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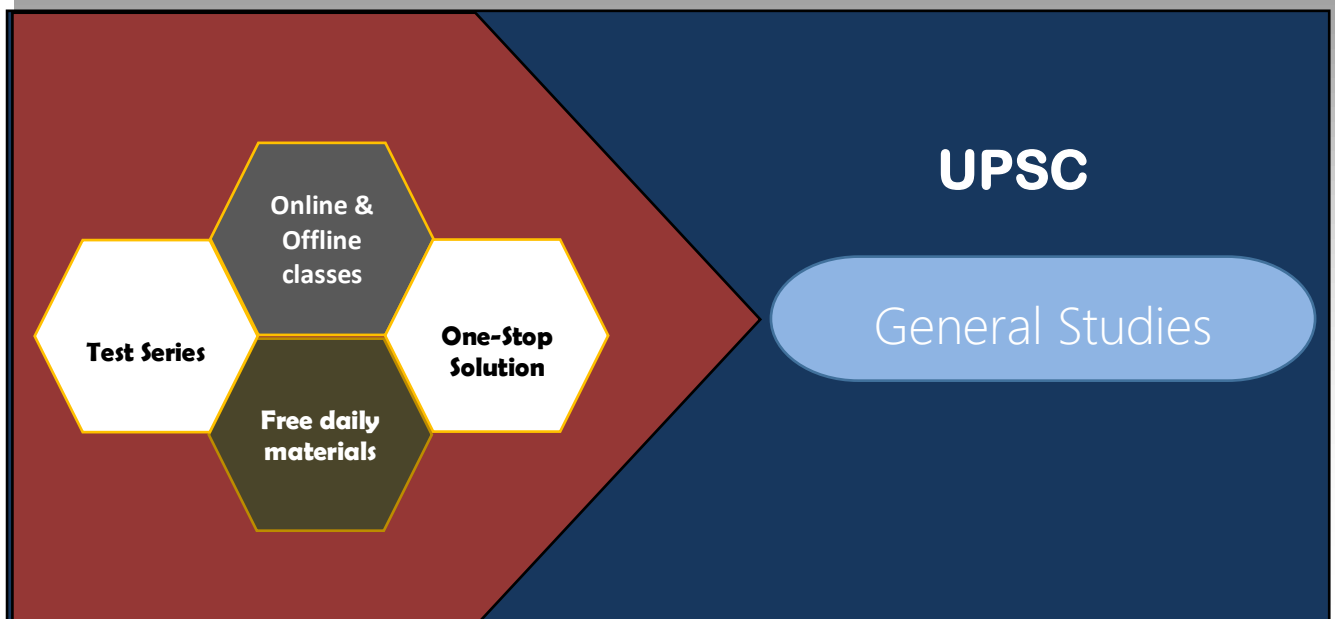
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SHIKSHA

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**Articles of the day
THE HINDU & INDIAN EXPRESS**



Contents

GS 1 : Heritage,culture ,Geography of the World and Society

1. Impotance of Hydrothermal Vents
2. Arctic Tundra is Emitting More Carbon than It is absorbing
3. Key takeaways Golan Heights
4. India's Demographic Profile: Opportunities and Challenges
5. Outcomes of the Vaikom Satyagraha
6. Genetic Heritage of the Nicobarese
7. Concerns in rapid urbanization in India
8. Key facts of Cyclone Fengal
9. Theory of Mutualism and Anarchism
10. Nagaland's Hornbill Festival

