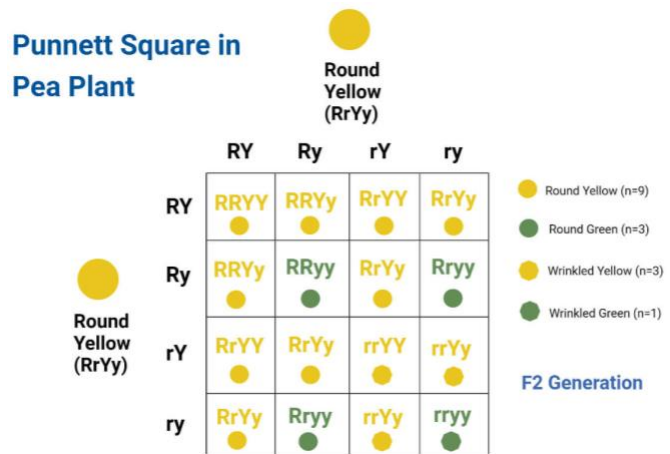
Applications
- It helps to **understand inheritance patterns**, such as the study of **dominant and recessive genes**.
- This valuable tool aids in forecasting the potential variations and probabilities **arising from crossbreeding**.

10. NexCAR19: Gene Therapy for Cancer

News: The President of India has launched India's first indigenous anti-cancer CAR-T Cell Therapy, NexCAR19.

About NexCAR19
- It is India's first **indigenously-developed CAR-T cell therapy**.
- It has been developed by IIT Bombay, Tata Memorial Centre and ImmunoACT, a start-up conceived at IIT Bombay.
- It has been designed to target cancer cells carrying the **CD19 protein**.
- The treatment can be used by people with **B-cell lymphomas** who didn't respond to standard treatments like chemotherapy, leading to relapse or recurrence of the cancer.

- The NexCAR19 Therapy treatment process involves following steps:
  - **Patient donates blood at a transfusion centre**. The blood is analysed in the lab, where the **T-cells are genetically modified**.
  - In a week to 10 days, these cells return to the clinic for patient reinfusion.
  - Recovery typically occurs within two weeks after one cycle of the treatment.
- In a study conducted, ~70% of patients responded to the treatment, with variations between leukaemia and lymphoma cases. ~50% of these responsive patients achieved a complete response.
- With NexCAR19, **India has become one of the first developing countries to have its indigenous CAR-T and Gene Therapy platform**. *(Refer EPIC February 2023 (click) for CAR T-Cell Therapy)*.

TREATMENT FOR SPECIFIC B-CELL CANCERS

NexCAR19 is a prescription drug for B-cell lymphomas, lymphoblastic leukaemias when other treatments have been unsuccessful

PATIENT'S WHITE blood cells are extracted by a machine through a process called leukapheresis and genetically modified, equipping them with the tools to identify and destroy the cancer cells.

NEXCAR19 IS manufactured to an optimal dose for the patient, and typically administered as a single intravenous infusion. Prior to this, the patient is put through chemotherapy to prime the body for the therapy.

HOW NEXCAR19 WORKS

T-cells are naturally made by the body as an advanced defence against viruses and cancer cells. As T-cells mature, they develop specific connectors (receptors) to target key signals on cancer cells.

Scientists have identified certain proteins that are abnormally expressed on the surfaces of specific types of cancer cells. Specially designed receptors can find and bind to these cells.

However, cancers can limit the inbuilt extent and efficiency with which T-cells are able to seek and fight them. This results in an increase in cancer burden.

A safe shell of a virus is used to genetically engineer T-cells so they express Chimeric Antigen Receptors — connectors that target a protein called CD19 on B-cell cancer.

11. Glycemic Index (GI)

News: A study has found that consuming low Glycemic Index diets might prevent the development of type-2 diabetes.

About Glycemic index (GI) and Glycemic load (GL)

- The **Glycemic Index (GI)** ranks foods containing carbohydrates according to **their effect on blood glucose levels** after eating.
- **High GI** foods are digested and **absorbed quickly** by the body, leading to a **rapid spike in blood sugar level**. High GI foods include sugary foods and beverages, white bread, potatoes, and white rice.
- **Low and Medium GI foods** are **digested more slowly**, causing a more gradual increase in blood sugar levels. Low GI foods include fruits and vegetables, pulses, and whole grains like porridge oats.
- Low GI foods are beneficial for individuals with **Type-2 diabetes** as consuming low GI foods aids in **managing blood glucose levels**.
- The **Glycemic Load (GL)** evaluates the quality and quantity of carbohydrates in a particular food item and the amount of carbohydrate consumed in one serving.

Low GI foods
- Fruits ■ Grains ■ Lentils
- Non-starchy vegetables
- Legumes ■ Dairy products
- Brown rice

High GI foods
- Sugar ■ Sweetened drinks
- White polished rice
- Potatoes ■ White bread

Findings of the Study

- People with the **highest Glycemic Load** (GL) **intake faced greater diabetes risks** than those with the lowest.
- The **link between GI and diabetes risk was notably stronger** in individuals with higher **Body Mass Indexes** (BMIs). BMI helps determine whether a person is **underweight** (BMI < 18.5), **normal** (18.5-25), **overweight** (25-20) or **obese** (BMI > 30). BMI is calculated as BMI = (Weight, kg)/(Height, m)^2.

12. H5N1 Avian Influenza (Bird Flu)

News: Periodic outbreaks of H5N1 Avian flu pose a grave healthcare threat.

About H5N1 Avian Influenza

- Bird flu, also known as avian flu, refers to an **infectious viral illness** that mainly **infects and spreads among poultry and some wild birds**.
- The virus was **first reported in geese** in China in 1996. Since then, outbreaks have been reported periodically across the world. India reported the presence of the virus in Nandurbar, Maharashtra, in 2006.
- The exact factors behind the large outbreaks of the bird flu are still largely unknown. Some scientists, however, suggest that one reason could be **climate change**.
- The **new version of H5N1 first emerged in Europe in 2020** and then rapidly spread to other parts of Europe, Africa, and Asia. The currently circulating type of H5N1 is one such **highly pathogenic** flu virus.
  - By late 2021, it had spread to North America and in the fall of 2022, it appeared in South America. In February 2024, the virus found its way to **mainland Antarctica**.
- Along with affecting farm birds, the virus has also **significantly harmed wild birds**, particularly those species that are already facing the threat of extinction.
- The **spread of the virus among mammals**, including foxes, pumas, skunks, and both black and brown bears in North America and farmed minks in Europe, **raises concerns due to the potential for increased virulence** and **cross-species transmission** in overcrowded conditions.
- The **marine mammals** such as sea lions and dolphins' seals, elephant seals have also been killed due to virus.
- **Human-bird flu infections are rare**. It typically occurs in **individuals exposed to large numbers of infected birds** at poultry farms, indicating a higher risk with increased viral exposure.
- There are several H5N1 vaccines for several of the avian H5N1 varieties, but the **continual mutation of H5N1 renders them of limited use** to date.

Environment

1. Rising Temperature of Ocean Waters

News: The average ocean water temperature has risen steadily, and it can have a severe harmful impact on marine ecosystem and biodiversity.
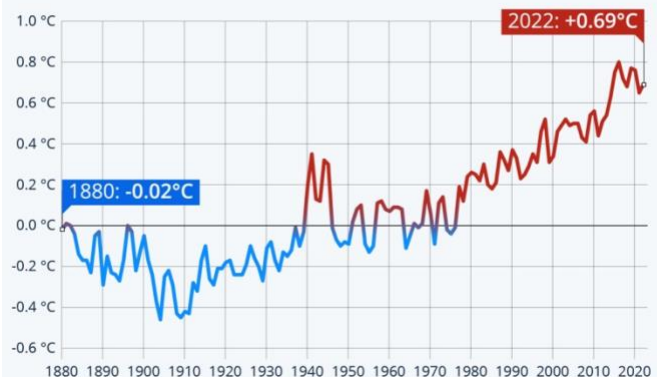
About the Rising Ocean Water Temperatures

- In February 2024, the global sea surface temperature was 21.06°C, the highest since 1979.
- It has surpassed the previous record of 20.98°C set in August 2023. Since March 2023, temperatures have been exceptionally high.

Factors Contributing to the Rise of Ocean Temperatures

- **Human Activities**: Since the 19th century, burning fossil fuels has released large amounts of greenhouse gases, significantly contributing to global warming.
  - **~90% of the extra heat** trapped by green-house gases is **absorbed by the oceans**, steadily increasing their temperatures.

The Oceans Are Getting Warmer
Annual divergence of global ocean surface temperature from 20th century average

2022: +0.69°C
1880: -0.02°C

Source: Statista. The ocean waters average temperature has shown a consistent rising trend since 1970s.

- **El Niño**: It causes abnormal warming of waters in the equatorial Pacific Ocean, and contributes to both ocean and global temperature rises.
- **Reduced Sahara Dust**: Less dust blowing off the Sahara Desert means **less shading over the Atlantic**, leading to **increased absorption of sunlight** and **higher ocean temperatures**.

Concerns Related to the Rise of Ocean Temperature

- **Impact on Marine Ecosystems**: Warmer oceans lead to **increased stratification**, **disrupting the mixing of water layers**. This affects marine life, especially the population of **phytoplankton**, crucial for marine food webs.
- **Coral Bleaching**: The frequency of coral bleaching has doubled between 1982 and 2016, which harms coral reproduction and increases vulnerability to diseases.
- **Changes in Marine Behaviour**: Warming oceans **alter the migration patterns** of aquatic animals.
- **Intensification of Storms**: Warmer oceans contribute to **more frequent and severe storms**. They increase evaporation rates and heat transfer, leading to **stronger winds**, **heavier rainfall**, and **more flooding** on lands.

Way forward

- To mitigate the impacts of rising sea surface temperatures, urgent action to **reduce greenhouse gas emissions** is vital. The **oceans have absorbed 90% of excess heat**, exacerbating the damage to the marine ecosystem and intensifying storms. **Reducing emissions can slow these trends**.

2. Green Credit Programme

News: The Union Government has tweaked the norms related to the Green Credit Programme emphasizing that primacy must be accorded to restoring ecosystems over planting of trees.