GS 2 : Polity, Governance, International Relations

1. Strengthening election commission of India
2. Public awareness and community engagement play in combating NCDs
3. Key facts of PM-WANI
4. Risk factors of Non Communicable Diseases
5. Donald Trump Threat to BRICS Over Currency
6. Controversies around pardoning power
7. Pro-Active Governance and Timely Implementation (PRAGATI) platform
8. Key takeaways of Sexual Harassement of Women at Work place Act, 2013
9. Strategic objectives of India in West Africa
10. Key facts about SheSTEM 2024
11. Women Personnel in the Central Armed Police Forces (CAPFs)
12. Key Areas of Cooperation between India-Bhutan
13. Challenges Faced by India in Eliminating TB
14. Nationwide Campaign 'Prashasan Gaon Ki Ore'
15. Kerala's Fund Utilization for Disaster Relief under Scrutiny
16. Key Objectives of Railways (Amendment) Bill 2024 Introduced
17. India-Australia CCEA Stocktake
18. Features of PM YASASVI Scheme
19. Potential impacts of Trump's protectionist trade policies on India
20. Impeachment of High Court Judge
21. Key Recommendations by the Kovind Panel on One Nation, One Election:
22. Significance of Education in Mother Tongue
23. Challenges of Simultaneous election

24. Significant key features of Railways Amendment Bill 2024
25. Why Switzerland suspends India's MFN
26. One Candidate One Constituency
27. Benefits of Greenwashing Indian Railways
28. Functions of Central Consumer Protection Authority (CCPA)
29. Scheme for Promotion of International Cooperation for AYUSH
30. Rationale behind minority rights

GS 3 : Economy, Science and Technology, Environment

1. Guidelines on preventing greenwashing
2. Air Pollution Crisis
3. Role of Ethanol Blending in Energy Security and Rural Economy
4. Emerging H5N1 Mutations and Their Potential Impact on Human Infections
5. Impact of Removing Windfall Tax
6. Key takeaways of Ratapani Tiger Reserve
7. The National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)
8. Need for the Project INROAD
9. How land degradation is a matter of concern
10. Guidelines and key highlights of Natural Farming
11. Key Outcomes of COP 29
12. Targets of India for Viksit Bharat 2047
13. Suggestions by CII to maintain fiscal discipline
14. National Mission on Natural Farming
15. Why a Free Fall in the Rupee Seems Unlikely
16. Key provisions of Digital Agriculture Mission
17. International Fund for Agricultural Development (IFAD)
18. The importance of ANI versus OpenAI
19. Barriers to space sustainability
20. Importance of Commercialization in India's Space Sector
21. Suggested measures taken by the Indian Government to tackle Global water crisis.
22. What can Delhi learn from the Beijing experience in Air quality Index
23. Significance of Artificial Solar Eclipse
24. India's Progress in Quantum Satellite Technology
25. Jalvahak scheme
26. India's Initiatives in Carbon Markets:
27. Labour committee asks Centre to increase minimum PF pension
28. Wage disparities in India
29. Key findings of NEXUS report
30. Country Climate and Development Reports (CCDRs)

GS 1 : Heritage, culture ,Geography of the World and Society

1. Impotance of Hydrothermal Vents

- **Indian oceanographers** using an **Automatic Underwater Vehicle (AUV)** launched from the research vessel **Sagar Nidhi**, captured the first-ever image of an **active hydrothermal vent** located 4,500 meters below the **Indian Ocean's surface**.
- The site is significant for mineral exploration under the **Deep Ocean Mission** by the **Ministry of Earth Sciences**.

Active Hydrothermal Vent

- **Seafloor Hot Springs:** They are openings in the ocean floor where geothermally heated water flows out.
- **Tectonic Activity:** They are often found near volcanically active areas, especially mid-ocean ridges where tectonic plates are moving apart.
- **Types of Vents: Black Smokers:** Emit very hot water (over 350°C) that's rich in sulfides, making the water appear black. **White Smokers:** Emit cooler water with lighter-colored minerals like barium, calcium, and silicon.

Importantance

- **Unique Ecosystems:** Hydrothermal vents support unique ecosystems that thrive in the absence of sunlight.
- **Chemosynthesis:** Specialized bacteria and archaea use chemicals from the vents (like hydrogen sulfide) to produce energy, forming the base of the food web.
- **Biodiversity:** These ecosystems are home to a variety of unusual creatures, including tubeworms, giant clams, and vent crabs.
- **Origin of Life:** Some scientists believe that life on Earth may have originated in hydrothermal vent environments.

Deep Ocean Mission

- **Brief:** It is a flagship initiative of the Government of India **launched in 2021** under the **Ministry of Earth Sciences (MoES)**.
- **Aim:** To explore and harness the vast resources of the deep ocean while addressing challenges in oceanography and marine ecosystems.