About the Green Credit Programme (GCP)

- It was initiated by the Prime Minister of India during the **COP 28**, which took place in 2023 in Dubai, UAE.
- It is a part of the Government of India's **Lifestyle for Environment (LiFE) Movement**.
- It is an **innovative market-based mechanism** designed to **incentivize voluntary environmental actions** across diverse sectors, by various stakeholders like individuals, communities and private sector industries.
- The **Indian Council of Forestry Research and Education** (ICFRE) will serves as the GCP Administrator and will be **responsible for the implementation of the programme**, and its management, monitoring, and operation.
- The GCP focuses on two key activities: **Water conservation** and **Afforestation**.
- The **Green Credit Registry and Trading Platform** would facilitate the registration and thereafter, the **buying and selling of Green Credits**.
- The **carbon markets** are more **focused at industry and corporations**. The GCP can benefit individuals and communities as well. (*Refer EPIC August 2022 (click) for Amendments to Energy Conservation Act and Carbon Markets*).

Trading green

The programme will cover 8 types of activities, including tree plantation, water management and sustainable agriculture

- Applicant shall register activity via web site
- Activity will then be verified by a designated agency
- Based on its report, administrator shall grant credit certificate

About Compensatory Afforestation

- Compensatory afforestation requires any **industry or institution** that has been **authorized to clear forest land for non-forestry uses** to:

o Allocate an equivalent area of non-forest land to forest authorities.
o **Fund the reforestation** of this newly provided land.

- The land should ideally be **located as close as possible to the original deforested area**.
- If suitable non-forest land is not available nearby, the entity must then **provide twice the area in 'degraded' forest land**. It is a land recognized as forest but characterized by **very low tree density** for afforestation purposes.
- These entities are obligated to **compensate for the ecological value lost due to the land diversion**, a cost referred to as the '**net present value**' of the forest ecosystem.

3. Science Based Targets Initiative (SBTi)

News: The decision by the Science Based Targets Initiative (SBTi) to allow carbon offsetting for Scope 3 emissions has sparked controversy and scepticism.

About the Science Based Targets Initiative (SBTi)

- It is a global initiative that aims to encourage and support companies to **set science-based targets to reduce greenhouse gas emissions** and **limit global warming to well below 2°C** above pre-industrial levels.
- It was established in 2015.
- Its partner organizations include United Nations Global Compact, World Resources Institute (WRI), and the World Wide Fund for Nature (WWF) among others.
- It establishes and encourages **practices in emissions reduction** and **net-zero goals** consistent with climatological research. It also creates frameworks, resources, and guidelines to assist companies and financial institutions in **establishing targets based on rigorous scientific evidence**.
- SBTi oversees the **SBTi Net-Zero Standard** which is the **world's only framework for corporate net-zero target** setting in line with climate science.

About Scope 1, 2 and 3 Emissions

- These scopes are defined by the **Greenhouse Gas Protocol** to **prevent double counting** and provide a comprehensive view of their greenhouse gas impacts.
- **Scope 1 Emissions**: They cover emissions from sources that an **organisation owns or controls directly** e.g., from burning fuel in fleet of vehicles owned by it.
- **Scope 2 Emissions**: They cover emissions **caused indirectly** and come from the source of the energy or electricity used in business e.g., the emissions caused by generating electricity used in buildings.
- **Scope 3 Emissions**: They include other **indirect emissions not owned or controlled by the organization**. They are not produced by the company and are not the result of activities from assets owned or controlled by them, but **by other stakeholders part of the firm's value chain** e.g., the products provided by suppliers. Scope 3 Emissions include **all sources not falling within the Scope 1 and 2 Emissions**.

4. Natural Gas as Bridge Fuel

News: Natural gas is referred to as a 'Bridge Fuel' that helps in transition away from coal and oil towards renewable energy and electrification.

About Bridge Fuel

- It refers to fuels that **help power society with minimal environmental impact while transitioning to clean, renewable energy sources**.
- The aim of using a bridge fuel is to substitute the **majority of fossil fuel-dependent energy sources** as there is transition towards a cleaner, more renewable energy based-economy devoid of greenhouse gas emissions.

- Most energy and environment experts view **natural gas as a bridge fuel** due to its **lower greenhouse gas emissions**. Natural gas emits 50% less CO_2 than coal, making it a cleaner energy source.
- Other factors for a bridge fuel includes **enhancing national energy independence** and **reducing costs of pollution**.

About Natural Gas

- It is a **non-renewable resource** and is classified as a **fossil fuel**. It comprises a **mixture of gases** abundant in **hydrocarbons**.
- It primarily consists of colourless and odourless **methane** (CH_4), typically ranging from 70% to 90% in composition. It has other gases like **ethane** (C_2H_6) and **propane** (C_3H_8) in smaller proportions.
- It also contains **carbon dioxide** (CO_2), **hydrogen sulphide** (H_2S), and **nitrogen** (N) as **impurities**.

Uses of Natural Gas

- Natural gas undergoes processing to be **converted into cleaner fuel** before consumption. During this process, various by-products such as propane, ethane, butane, carbon dioxide, and nitrogen are extracted, which can be further utilized.
- It is used for **power generation**, **heating** (buildings/offices), **cooking**, **industrial processes**, **transportation** (compressed CNG form) and **production of fertilizers** (ammonia-based).

5. Biomining

News: The Biomining project to clear landfill sites in Delhi is likely to miss the latest deadline of 2024.

About Biomining

- Biomining is the **scientific process of excavation**, **treatment**, **segregation** and **gainful utilisation** of aged municipal solid waste lying in dumpsites typically referred to as **legacy waste**.
- Biomining comprises of 4 steps: **Excavation** of legacy waste, **stabilizing** the waste using **bioremediation**, **segregation** of excavated waste and then **sustainable management** and its **safe disposal**.
- The methods of biomining include **Bioleaching**, **Bio-oxidation**, **Dump Leaching**, and **Agitated Leaching**.
  - **Bioleaching:** This method involves dumping low-grade ore into a heap called a **leach pile** and then soaking it with a **weak sulphuric acid wash**.
    - The acid reacts with the ore's sulphide matrix and encourages the growth of **bacterial strain** which starts to **degrade ore** and releases minerals or metals in fluid form.
  - **Bio-oxidation** method is widely used for the extraction of gold from ores. The ore is exposed to **bacterial oxidation** which degrades the insoluble pyrite and arsenic components.
  - **Dump Leaching** is an industrial process to extract precious metals and copper from ores.
  - **Agitation Leaching method** is chemical process used to extract mineral from soil.

Biomining in Solid Waste Management

- Biomining is used to **clear oil spills** in the sea and pollution from the soil, ground and surface water and air.
- It is used to **degrade environmental contaminants** into **less toxic or non-toxic forms**.
- It can also be used for treatment of **wastewater**, **industrial waste**, **hydrocarbon contamination**, storage tanks and pipes, landfills, pesticides, herbicides, and the **agricultural chemical waste**.

Benefits of Biomining

- Biomining allows to **recycle resources by extracting useful components from the waste** such as metal, as compost in fertilizer, etc.
- It is **eco-friendly** and **environmentally sustainable**.

Disadvantages of Biomining

- Biomining is **restricted only to biodegradable compounds** and is a **time consuming process**.
- There is **risk of leakage** of the acidic, metal-rich solution created by the microbes.

6. New Rules on Bioplastics

News: The Ministry of Environment has introduced new rules to make it harder for makers of disposable plasticware to label such products as 'biodegradable'.

About Biodegradable and Compostable Plastics

- **Biodegradable plastics** can be **decomposed naturally** by the action of living organisms (usually microbes) into water, carbon-dioxide and biomass, over a period of time. However, there are no tests yet to determine **if such plastics degrade completely**.
- Compostable plastics can also be degraded but **require industrial or large municipal waste management facilities** to do so.

Changes in the Rules

According to the new **Plastic Waste Management (Amendment) Rules**, **2024**, biodegradable plastics must be:
- Capable of degradation by biological processes in specific environment such as soil, landfill.
- Should not leave behind any **microplastics**.

Issues with the Amended Rules

- The rules do not specify the **chemical tests** to be used to **establish the absence of microplastics**.
- The rules **do not specify the limit of microplastics** in a sample to consider them 'eliminated'.
- Central Pollution Control Board (CPCB) has refused to provide makers of disposable plasticware with a 'provisional certificate' to **license their products as biodegradable**.

7. Hydrogel

News: Researchers at the Indian Institute of Science (IISc) have developed a sustainable hydrogel specifically designed to remove microplastics in water.

About Hydrogel

- The hydrogel utilizes a complex **interpenetrating polymer network** (IPN) architecture composed of **chitosan**, **polyvinyl alcohol**, **and polyaniline**.
- This structure is infused with **nanoclusters of copper substitute polyoxometalate** (Cu-POM), which **act as catalysts under UV light irradiation to degrade microplastics**.
- The combination of polymers and catalytic nanoclusters **enhances the hydrogel's stability** across various temperatures and also **enables it to adsorb and degrade large quantities of microplastics efficiently**.
- This hydrogel efficiently removes about 95% and 93% of two different types of microplastics in water, highlighting its potential as a significant solution in **water purification technologies**.
- The hydrogel could last for up to **5 cycles of microplastic removal** without significant loss of efficacy.
- This hydrogel can also be **converted into carbon nanomaterials** that are capable of extracting heavy metals (like hexavalent chromium) from contaminated water.

About Microplastics

- Microplastics are small plastic particles in the environment that are generally **smaller than 1 mm to the 1 micrometer range**. Microplastics can be formed by fragmentation of large plastic waste material.

Danger of Microplastics

- Microplastics pass the filtration and treatment processes for wastewater resulting in **significant impacts on wildlife** from marine environment pollution.
- Microplastics **kill biodiversity**. They harm organisms **before they reach the reproductive age**. It can lead to **stunted growth** and **behaviour change** in some organisms.
- Most plastic waste is not recycled and ends up in landfills, **posing a threat to human health**.
- The durable properties of plastics make them persistent and slow to degrade in the environment entering the food chains. It holds the potential for both **bioaccumulation** and **biomagnification**.

8. Supreme Court's Ruling on Environmental Clearances Related to Linear Projects

News: The SC has cancelled a notification from the Ministry of Environment that had exempted the extraction of ordinary earth for linear projects from the requirement of environment clearance.

About the Notifications

- **First Notification**: In 2006, the Ministry of Environment released a notification under the **Environment (Protection) Act 1986** (EPA), specifying **activities necessitating prior Environmental Clearance** (EC).
- **Second Notification**: In 2016, a second notification was issued, **granting exemptions to certain project categories** from this requirement of environmental clearance.
- **Third Notification**: In 2020, a third notification was issued, adding "*Extraction or sourcing or borrowing of ordinary earth for linear projects such as roads, pipelines, etc.*" to the list of **exempted activities**.

Basis of Challenge to the 2020 Notification

- **Violation of Article 14**: The exemption faced a challenge in front of the **National Green Tribunal (NGT)**, arguing that permitting unrestricted earth extraction was arbitrary and **infringed upon Article 14** of the Constitution of India, **as only linear projects were exempted**.
- **Violation of SC Guidelines on Environmental Clearances**: The petitioner contended that the exemption contradicted the necessity for prior environmental clearance outlined by the Supreme Court in the case of *Deepak Kumar versus the State of Haryana (2012)*.
- **Government Response**: The Government delayed action on the NGT order until the appellant approached the Supreme Court.

About Supreme Court Decision

- **Violation of Article 14**: The SC ruled that the **blanket exemption without clear guidance was arbitrary** and **violated Article 14** because the **2020 Notification lacked definitions for 'linear projects'** and specifics on extraction quantity and area.
- **No Extraction Limit**: The notification didn't clarify the responsibilities of the environmental authority or set extraction limits for soil removal.
- **Government's Haste in Issuing of Notification**: The SC questioned the Government's haste in issuing the notification, especially **during a nationwide lockdown** when **construction of linear projects was halted**.

9. Invasive Alien Species

News: Rising population of Chital in Andaman Islands (an alien invasive species) has forced the local administration to seek assistance from Wildlife Institute of India.

About Invasive Alien Species

- Alien species refer to species that has been introduced to areas **outside its natural distribution**.

- Invasive species are alien species which tend to **expand into and modify ecosystems** to which they have been introduced. Invasive species threaten the biological diversity of the ecosystems where they are introduced.
- Invasive species can include animals, plants, fungi, and microorganisms. They can influence all kinds of ecosystems.
- Characteristics of Invasive Alien Species is described as "*arrive, survive and thrive*".
- These species are **introduced either through natural or human intervention**. They survive on native food resources, **reproduce at a fast rate** and **edge out native species** in the competition over resources.

Impacts

- **Flora**: In habitats where there is no competition, invasive species can **dominate the entire ecosystem** e.g., the increased population of chital in the Andamans has **affected the regeneration of native vegetation**, as the deer are known to consume seeds and seedlings.
- **Fauna**: Invasive species act as **disruptors in the food chain** and disturb the balance of the ecosystem e.g., in Keoladeo Park, Bharatpur in Rajasthan, the African catfish has been known to prey on waterfowls and migratory birds as well.
- **Economy**: In September 2023, the IPBES reported that 37,000 alien species have been introduced globally, adding around 200 new species annually and costing over US$ 423 billion each year in economic damages e.g., the **cotton mealybug from North America** has **significantly impacted cotton yields** in India.

10. Framework for Elephant Corridors

News: Environment experts have called for developing a national framework based on recent scientific methods for designing corridors to secure habitat connectivity and conservation of elephants.

Traditional Approach to Elephant Corridors

- In the 1960s, the **Landscape ecology based approach** defined corridor as an **elongated stretch of land joining two reserves**.
- To identify elephant corridor, experts relied on field knowledge and marked a **long and narrow passage** that can be preserved or restored as a corridor.

Significance of the Elephant Corridor

- **Preventing Fragmentation of Population**: Population fragmentation is the **splitting of a large single population into smaller and isolated units**. This **increases the risk of extinction** for endangered species. Elephant corridors allow for smooth group movement of elephants.
- **Preserving Genetic Diversity**: Protecting the habitat and ensuring connectivity of the elephants through corridors helps maintain a **genetically viable population** and **conserve biodiversity**.

Problems with the Approach

- **Inappropriate Design**: The sensory world and physiological requirements of animals are entirely different from humans and animals **decide their movement based on many variables unknown to humans**. Thus, corridor designed by experts may not be suitable for animals.
- **Lack of Comprehensive Views**: Experts do not have a comprehensive view of larger landscapes. They know some parts of landscapes better than others. This may lead to bias. Further, they may also **overlook disruptions**, such as a **noise barrier** that may **deter animals from crossing**.

Experts suggest use of **extensive field data** (animal movement), **GIS and other data** (e.g., from cameras), **resistance and connectivity maps** etc. should be used for better designing the corridors.

History, Art and Culture

1. Kalyani Chalukyas

News: A 900-year-old Kannada inscription from the Kalyana Chalukya dynasty has been found at Gangapuram, a temple town, in Telangana.

About Chalukya Dynasty

- The Chalukya dynasty ruled large parts of Southern and Central India between the 6th and 12th centuries. During this period, they ruled as **3 related yet individual dynasties**.
- **Badami Chalukyas**: They were the earliest Chalukyas, with their capital at **Badami** (Vatapi) in Karnataka. They rose to prominence during the reign of **Pulakeshin II** and began to assert their independence after the decline of the **Kadamba Kingdom of Banavasi**.
- **Eastern Chalukyas**: They emerged in the **eastern Deccan** after the death of Pulakeshin II. Their capital was **Vengi**, and they ruled until about the 11th century.
- **Western Chalukyas**: They were the **descendants of the Badami Chalukyas**. They emerged in the late 10th century and ruled from **Kalyani** (modern-day **Basavakalyan**).
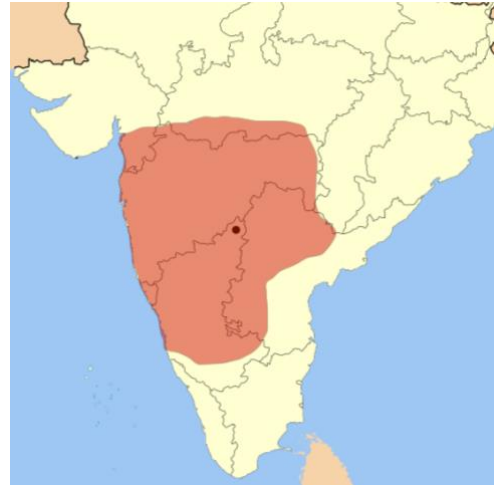
Source: Wikimedia Commons. Extent of Western Chalukya Empire in 1121 AD.

About Kalyani Chalukyas (Western Chalukyas)

Dynasty and Capital

- The Chalukyas of Kalyani belonged primarily to a Kannadiga dynasty. They were known after their capital city, **Kalyani**, which is present in the modern-day Bidar district of Karnataka.

Establishment and Expansion

- The empire was established by **Tailapa II**.
- During their 300-year rule in the western Deccan and southern part of the Indian peninsula, the Chalukyas of Kalyani expanded and reached the zenith of power.
- The most successful period of the later Chalukya rulers in Karnataka's history is often referred to as the '**Chalukya Vikrama era**'.
- **Vikramaditya VI** (1076-1126 CE) played a crucial role during this time. He controlled feudatories in the northern region, including **Kadamba Jayakesi II** of Goa, **Silhara Bhoja**, and the Yadava King.

Decline

- After Vikramaditya VI's death, consistent **confrontations with the Chola dynasty** led to the decline of the Western Chalukya empire.

Art and Architecture

- The Chalukyas contributed significantly to the development of **Kannada and Telugu literature**.
- Their architecture, known as the '**Gadag**' style, bridged the gap between the **Badami Chalukya architecture of the 8th century** and the **Hoysala architecture of the 13th century**.
- The Western Chalukyas minted **punch-marked gold coins** called *pagodas* with Kannada legends.
- Temples built during their rule are abundant in detailed carvings and ornate sculptures, featuring themes like *kirtimukha makaras*, and *mithuna* (erotic) figures.

2. New Sites from Madhya Pradesh in UNESCO Tentative World Heritage Sites List

News: 6 new sites from Madhya Pradesh have been placed in the tentative UNESCO World Heritage Sites list.

About the New Sites in the Tentative WHS List

- The sites included in the new list included **Gwalior Fort**, **Dhamnar Caves, Bhojeshwar Mahadev Temple**, **Rock Art Sites of Chambal Valley**, **Khooni Bhandara** in Burhanpur, and **Gond monuments of Ramnagar**, Mandla.

Key Features of the New Sites

Gwalior Fort

- The fort is known for its formidable walls. The fort's foundation is said to have been laid down by **Suraj Sen** in the 6th century. The fort came under control of several dynasties like Lodhis, Mughals, and then the Marathas. The fort briefly fell to the British during the 2nd Maratha War but was returned to Scindia control in 1805 CE until 1857. British rule lasted until 1886 CE when it was exchanged for Jhansi and returned to the Scindias.
- The fort boasts **several ancient temples**, including the Teli ka Mandir, Chaturbhuj Temple and Sas Bahu Temples.

Dhamnar Caves

- The site comprises **51 rock-cut caves, stupas, chaityas, and dwellings** dating back to the 7th century AD. Among these, the colossal statue of **Gautam Buddha in the nirvana pose** is a significant highlight.

Bhojeshwar Mahadev Temple

- It is dedicated to Lord Shiva and boasts a massive **Linga carved from a single stone**. It was commissioned by **Raja Bhoj in the 11th century,** this temple is revered for its grandeur and unique architecture. The temple's architecture follows the **Bhumija style** characterised by its towering shikhara and ornate carvings and sculptures.
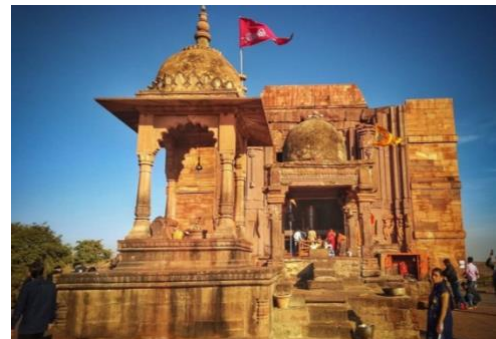
Rock Art Sites of the Chambal Valley

- It hosts the world's **largest concentration of rock art sites**, showcasing scenes from various historical periods and civilizations. These sites spanning across **Madhya Pradesh**, **Rajasthan**, and **Uttar Pradesh**, provide insights into ancient human life and cultural evolution.

Khooni Bhandara, Burhanpur

- It is an **underground water management system** comprising 8 waterworks built by **Abdur Rahim *Khan-i-Khana*** in the historical city of Burhanpur.
- It was built using the **Persian qanat approach** and designed by Persian geologist, **Tabkutul Arz**.
- The hue of red colour in the mineral rich water, gave it the name **khooni (bloody).**

Gond Memorial of Ramnagar, Mandla

- Ramnagar in **Mandla district** used to be the stronghold of the Gond rulers. In 1667, the Gond king, Hriday Shah, built **Moti Mahal** on the bank of river Narmada.
- The cluster of monuments include **Moti Mahal**, Suraj Mandir, Raibhagat ki Kothi, Begum Mahal and Dalbadal Mahal.