- **Key Objectives: Exploration of Deep-Sea Resources:** Study and map hydrothermal vents, polymetallic nodules, and cobalt-rich crusts found in the Indian Ocean. **Development of Technology for Deep-Sea Mining:** Build and deploy advanced equipment and vehicles for mining at depths of up to 6,000 meters. **Biodiversity and Environmental Studies:** Conduct research on marine ecosystems and unique life forms in deep-sea environments.

2. Arctic Tundra is Emitting More Carbon than It is absorbing

- Arctic tundra, which has stored carbon for thousands of years, has now become a source of greenhouse gases (GHGs), according to a new analysis report by the National Oceanic and Atmospheric Administration's (NOAA).
- The analysis, 'Arctic Report Card', is a yearly report on the polar region and was published last week.

How does the Arctic tundra store carbon?

- In a typical ecosystem, plants absorb carbon dioxide (CO₂) from the atmosphere through photosynthesis. These plants grow, die, or are eaten by animals which also grow and die. When they die, the carbon in their corpse feeds microorganisms such as bacteria or fungi which break down larger molecules and return CO₂ to the atmosphere, thereby completing the carbon cycle.
- However, in the case of Arctic tundra, the decomposition of organic matter is dramatically slowed down due to the cold climate. Plant and animal remains can stay trapped for thousands of years in permafrost thwarting CO₂ from getting released back into the atmosphere.

Why is the Arctic tundra emitting more carbon than absorbing it?

- In recent years, however, the Arctic tundra's ability to emit less and absorb more carbon has taken a hit. The new analysis confirmed that the ecosystem has now become a source of CO₂ and methane (CH₄) emissions.
- That has happened for two main reasons. One is rising temperatures. The report said the Arctic is warming four times the global rate.
- As a result, the Arctic's permafrost is thawing, meaning microbes in the soil are becoming active and breaking the organic matter down, releasing CO₂ and CH₄ into the atmosphere.
- Another reason is that, in recent years, the Arctic has witnessed an increase in the frequency and intensity of wildfires. Last year was the worst wildfire season in the Arctic on record. Wildfire smoke adds GHG emissions to the atmosphere while also speeding up the thawing of permafrost.

- Wildfires and rising temperatures together, between 2001 and 2020, caused the Arctic tundra to release more carbon than its plants removed from the air, probably for the first time in many millennia, the report said.

3. Key takeaways Golan Heights

- Israel is set to double its population on the occupied Golan Heights while saying threats from Syria remained despite the moderate tone of rebel leaders who ousted President Bashar al-Assad a week ago.
- Israel captured most of the strategic plateau from Syria in the 1967 Six-Day War, annexing it in 1981.

Key takeaways

- The Golan Heights is a strategically significant plateau located in southwestern Syria, bordered by Israel, Lebanon, and Jordan.
- The Golan Heights covers an area of approximately 1,800 km². It is characterized by its hilly terrain and basaltic rock formations.
- The Golan Heights offers a vantage point overlooking the Jordan River valley and the Sea of Galilee.
- It is bordered by the Yarmouk river in the south and the Sea of Galilee in the west.
- The hilly land is fertile, and the volcanic soil grows apple and cherry orchards as well as vineyards. The region has vital water sources that feed the Jordan River, including the Hasbani River, which flows from Lebanon and through the Golan.
- Highest Point: The highest elevation is Mount Hermon, which stands at 2,814 meters (9,232 feet).
- Ottoman Rule: The Golan Heights came under Ottoman control in the 16th century and later became part of the French Mandate in Syria.

Modern History:

- During the Six-Day War in 1967, Israel captured the Golan Heights. During the 1973 Arab-Israeli War, Syria attempted to take back the Golan Heights but failed to do so.
- In 1974, the UN got involved, deploying peacekeeping forces in the area after Israel and Syria signed an armistice.
- The Security Council established the UN Disengagement Observer Force (UNDOF) the same year as it tried to maintain a ceasefire and creating a ceasefire buffer zone in the area. As of April, 1,274 UN personnel are deployed in the Golan Heights.
- In 1981, Israel formally declared its annexation of the Golan Heights.