3. Contribution of Usha Mehta in Freedom Struggle

News: The film 'Ae Watan Mere Watan' centered on the life of Indian freedom fighter Usha Mehta was released recently.

About Usha Mehta

- Usha Mehta was born in 1920 in Saras, near Surat in Gujarat.
- She was an **ardent follower of Gandhian principles** and was popularly called **Ushaben**.
- She played a vital role in India's freedom struggle.
- In 1928, when she was 8 years old, she joined a protest march against the Simon Commission.
- On August 14, 1942, she and her associates set up the **Secret Congress Radio** during the **Quit India Movement**, which began broadcasting on August 27.
- In 1998, the Government of India honoured her with *Padma Vibhushan*, the 2nd-highest civilian award in the country.

Setting up an Underground Station

- When the World War II began in 1939, the **British suspended all amateur radio licenses across their Empire**. Operators were required to surrender all equipment to the authorities, facing severe punishment if they didn't comply.
- Congress Radio was created during the **Quit India Movement** to spread the message of Independence, making it one of India's earliest radio networks. It was used by Gandhiji to promote Independence.
- Usha Mehta, along with Babubhai Khakar, Vithalbhai Jhaveri, and Chandrakant Jhaveri, played vital roles in organizing Congress Radio.
- To evade detection by the British, they **regularly changed transmission locations**.
- The operation was exposed when Nariman Printer was captured; he revealed the location of Congress Radio in exchange for immunity.

Congress Radio Case

- The trial of the five accused: Usha Mehta, Babubhai Khakar, Vithalbhai Jhaveri, Chandrakant Jhaveri, and Nanik Gianchand Motwane stirred considerable excitement.
- Vithalbhai and Motwane were cleared of charges, while **Usha Mehta**, **Babubhai**, and **Chandrakant received harsh sentences**.
- Usha Mehta was **freed from Pune's Yerawada Jail in March 1946** and is celebrated in the nationalist media as "**Radio-ben**".

4. Vaikom Satyagraha

News: The Vaikom Satyagraha began in 1924 and lasted for over 600 days. It was the first of the many temple entry movements in India.

About Vaikom Satyagraha

- The Vaikom Satyagraha in **Travancore** (now part of Kerala), is recognized as the **first anti-caste movement**.
- The campaign aimed to challenge the caste system by opposing restrictions that barred people from the **depressed classes** and '**untouchables**' from entering the temple.

- The movement began and centered around Vaikom, near the **Mahadev temple in the Kottayam district** of Kerala during 1924-1925.

Background of Vaikom Satyagraha

- During the AICC (All India Congress Committee) meeting in Kakinada in 1923, TK Madhavan, alongside Sardar Panikkar and KP Kesava Menon, presented a petition to the Travancore Legislative Council.
- The petition advocated for **granting the right to temple entry and worship to all members of society**, regardless of caste, creed, or community.
- The movement was launched on March 30, 1924. The prominent satyagrahis included **Kunjappy**, **Venniyll Govinda Panicker**, and **Bahuleyan**.
- The movement got widespread support.
  o 'Periyar' **E.V. Ramasamy** was asked to lead the campaign.
  o **Akalis** from Punjab supported by opening a community kitchen (langar) for the volunteers.
  o **Chattampi Swamikal** and **Sree Narayana Guru** supported the movement.
  o **Mahatma Gandhi** arrived at Vaikom in March 1925 to negotiate a compromise and resolve the issue definitively.

Significance of Vaikom Satyagraha

- The movement set the stage for the **Temple Entry Proclamation** (1936) by the **Maharaja of Travancore**, which **abolished the longstanding prohibition on marginalized castes entering temples** in Travancore.
- The Vaikom Satyagraha was a testing ground for the **Gandhian principles of Satyagraha**. It was tested and proved as the most effective means.
- This movement helped in **establishing equal rights and curbing discrimination** against Scheduled Castes in Indian Society.

5. 60 New GI Tags Awarded

News: Over 60 products from across India have been awarded the Geographical Indication (GI) tag. This marks the first instance of such a large number of products being granted the GI tag at once.

New GI Tags According to the States

State	Product
Assam	• Asharikandi terracotta craft • Pani Meteka craft • Sarthebari metal craft • Jaapi (bamboo headgear) • Mishing handloom products • Bihu dhol • Bodo Dokhona (the traditional attire of Bodo women) • Bodo Eri silk (fabric of peace or ahimsa (non-violence)) • Bodo Sifung (a long flute)
Uttar Pradesh	• Banaras Thandai.
Tripura	• Pachra-Rignai, (a traditional dress worn on special occasions) • Matabari Peda (a sweet)
Meghalaya	• Meghalaya Lyrnai Pottery • Meghalaya Chubitchi

6. ASI Delists 18 Monuments

News: The Archaeological Survey of India (ASI) has decided to declassify 18 monuments from protected status.

About the Centrally Protected Monuments

- The **Ancient Monuments and Archaeological Sites and Remains Act** (AMASR Act), **1958** regulates the preservation of monuments and archaeological sites of **national importance**.
- It protects monuments and sites that are **more than 100 years old**. This includes temples, cemeteries, inscriptions, tombs, forts, palaces, step-wells, rock-cut caves, and even objects like cannons and mile pillars ('*kos minars*') that may be of historical significance.
- India has 3,693 Centrally Protected Monuments or Sites. Uttar Pradesh has the largest number in the country at 743, followed by Tamil Nadu which has 412.

Delisting of Monuments

- It refers to the **removal of certain specific monuments and archaeological sites from the list of protected sites** maintained by the Archaeological Survey of India (ASI).
- Among the monuments delisting are a **mediaeval highway milestone** recorded as *Kos Minar* No. 13 at **Mujessar** village in Haryana, **Barakhamba Cemetery** in Delhi, **Gunner Burkill's tomb in Jhansi district**, and the **Telia Nala Buddhist ruins** in Varanasi.
- When a monument is delisted, it will not fall under the purview of the ASI for conservation, protection, and maintenance. The monument will not receive special attention or protection from the ASI.
- Construction-related activities that were previously restricted around the protected site can be carried out.

Process of Delisting

- **Gazette Notification**: It involves a decision by the Central Government, which issues a gazette notification declaring that the monument has ceased to be of national importance.
- **Public Feedback**: A gazette notification invites public objections or suggestions within 2 months regarding the delisting of these monuments.

Miscellaneous

1. Classification of Tropical Cyclones

News: In a new study, researchers have observed rising intensity of tropical cyclones due to climate change. They have argued for addition of a new category in the system of classification of cyclones.

Need for Addition of New Category

- The tropical cyclones are categorized by the **Saffir–Simpson Hurricane Wind Scale** which is based on the **highest wind speed** averaged over a **1-minute interval 10 m above the surface**.
- The scale classifies tropical cyclones into 5 categories.
- Under category 5, wind speeds exceed 252 km/hr.
- Due to **global warming**, the heat content of the oceans has risen, which has **increased the intensity of tropical cyclones**. To address the limitations of the existing system, scientists

Saffir–Simpson scale, 1-minute maximum sustained winds

Category	m/s	knots	mph	km/h
5	≥ 70	≥ 137	≥ 157	≥ 252
4	58–70	113–136	130–156	209–251
3	50–58	96–112	111–129	178–208
2	43–49	83–95	96–110	154–177
1	33–42	64–82	74–95	119–153
TS	18–32	34–63	39–73	63–118
TD	≤ 17	≤ 33	≤ 38	≤ 62

have called for addition of **category 6 with wind speeds exceeding 309 km/hr**.

Impact of Global Warming on Intensity of Tropical Cyclones

- Increased **greenhouse gas emissions** have caused the Earth to warm by about 1.10°Celsius since pre-industrial times and caused **more intense tropical cyclones in the oceans**.
- For every degree of warming, the **strongest cyclones are getting 12% stronger,** making them 40% more destructive.
- As the oceans warm, **cyclones also strengthen faster** and spend more lifetime over the oceans.
- In 2023, **tropical cyclone Freddy spent 37 days over the oceans,** making it the longest-lived cyclones ever recorded (in the Southern Indian Ocean).

2. Long Period Average (LPA) Rainfall

News: IMD has predicted that India will have an 'Above Normal' monsoon season (2024) with rainfall estimated to be 106% of the Long Period Average.

About the Long Period Average (LPA) Rainfall

- Long Period Average Rainfall refers to the average amount of **rainfall recorded over a specific region during a given interval** which can be a **month or a season**.
- This average is calculated over an extended period, typically spanning **30 years or 50 years**.

Purpose of Calculating Long Period Average Rainfall

- Since annual rainfall can differ significantly across regions, months, and even years within the same region, the Long Period Average (LPA) is calculated to **even out these fluctuations to enable relatively accurate predictions**.
- A 50-year LPA **compensates for major deviations** due to **exceptional years of abnormally high or low rainfall**, such as those caused by El Niño or La Niña events, recurring droughts etc.

IMD Categorization of Monsoon Rainfall

- The IMD classifies rainfall deviations based on the LPA into the following categories:
  o **Normal or Near Normal**: Actual rainfall within 96-104% of LPA.
  o **Below Normal**: Actual rainfall 90-96% of LPA.
  o **Above Normal**: Actual rainfall between 104% and 110% of LPA.
  o **Deficient**: Actual rainfall less than 90% of LPA.
  o **Excess**: Actual rainfall more than 110% of LPA.
- The current **Long Period Average** (LPA) for **all India south-west monsoon rainfall** (June-September), calculated from the **1971-2020** data, is **86.8 cm**.
- Previously, the India Meteorological Department (IMD) set the LPA at **88 cm** based on the **1961-2010 data** and at **89 cm** for the **1951-2000 period**.
- The national annual LPA has decreased from 117 cm to 116 cm.

3. Abnormal Rainfall in the UAE

News: The UAE experienced a record-breaking rainstorm that caused severe flooding and disruptions.

About the Rainstorm in the UAE

- The UAE experienced its **heaviest rainfall on record since 1949**.
- Dubai received over **142 millimeters of rain in just one night**.

o Typically, Dubai sees about **94.7 millimeters of rain in an average year**.
- Al-Ain recorded 254 millimeters, and Fujairah saw 145 millimeters.
- The downpour caused **widespread flooding in homes**, major roads, and shopping centers like Dubai Mall and Mall of the Emirates.
- **Air travel was severely disrupted**, leading to **temporary suspension of flights** and significant delays at Dubai International Airport.
- Schools across the UAE had to be closed. In nearby Oman, the rains resulted in the deaths of 18 people, including school children.

Reasons for Heavy Rains in the UAE
- **Storm System**: A significant storm system moved across the Arabian Peninsula, bringing unusually high rainfall to the region.
- **Cloud Seeding**: The UAE utilized cloud seeding technology, which involves spraying salt mixtures into clouds to induce rain. Meteorologists at the National Center for Meteorology conducted 6-7 cloud-seeding flights before the storm. *(Read More about Cloud Seeding)*.
- **Climate Change**: Global warming may also have contributed, as higher temperatures lead to increased water evaporation, allowing the atmosphere to hold more moisture. The UAE has seen a temperature rise of almost 1.5°Celsius over the last 60 years.
- However, it's challenging to link this specific event directly to climate change due to the influence of natural climate patterns such as El Niño and La Niña, which also affect weather extremes.

4. Afar Triangle in Africa

News: Recent geological discoveries indicate that the Afar Triangle in Africa may become the origin of a new ocean within the next 5 to 10 million years.

About the Afar Triangle
- The Afar Triangle is located in the **Horn of Africa**. It is a geological depression **where 3 tectonic plates**; the Nubian, Somali, and Arabian plates meet.
- In addition to its geological importance, the Afar Triangle has a **rich palaeontological history**, revealing fossils of some of the earliest hominins.
- It is part of the **Great Rift Valley in East Africa**.
  o It spans across Eritrea, Djibouti, and the Afar Region of Ethiopia. It is bordered by the Ethiopian Plateau, the Danakil block, the Somali Plateau, and the Ali-Sabieh block.
- It contains **Lake Assal**, which is **Africa's lowest point**.

Causes of Rift in the Afar Region
- The Afar region has undergone **gradual tectonic shifts** over millions of years. In 2005, a big crack appeared in the Ethiopian desert, showing how **Africa is still splitting apart due to these forces**.
- A significant contributor to the rifting process is thought to be a **massive plume of superheated rocks ascending from the mantle beneath East Africa**.
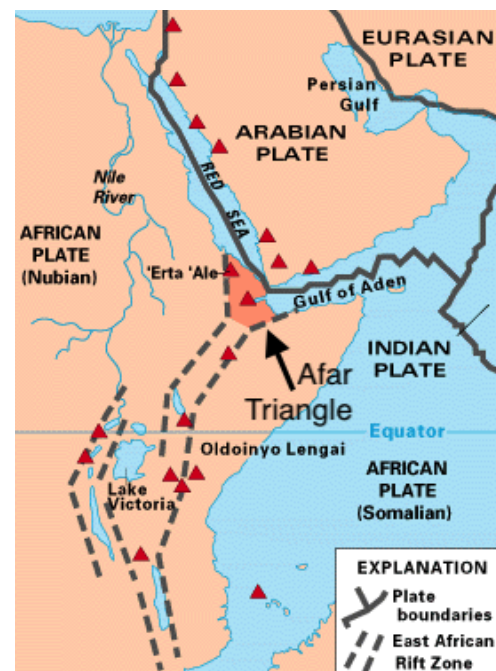
- The presence of magma in the area, especially around the **Erta Ale volcano**, provides insights into the tectonic shift.
- **Rifting is a geological process** when the **Earth's outer layer gets stretched and thinned**, creating **rift valleys or basins**. This happens mostly at **divergent plate boundaries**, where tectonic plates move apart.

5. Magneto-fossils in Bay of Bengal

News: Scientists have found 50,000-year-old magnetic fossils in the Bay of Bengal. It is one of the youngest giant magneto-fossils to be found till now.

About Magneto-fossils

- Magneto-fossils are the **fossilised remains of magnetic particles**. They are created by **magnetotactic bacteria**, also known as **magnetobacteria**.
- Magnetotactic bacteria are mostly **prokaryotic organisms** that arrange themselves along the earth's magnetic field. These unique creatures were first described in 1963.
- These organisms were believed to **follow the magnetic field to reach places that had optimal oxygen concentration**.
  - It was found that the bacteria contained novel structured particles in small sacs that essentially worked as a compass. They are rich in iron.
  - These magnetotactic bacteria create tiny crystals made of the iron-rich minerals **magnetite or greigite**. The crystals help them **navigate the changing oxygen levels** in the water body in which they live.
  - The fossils left behind by the crystal-creating bacteria **help scientists collect information regarding the conditions that prevailed millions of years ago**.
- The study of magneto-fossils found in Bay of Bengal has revealed that at a **depth of ~1,000-1,500 m**, the Bay of Bengal has a **distinctively low oxygen concentration**.
- The rivers **Godavari**, **Mahanadi**, **Ganga-Brahmaputra**, **Cauvery**, and **Penner** played a crucial role in the formation of the magneto-fossils in Bay of Bengal.

6. The Phenomenon of Kallakkadal in Kerala

News: Numerous homes in Kerala's coastal regions have been flooded due to high sea waves (swell waves). The flooding incidents are termed swell surge or Kallakkadal in Malayalam.

About Kallakkadal

- Kallakkadal refers to **coastal flooding** caused by **swell waves** during the **pre-monsoon season** (April-May) and sometimes during post monsoon along the southwest coast of India.
- The term Kallakkadal, coined by local fishermen, combines two Malayalam words: '*Kallan*', meaning **thief**, and '*Kadal*', meaning **sea**. When spoken, these words were combined as 'Kallakkadal', signifying the **sea arriving like a thief**. The term was approved by UNESCO in 2012.

Causes of Kallakkadal

- It is caused by waves formed by **ocean swells**, which originate from **distant storms** such as hurricanes or prolonged periods of intense gale winds.
- These storms **transfer significant energy from the air into the water**, resulting in the formation of extremely high waves.
- These waves **can travel vast distances** from the storm centre until they reach the shoreline.
- Typically, Kallakkadal occurs due to **strong winds in the southern Indian Ocean**, where ocean swells are generated. These waves then travel northward, taking around **two to three days to reach the coastline**.

Challenges in its Preparedness

- Kallakkadal **happens suddenly without local wind activity**, making it hard for coastal residents to receive advance notice.

Systems like the **Swell Surge Forecast System**, initiated by the **Indian National Centre for Ocean Information Services (INCOIS)** in 2020, provide a **7-day warning**.

Difference Between Kallakkadal and Tsunami

Kallakkadal	Tsunami
Kallakkadal is a **sudden flash flood** event that happens without any apparent change in local winds.	A tsunami is a **massive wave** series caused by **underwater disturbances**.
It is **caused by strong winds**.	It is caused by **earthquakes**, or in some cases **undersea volcanoes** or **landslides**.

7. India TB Report, 2024

News: The Union Ministry of Health and Family Welfare has released the India TB Report 2024.

Findings of the Report

- **Since 2015**, there has been a **decline of 16% in TB incidence** (new cases emerging each year) and an **18% reduction in mortality** due to TB.
- The **incidence rate** in India has fallen from **237 per lakh population in 2015** to **199 per lakh population in 2022**, while the **mortality rate** has declined from **28 per lakh population in 2015** to **23 per lakh population in 2022**.
- ~**32% of TB notifications** in 2023 came from the **private health care sector**, which is an increase of 17% from the previous year.
- The overall notification of TB cases has improved by over 50% in the last 9 years on an annual basis. Uttar Pradesh saw the highest jump in notifications (by 21% compared to the previous year) followed by Bihar (15%).

About National Tuberculosis Elimination Programme (NTEP)

- The National Tuberculosis Elimination Programme (NTEP) is a public health initiative started in 2020 by the Government of India.
  - It was formerly known as the **Revised National Tuberculosis Control Programme (RNTCP)**.
- **Mission**: Its mission is to organize anti-Tuberculosis efforts across the country.
- **Vision**: Achieving a '**TB free India**' through strategies focused on **prevention**, **detection**, **treatment**, and **universal coverage**.

Table: India's commitment to End TB by 2025

Parameter	Base year-2015 (India)	2030 SDG/ END TB Target	India's Commitment for 2025
Estimated annual Incidence	217 cases/Lakh	80% reduction compared to 2015	80% reduction compared to 2015 (44 cases/lakh)
Estimated annual Mortality	4.5 lakh	90% reduction compared to 2015	90% reduction compared to 2015 (Reduce to 45,000)
TB affected families facing catastrophic costs due to TB	?	Zero	Zero

Components

- **Ni-kshay Mitra Initiative** provides additional diagnostic, nutritional, and vocational support to TB patients.
- **Ni-kshay Digital Portal** is a platform for community support for persons with TB.
- Through the **Nikshay Poshan Yojana**, nutritional support is extended to all TB patients during their entire treatment duration.

- Provision of **chemoprophylaxis against TB disease** for paediatric contacts of TB patients and people living with HIV (PLHIV).

8. Food Waste Index Report, 2024

News: Food Waste Index Report 2024 has been released by the UNEP and WRAP (Waste and Resources Action Programme).

About the Findings of the Report

- According to the Food Waste Index Report 2024, **households across the globe wasted over one billion meals a day in 2022**.
  - Whereas, **783 million people struggled with hunger** and a **third (33%) of humanity faced food insecurity**.
- In 2022, **1.05 billion tonnes of food was wasted** (including inedible parts) which amounts to **132 kilograms per capita** and almost one-fifth (20%) of all food available to consumers.
- Out of the total food wasted in 2022, **60% happened at the household level**, with food services responsible for 28%, and retail 12%.
- Many low- and middle-income countries continue to **lack adequate systems for tracking progress** to meet **Sustainable Development Goal 12.3** of **halving food waste by 2030**, particularly in retail and food services.
- Food waste is not a '**rich country problem**'. Difference between average levels of household food waste for high-income, upper-middle, and lower-middle-income countries, was just **7 kg per capita**.
- **Hotter countries appear to generate more food waste per capita in households**. It is potentially due to higher consumption of fresh foods with substantial inedible parts and a **lack of robust cold chains**.
- The report found that **food loss and waste generated 8%-10% of annual global greenhouse gas** (GHG) emissions (almost 5 times that of the aviation sector).
- The cost of both **food loss and waste for the global economy was estimated at US$ 1 trillion**.
- As compared to urban areas, **rural areas generally wasted less food**, due to greater diversion of food scraps to pets, livestock, and home composting.

Key Recommendations of the Report

- **Role of G20 Countries**: Encourage G20 countries to take a leading role in **international cooperation and policy development** to achieve **Sustainable Development Goal (SDG) 12.3**. G20 nations can leverage their influence on global consumer trends to **promote awareness and education** about food waste domestically and internationally.
- **Role of Public Private Partnerships (PPPs)**: Encourage the role of PPPs to reduce food waste and its **impacts on climate and water stress**, bringing together Governments, regional and industry groups to collaborate and deliver a shared goal through a **Target-Measure-Act approach**.
- **Utilisation of the Food Waste Index**: Advocate for countries to use the Food Waste Index to consistently **measure food waste**, **develop robust national baselines**, and **track progress towards SDG 12.3**. This includes **addressing the lack of comprehensive food waste data collection**, especially in the retail and food service sectors.
- **Conducting Representative National Food Waste Studies**: Highlight the necessity for representative national food waste studies in key countries such as **India**, **China**, **South Africa**, **Indonesia**, and **Mexico** to address the variance in data and effectively tackle food waste at both individual and systemic levels.
- **Collaborative Efforts Across Sectors**: There is a need to urge Governments, cities, food businesses, and researchers to **collaborate in efforts to reduce food waste**, emphasising the importance of accurate measurement, innovative solutions, and collective action to achieve SDG 12.3 by halving global food waste by 2030.

Pointly

1. **Tornado in Jalpaiguri**

   A tornado struck the **Jalpaiguri district in West Bengal**, injuring over 100 persons and killing 5.

   A tornado is a **land-based vertical column of violently rotating air** that forms from a thunderstorm to the ground. It can have **wind speeds in the range of 105–322 kms/hour**, according to the **National Weather Service (NWS)** of the United States. The system itself can be stationary or can move at a speed **of ~100 km/hr**.

   These extreme storms are very common in the US but are **rare in India** and have mostly been reported in the **eastern states of West Bengal**, **Odisha** and **Jharkhand** during the **pre-monsoon period**. But there is evidence of some of them having formed in northwest India as well.

   There is **no official monitoring of tornadoes in India** though IMD recorded the recent West Bengal tornado in its press release.

2. **Vortex Rings**

   Mount Etna volcano in Italy has been producing a volcanic vortex rings.

   Vortex rings are generated when volcanic gases (predominantly steam (water vapours) with mix of smoke and other gases) **are released rapidly through a vent in the crater at high speeds**.

   The rings can **remain in the air for up to 10 minutes** but tend to disintegrate quickly if conditions are windy and turbulent. This phenomenon was first observed at Etna and Vesuvius in Italy in 1724.

   In more recent times, volcanic vortex rings have been observed at volcanoes such as **Redoubt** (Alaska), **Tungurahua** (Ecuador), **Pacaya** (Guatemala), **Eyjafjallajökull** and **Hekla** (Iceland), **Stromboli** (Italy), **Aso** and **Sakurajima** (Japan), **Yasur** (Vanuatu), **Whakaari** (New Zealand), and **Momotombo** (Nicaragua).

3. **Mount Etna**

   Mount Etna is an **active volcano** on the **east coast of Sicily** (Italy). Sicily is the **largest island in the Mediterranean Sea**. Etna's peak is the **highest in Italy south of the Alps**, and is **Europe's largest** and **one of the most active volcanoes**.

   Etna's summit has 5 craters, which are responsible for most of the volcano's eruptions. There are also '**flank' eruptions** that occur out of **300-odd vents** of varying sizes along the slopes of the mountain. Since the year 1600, it has **experienced consistent activity**, including at least 60 flank eruptions and numerous additional summit eruptions.

4. **Nimmu-Padam-Darcha Road**

The **Border Roads Organisation (BRO)** connected the strategic Nimmu-Padam-Darcha road in Ladakh. It is 298-km road that will connect **Manali to Leh** through **Darcha** and **Nimmu** on **Kargil–Leh Highway**. It is the **3rd road** which connects Ladakh to the mainland India. Other 2 roads are **Manali-Leh** and **Srinagar-Leh**. The road starts at **Nimmu**, which lies on the **Leh-Srinagar highway**, 35 km before Leh. It meets Manali-Leh highway in **Darcha**, a village in Lahaul and Spiti district. (Refer Map here).

The Nimmu-Padam-Darcha road holds **strategic significance** due to its shorter length compared to the other 2 roads. It will **provide all weather connectivity to the Ladakh region**.
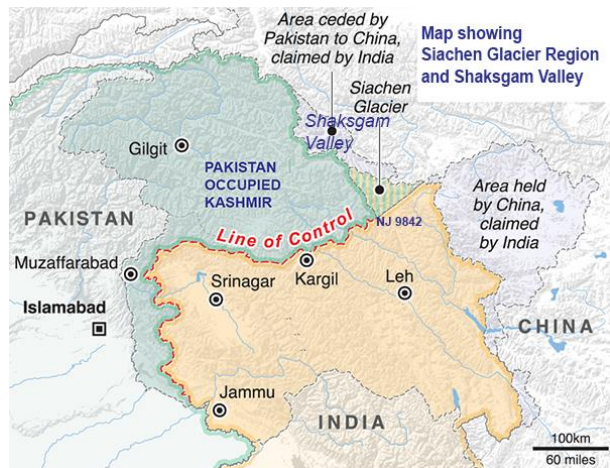
5. **International Narcotics Control Board**

It was established in 1968. This board is the **independent** and **quasi-judicial monitoring body** for the implementation of the **UN international drug control conventions**.

It consists of **13 members** elected by the **Economic and Social Council**. The members serve in their **personal capacity** and are **not Government representatives**. Out of 13 members, 3 members with medical, pharmacological, or pharmaceutical experience are chosen from a list nominated by the **World Health Organization** (WHO), and 10 members are chosen from a list nominated by Governments.

The Board ensures **adequate supplies of drugs for medical and scientific uses**. It ensures that **drugs are not diverted** from a legal source to illegal ones.

6. **Operation Meghdoot**

April 13, 2024, marks **40 years** since the Indian Army **pre-emptively seized the Siachen Glacier** on the Saltoro Ridge.

The glacier had been a point of contention between India and Pakistan **following the ambiguous delineations of the 1949 Karachi Agreement**. The operation was India's assertive response to counter what it viewed as Pakistan's "**cartographic aggression**" in the **undefined territory north of the NJ9842 map reference**, which was the **last demarcated point on the Line of Control** (LoC). The operation involved **complex co-ordination between the Indian Army** and the

Source: Wikimedia commons. The map showing the areas held by Pakistan and China and the Line of Control.

Air Force, deploying troops and dropping supplies via airlift to strategic heights.

The successful execution of Operation Meghdoot not only precluded Pakistani control over the crucial passes but also resulted in **complete Indian dominion over the Siachen Glacier**.

7. **Tachyons**

Physicists have proposed an idea that **our universe is dominated by tachyons**, **hypothetical particles that always move faster than light**. Tachyons are different from "bradyons" like protons, electrons, and neutrons, which move slower than light. However, tachyons have not been observed and are theorized to possess **imaginary mass**, meaning their mass squared would be negative.

According to the Theory of Special Relativity, **particles with mass cannot attain or exceed the speed of light in vacuum because their energy would become infinite**. With an 'imaginary mass' tachyons can potentially travel faster than light without violating current understanding of the laws of physics.

Scientists have conducted a few experiments in search of tachyons using a detector called a **Cherenkov detector**. In this setup, particles move through a medium, and if their speed exceeds the speed of light for that medium, **Cherenkov radiation** occurs. While nothing can travel faster than light in a vacuum, certain mediums allow particles to potentially exceed the cosmic speed limit.

8. **Comets**

Comets are **cosmic bodies made mainly of ice**, **dust**, and **rocky material**, **travelling around the Sun** in **elongated**, **oval orbits**. Originating from the outer reaches of the solar system, they come from either the **Kuiper Belt** or the **Oort Cloud**.

STRUCTURE OF A COMET

plasma tail
Length: up to ~100 million km

dust tail
Length: up to ~10 million km

hydrogen envelope
Length: up to ~10 million km

nucleus
Diameter: few km to tens of km

coma
Diameter: up to ~1 million km

9. **Mother of Dragons Comet**

It is as a 'Halley-type' comet, **orbiting the sun roughly every 71 years**. It has been named by the **European Space Agency** (ESA). It falls under the classification of a **Jupiter-family comet**. Its orbit is affected by the **gravitational force of Jupiter**. It is made up of ice, dust, and rocky elements. When it approaches the Sun, the heat transforms the comet's ice from solid to gas. It's **nearest approach to Earth** will occur in June 2024.
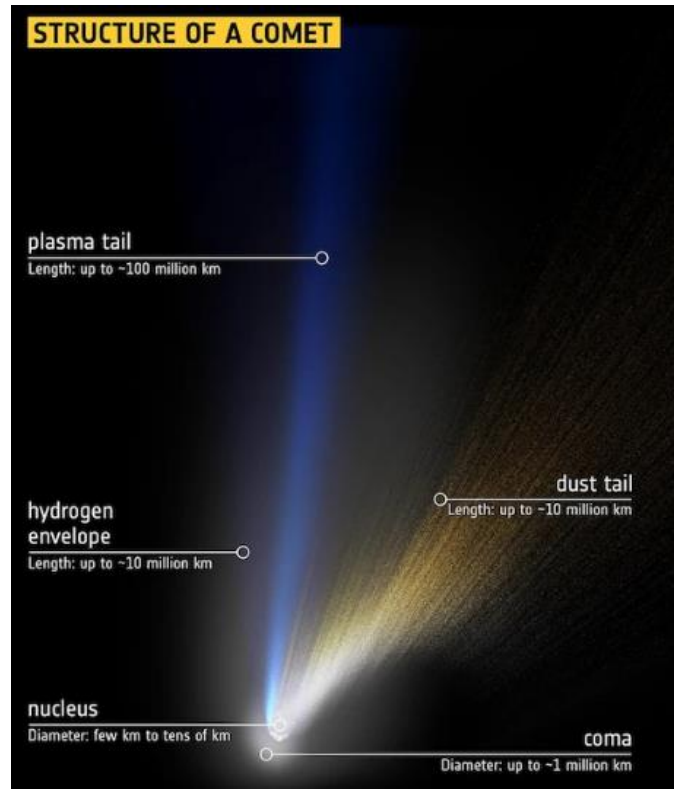
10. **125 Years of Kodaikanal Solar Observatory**

The year 2024 marks the 125th Year of the Kodaikanal Solar Observatory (KoSO). It is a solar observatory owned and operated by the **Indian Institute of Astrophysics**. Kodaikanal is located in the **Palani hills of Tamil Nadu**. The location was picked for the observatory because of its **good atmospheric conditions**. The observatory commenced operations in March 1901. Initially, KoSO had telescopes to study **sunspots**, **prominences**, and **solar radiation**. Now, it has advanced instruments like the **H-alpha telescope** and the **White Light Active Region Monitor** (WARM) for **high solar imaging**.

11. **Exo-atmospheric Missiles**

Exo-atmospheric missiles are **surface-to-air missiles** designed to **counter incoming ballistic missiles**. They are also known as **anti-ballistic missiles** (ABMs). They are designed to **intercept and destroy** any type of **ballistic threat** during the mid-course or terminal phase of their trajectory.
They are specifically designed to **counter intercontinental ballistic missiles** (ICBMs).
They are equipped with advanced technology including **infrared sensors** and **radar systems** to detect and track incoming ballistic missiles and terminate them. They can travel at **hypersonic speeds**. These missiles are guided by an **inertial navigation system** that is updated during flight using contour maps stored in the system's computerized memory.

12. Doxxing

Doxxing is a form of **online harassment** where **someone's private details are publicly disclosed**. This includes **sensitive data** like **phone numbers**, private emails, medical records, Government ID numbers etc. Doxxing also involves the **release of private or semi-private content without the consent** of the individual, who did not intend for it to be shared publicly. This information is often acquired through unlawful means, including **hacking and theft**. The vulnerability to doxxing can be reduced through **robust security measures** like strong passwords, **multi-factor authentication for accounts**, avoiding sharing of sensitive information on social media etc.

13. Statin

Statin is a medicine prescribed to people with a **high risk of cardiovascular disease**. They are commonly prescribed **cholesterol-lowering drugs**. They are also knows as **HMG-CoA reductase inhibitors**. High cholesterol can lead to **arterial plaque accumulation**, which may harden or narrow arteries, **increasing the risk of heart attacks** or **strokes due to sudden blood clots**.

Statins are capable of **lowering LDL** (low-density lipoprotein or "bad" cholesterol) by up to **50% or more**, thus **mitigating artery blockage** and enhancing blood flow. These drugs are associated with a decreased risk of heart disease, stroke, and certain blood clots. However, **many studies have found statins could increase the risk of developing diabetes**.

14. India Achieves Target of Eliminating Kala-azar Fever

According to the most recent data from the **National Centre for Vector Borne Diseases Control** (NCVBDC) **Programme**, India recorded 520 cases of kala-azar in 2023, thus **fulfilling the elimination criteria** established by the WHO. The criteria stipulates that no area within the country should report more than **1 case per 10,000 people**. According to WHO, India represented 18% of the world's kala-azar cases in 2020.

The strategies adopted to eliminate Kala-azar included **intensive spraying** to **reduce sandfly breeding grounds**, **wall plastering** with specific soil to **deter nesting of sandflies** and **compliance to treatment** through regular engagement of ASHA workers.

The **National Vector Borne Disease Control Programme** (NVBDCP) was started in 2003-04 to prevent and control diseases like Japanese Encephalitis (JE), Dengue, Kala-azar, Lymphatic Filariasis, Malaria, and Chikungunya.

15. Kala-Azar

Kala-azar, also known as **visceral leishmaniasis**, is a **parasitic disease** caused by Leishmania parasites (Leishmania donovani in India). It is transmitted through the bite of **infected sandflies**. Its symptoms include fever, weight loss, enlargement of the spleen and liver, and anaemia. Kala-azar primarily affects the spleen, liver, and bone marrow. Its fatality rate is ~95% if left untreated. It is a **neglected tropical disease** and is the **2ⁿᵈ-largest parasitic killer in the world** (after malaria).

16. CoViNet

The WHO has launched CoViNet. It is a **network of global laboratories** with expertise in **human**, **animal** and **environmental coronavirus surveillance**. Its objective is to identify and monitor potentially novel coronaviruses that could emerge shortly. At present, it comprises **36 laboratories** from **21 countries** in all 6 WHO regions. There will be **3 Indian laboratories** in the network; the CSIR - **National Environmental Engineering Research Institute**, the ICMR - **National Institute of Virology** in Pune, and **the Translational Health Science and Technology Institute**.

- CoViNet will have **animal health and environmental surveillance**. This will ensure **timely risk assessment** to feed **WHO policies and support protective measures**.
- It will support the building of more laboratories to **monitor MERS-CoV** and **novel coronaviruses** of **public health importance** in low- and middle-income countries.
- The generated data will guide the work of WHO's **Technical Advisory Groups on Viral Evolution** (TAG-VE) and **Vaccine Composition** (TAG-CO-VAC) and others. This will ensure that **global health policies and tools are based on the latest scientific information**.

17. Global Hepatitis Report 2024 and Hepatitis Disease

It has been released by the WHO. According to the Report, Hepatitis is the **2nd-most common infectious cause of death** worldwide, claiming 1.3 million lives annually. **Hepatitis B was responsible for 83%** of the deaths, while **Hepatitis C accounted 17%**. Men make up 58% of all cases.

Hepatitis is an **inflammation of the liver**. It causes liver diseases including acute and chronic infections, liver failure, **cirrhosis**, and hepatocellular carcinoma.

Type of Hepatitis

	A	B	C	D	E
Source of virus	feces	blood/blood-derived body fluids	blood/blood-derived body fluids	blood/blood-derived body fluids	feces
Route of transmission	fecal-oral	percutaneous permucosal	percutaneous permucosal	percutaneous permucosal	fecal-oral
Chronic infection	no	yes	yes	yes	no
Prevention	pre/post-exposure immunization	pre/post-exposure immunization	blood donor screening; risk behavior modification	pre/post-exposure immunization; risk behavior modification	ensure safe drinking water

Hepatitis can be spread through **infectious means such as viruses**, **contaminated food and water**, and **sexual contact**. It can also be caused by **non-infectious means** like **excessive alcohol consumption**, **toxins**, **certain medications** etc.

The predominant **mode of transmission for Hepatitis B is from mother to child**, accounting for ~ 90% of cases where the infection is passed on during childbirth.

Hepatitis virus has **5 primary strains**, identified as types A, B, C, D, and E. Each type causes liver disease but vary significantly in transmission methods, disease severity, and geographic prevalence.

Hepatitis B is preventable through immunization and **Hepatitis C can be effectively cured using antiviral drugs**.

18. Vaping

A study has found that vaping is associated with **19% rise in the likelihood of heart failure**. Vapes or **e-cigarettes** use **electronic heating to vaporize a mixture of glycerine**, **flavours**, nicotine (addictive component found in traditional cigarettes). It is called **Electronic Nicotine Delivery Systems (ENDS)**.

Nicotine in e-cigarettes might **lead to addiction** rather than helping quit regular cigarettes. Accidental exposure to the liquid could also result in **acute nicotine poisoning**. Numerous vapes emit chemicals that can **lead to lung diseases** and contain **cancer-causing substances** and **heavy metals**. It can cause shortness of breath, chest pain and severe difficulty in breathing. Vaping can cause **stiffening of the heart muscles**, leading to improper filling between contractions and heart failure.

34 countries have banned the sale of e-cigarettes. In India, the possession of e-cigarettes and similar devices is a violation of the **Prohibition of Electronic Cigarette Act**, **2019**.

19. Ashwagandha

It is an **evergreen shrub** found in parts of India, Africa, and the Middle East. It is also known as **Indian ginseng** or **Indian winter cherry**. Its name is derived from the Sanskrit words '*ashwa*' meaning horse and '*gandha*' meaning smell, which refers to the horse-like odour of its roots. It belongs to the Solanaceae, or nightshade, family which is the **same family as tomatoes and potatoes**.It is scientifically known as Withania somnifera, and has been used as a **medicinal herb in *Ayurvedic* medicine**.

It is classified as an **adaptogen**, i.e., it **helps the body manage stress and can restore physiological balance**. Its benefits include **reducing inflammation**, **boosting energy levels**, **easing anxiety and pain**, and **enhancing quality of sleep**. Its various parts (roots, leaves, and berries) contain differing levels of **bioactive compounds**. One such is **withanolides**, natural steroids that are known for their **antioxidant and anti-inflammatory properties**.

20. Caracal

It is a **medium-sized wild cat** native to Africa, Middle East, Central Asia, and South Asia including India. In India it is called **Siya gosh**, translates as 'black Ear' (Persian).

It has long legs, a short face, long canine teeth. It has **distinctive ears that are long and pointy** with tufts of black hair at their tips. It is a **primarily nocturnal animal**. It is a **carnivore** and preys upon small mammals, birds, and rodents. It has an **extraordinary ability to catch birds in flight**.

Earlier they could be found in arid and semi-arid scrub forest regions of 13 Indian States. They are found primarily in Rajasthan, followed by Gujarat, Madhya Pradesh, Haryana, Uttar Pradesh and Maharashtra. Their **IUCN Status is Least Concern** and they have been classified in **Schedule I of the Wildlife Protection Act**, **1972** and **Appendix I of CITES**.

21. Criollo Cattle's Ability to Adapt to Climate Change

It originated in the Americas. It descended from cattle introduced by Spanish explorers during colonization. It is compact-bodied cattle of **small-medium size**. **It is capable of thriving in various climates**, including **tropical/subtropical regions**, and **hot and humid areas**, and **arid**, **rugged terrains**. It has **developed natural immunity to common diseases** like ticks and parasites in their native habitats.

22. Use of Tools by Fish

3 fish species in the Laccadive Sea **have been spotted using tools**. All 3 species **used live or dead coral structures** as **anvils** to **break the hard shells of sea urchins**, so they could get to the **edible bits inside**. Tool usage among fish has predominantly been **observed in just 18 species of the wrasse family** (Labridae), which vary in size, prey, and location.

Reports of chimpanzees using straws to drink water and crows using leaves to retrieve insects from crevices are well-documented. Use of tools by aquatic animals are rare and there is a **common perception that fish possess lower intelligence**.

The study underscores the need for thorough and frequent underwater observations. Such insights are vital for exploring broader questions about animal intelligence and ecological dynamics.

23. Laccadive Sea

The Laccadive Sea, (Lakshadweep Sea), is a body of water bordering India, the Maldives, and Sri Lanka. It is located to the southwest of Karnataka, to the west of Kerala, and to the south of Tamil Nadu. There are **numerous coral reefs in the Laccadive Sea**, including the Lakshadweep islands, which host 105 coral species.

The **Gulf of Mannar**, within the Laccadive Sea, has been renowned for its pearl banks of Pinctada radiata and Pinctada fucata for over two thousand years. The sea also supports the collection of **Shankha** mollusks (Xancus pyrum), whose shells **hold ritual and religious significance**.

24. *Muskh Budij*

It is an **indigenous traditional and short**, **scented-rice variety** cultivated in **Kashmir** (mainly Anantnag and Budgam). It is distinguished for its **intense fragrance**. It possesses a harmonious blend of taste and aroma and have rich **organoleptic properties**. The consumption of aromatic rice in Kashmir has now been limited to **special occasions** like marriages and festivals due to **its low availability and high cost**. It had received GI Tag in 2023. Scientists have reported that **altitude and temperature play an important role** in the development of its **distinct aroma**.

25. GI Tag Rice Varieties

GI Tag Variety	Characteristics
Ambemohar	• Short-grain rice grown in **Maharashtra**. • Popular for its **quick-cooking characteristic** and its beautiful aroma that is **reminiscent of mango blossoms**.
Mullan Kazhama	• Fragrant rice from **Wayanad**. • Now cultivated only by a handful of organic paddy farmers in Wayanad.
Gobindo Bhog	• Small-grained fragrant rice from **West Bengal**. • Categorised as a *khaas dhan* (special grain), the chosen offering for Lord Krishna on Janmashthami. • Prepared as *payesh* (the Bengali version of rice *kheer*), and is widely used for auspicious offerings, pujas and festivals.
Seeraga Samba	• Slender rice with a sublime scent from **Tamil Nadu**. • Used to make elaborate pulav during special occasions and is common to both Dindigul and Ambur biryani (State's 2 most iconic biryanis).
Radhuni Pagol	• Fragrant rice from West Bengal, the name translates to '*making the cook go mad*'. • Easily digestible, used with chingri malai curry and kosha mangsho.
Chak Hao Amubi	• Fragrant variety of sticky black rice grown in **hills of Manipur**. • Packed with **heart-healthy anthocyanins** and has a **slightly sweet**, **nutty flavour** exemplified in the Manipuri black rice *kheer*. • Staple delicacy at local feasts and festivals

26. Pahariyas Tribe

They primarily reside in **Jharkhand and West Bengal**, with smaller populations in UP, Maharashtra, and Odisha. They are **forest dwellers** and mainly engage in **jhum or shifting agriculture**. In Jharkhand, the Pahariyas are divided into 2 groups:

- **Mal Pahariya**: They inhabit the southern hills of *Damin-i-koh* and the southern and eastern regions of the Santhal Parganas. They belong to the **Proto-Australoid race**. They speak **Mal Pahariya language**. This language is influenced by local dialects **Havli** and **Chharisgarhi**. Their language is mixture of Santali, Bengali and Hindi.
- **Shauria Pahariya (or Maler Paharia):** They are predominantly found in the Santhal Parganas. Their main settlement was in the **region of Karnataka**, but today they are primarily located in the mountainous areas of Rajmahal and Santhal Pargana. They speak **Malto** (native language) which shows influences from Havli and Chharisgarhi languages.

The Pahariyas **worship deities specific to their households**, **clans**, and **villages**, such as Mait, Maa, Gangadi, Sunadi, Rupadi, and Budharaj. **They also believe in naturalism** and **worship natural objects** like Sun, rivers, mountains, trees, animals, birds, plants and bushes.

27. Gulaal Gota

It is a **small ball made of lac**, filled with **dry gulaal**. People throw these balls at each other during **Holi**, and they break upon impact. Use of gulaal gota is unique to **Rajasthan** during the Holi festival. They are made using lac, into which colours are mixed and then blown in blower (called "phunkni") to give them spherical shapes. Afterward, the balls are filled with gulaal and sealed with lac. They are made exclusively by local community in **Jaipur** called *Manihaars*.

28. Fort Emmanuel

It was built in 1503 by the Portuguese. It is one of the **earliest European forts built in India**. It is located in Kochi, Kerala and was named after the monarch of Portugal. It was a large structure that **enclosed an entire township**, strengthening Portuguese control in the area. It remained under Portuguese rule until **1683** when it was **captured by Dutch colonial forces**. The British took over in 1795 and by 1806, had demolished most of its walls and bastions. The Portuguese had a strategy of building forts in coastal colonies like Kochi, Goa and Kodungalloor which were **crucial for their defense**. The forts supported their naval capabilities and provided support to protect sea-trade.

29. Shrinkflation

It is combination of two words 'shrink, and 'inflation'. It refers to the **reduction in product size**. As the **production costs are rising**, the companies are **reducing product's size instead of raising price** e.g., chocolate companies may reduce the size of chocolate bar from 50g to 45g (keeping the price same), instead of raising the price of 50g bar (which has a more psychological impact on consumer buying behaviour). The use of such tactics can **complicate accurate inflation assessments**.
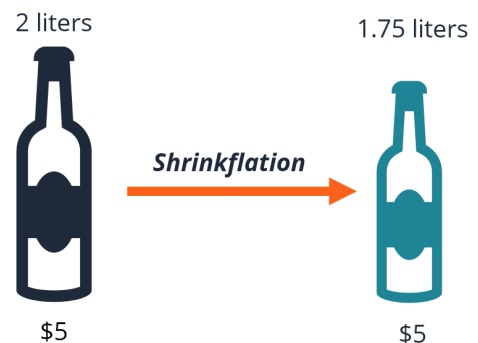
30. Co-lending by NBFCs and Banks

The RBI had introduced the **Co-Lending Model** (CLM) in September 2018 to **encourage joint loans by banks** and **Non-Banking Financial Companies** (NBFCs) for **priority sectors**. This model **promotes collaboration** between banks and NBFCs to better address the needs of the priority sector and aims to improve credit access to traditionally underserved sectors, ensuring more affordable loans. Priority sector includes **agriculture**, **MSMEs**, **social infrastructure**, and **economically weaker sections**.

31. Suvidha Portal

It has been developed by the Election Commission of India (ECI). The portal represents technological advancement dedicated to **upholding the principles of openness**, **fairness**, and **transparency in elections**, **ensuring a fair playing field**.

It provides a **convenient online system for political parties and candidates to apply for permissions at anytime from anywhere**. Permissions can be related to **organizing rallies**, **opening temporary party offices**, **door-to-door canvassing**, video vans, helicopters, obtaining vehicle permits, distributing pamphlets etc. This improves both efficiency and transparency.

It also **supports the scrutiny of election expenditures** by making permission data readily available. Thus it fosters **greater accountability and integrity**.

32. International Telecom Union

It is the UN specialized agency for **information and communication technologies**. It is an **inter-governmental organization** that coordinates between **Governments and private sector bodies** with respect to **global telecommunication and information communication technology** (ICT) **services**.

It was **established in 1865 as the International Telegraph Union**. In 1947, the ITU became a specialized agency of the UN. It is headquartered in Geneva, Switzerland. It has a membership of 193 countries and nearly 800 private sector entities and academic institutions.

It **allocates global radio spectrum and satellite orbits**. It helps incoordination and setting of technical standards related to telecommunication/ICT. It strives to improve access to ICTs in underserved communities worldwide. India has been an active member of the ITU since 1869 and has been a regular member of the ITU Council since 1952.

33. New Features in UPI

The RBI recently announced two new features for UPI users, aiming to **enhance ease of transactions** and **cash deposits**.

- **Cash deposit facility through the use of UPI**: Customers will now have the option to **deposit cash at cash deposit machines** (CDMs) in banks and ATMs using the **UPI App**. At present, cash deposits at CDMs typically necessitate the use of a debit card, whether at banks or ATMs.
- **Allowing 3rd-party apps to access UPI for Prepaid Payment Instruments (PPIs)**: At present, UPI payments from **Prepaid Payment Instruments (PPIs)** require using the web or mobile app provided by the PPI issuer. It's now suggested to allow using third-party UPI apps for making UPI payments from PPI wallets.

34. Electronic Trading Platforms (ETPs)

The RBI Governor has raised concerns over unauthorised Electronic Trading Platforms (such as forex trading platforms) and has asked banks to maintain vigil against such illegal activities.

They are **digital systems** where transactions involving various eligible instruments like securities, money market instruments, foreign exchange instruments, or derivatives can be executed.

Unauthorized ETPs engage in **false advertising**, promising forex trading opportunities to people living in India. Scams and significant financial damage to individuals by the agents of these unauthorised ETPs who enticed users with promises of lucrative returns from forex trading or investment plans.

ETPs are regulated by RBI framework for authorisation of electronic trading platforms 2018. RBI maintains and updates a list of **unlicensed forex trading platform** and **creates awareness among the public** regarding the same.

35. Meme Coins

They are **digital currencies** created as **satire/humorous tribute to the internet culture**. They are also known as '**memetic tokens**'. They have branding and names **inspired by internet memes**, **jokes**, or **phenomena**. They are **humorous and designed for virality**, often featuring **quirky logos to appeal to the widespread online community**. They are **highly volatile** and their price can experience rapid fluctuations, making them **risky investments**. They typically have a **massive or uncapped supply**, leading to **very low values per token**.

They **leverage blockchain technology**, often utilising smart contracts on platforms like Ethereum and Solana. It is **easy to create a meme coin as compared to traditional crypto-currencies**. Virtually anyone can launch a meme coin. Some of the famous meme coins are **Dogecoin**, **Shiba inu**, **Retik Finance**.

36. Paradip Port

Paradip Port has become the **India's highest cargo-handling major port**, surpassing **Deendayal Port**, **Kandla**, for the first time in 56 years. It is a natural, deep-water port. It is located on the East coast of India in **Jagatsinghpur district of Odisha**. It is located at the c**onfluence of the Mahanadi river and the Bay of Bengal**. The port is managed by the **Paradip Port Trust** (PPT), an autonomous corporation operating under the **Ministry of Shipping**. (*Refer EPIC October 2022 (click) for Port Infrastructure in India*).

37. Shrimp Farming in India

India is the 2nd-largest producer of **Whiteleg Shrimp** (Litopenaeus vannamei). India has become one of the world's top shrimp exporters. India's share in the US market increased from 21% to 40% in 2022-23. In 2022-23, out of the US$ 8.09 billion exported seafood, shrimp's share was US$ 5.6 billion. Andhra Pradesh accounts for almost 70% of India's shrimp output.

A human rights organization based in Chicago has accused India of human rights and environmental violations in the shrimp farming sector.

38. Athletics Federation of India

It is the apex body for running and managing athletics in India. It was established in 1946 and was formerly known as the **Amateur Athletic Federation of India** (AAFI). It is a **non-governmental** and **non-profitable autonomous body**. It is affiliated with the World Athletics, AAA and the Indian Olympic Association. It has 32 affiliated State units and institutional units. It organises **National Championships** and selects the Indian Athletics Teams for various international competitions including Olympics.

NOTE: *With effect from 1st February 2022, the monthly ForumIAS Epic Magazine, for the month will provide wholistic coverage for the said month up to 20th of the month. This ensures that issues / stories that occur after 21st of the month are allowed to fully develop and are covered wholistically in the next month.*