- In 2019, the US, under then-President Donald Trump, recognised Israeli sovereignty over the Golan Heights. The recognition still stands, even under President Joe Biden's administration.

4. India's Demographic Profile: Opportunities and Challenges

- The recent discussion about urging families to have at least three children, has reignited a critical debate on India's population policies.
- This discussion raises questions about whether India is equipped to support a larger population with adequate education, healthcare, and social services.

India's Demographic Profile: Opportunities and Challenges

- **Demographic Composition:** India is the world's most populous country, with over 1.4 billion people. A significant portion of the population is young, presenting an **opportunity for economic growth through a "demographic dividend."** However, this opportunity hinges on adequate investments in education, healthcare, and skill development.
- **Comparisons with Other Nations:** Unlike countries such as Japan and Italy facing population decline, India does not currently face a demographic crisis. Therefore, proposals to increase family size appear unnecessary, especially given existing infrastructure and resource constraints.
- **Population Growth Trends:** Fertility rates in India have been steadily declining, with the Total Fertility Rate (TFR) dropping to 2.0 in 2023 – below the replacement level of 2.1 in many states. Promoting population growth amidst such trends could strain existing resources.

Current State of Public Investment in Human Capital

- **Education: Public expenditure on education has remained below 3% of GDP for over a decade.** This is significantly lower than the **global average of 4.7%** and inadequate for ensuring universal access to quality education. The share of education in the government budget has declined from 10.7% to 9.2% over the past seven years, raising **concerns about the state's prioritization of education.** Insufficient funding leads to overcrowded classrooms, poorly trained teachers, and inadequate facilities, especially in rural and underserved areas.
- **Healthcare: Public healthcare spending has stagnated at less than 2% of GDP, far below the 6% recommended by the WHO.** Inadequate investment results in **high out-of-pocket healthcare expenditures**, pushing many families into poverty.
- **Impact on Human Development:** A poorly educated and unhealthy population diminishes productivity and undermines economic growth.

Increasing family sizes without addressing these systemic issues could exacerbate poverty and inequality.

Quantity vs. Quality: The Case for Prioritizing Human Development

- **Importance of Quality:** A larger population does not inherently translate into economic growth. **The quality of human capital – education, skills, and health – is far more critical for long-term development.** Countries with smaller populations but higher human development indices (HDI) consistently outperform larger, underdeveloped populations.
- **Labour Market Realities:** India faces a paradox where educated individuals experience higher unemployment rates: Structural reforms are necessary to create jobs aligned with the skills of the educated youth.
- **Demographic Dividend at Risk:** Without significant investments in education and healthcare, India risks turning its demographic dividend into a demographic burden.

Conclusion

- While a larger population may seem beneficial in theory, the economic, social, and infrastructure realities suggest otherwise.
- Increasing family sizes without addressing systemic challenges in education, healthcare, and employment risks worsening existing inequalities and undermining long-term development.

5. Outcomes of the Vaikom Satyagraha

- Over a century ago, the Vaikom Struggle broke caste barriers in Travancore, sparking mass movements for religious reform, inspiring Periyar's Dravidian Movement, and advancing egalitarian principles within Hindu society.

Key motivations and outcomes of the Vaikom Satyagraha

- **Social Inequality:** The primary motivation was to challenge the caste-based discrimination that prohibited backward caste Hindus from accessing streets near the Vaikom Mahadeva temple.
- **Demand for Equal Rights:** A call for equality and dignity for all castes within the Hindu religion.
- **Religious Reform:** The movement sought to highlight the need for social justice through religious reform and temple entry rights.
- **Political Awareness:** It aimed to bring political attention to caste discrimination and mobilize support for broader social changes.

Outcomes:

- **Immediate Impact:** The restrictions on backward castes from walking near the temple were lifted in 1925, marking a significant social reform milestone.
- **Mass Mobilization:** It became one of the first large-scale movements in South India that united people across caste and class lines.
- **Precedent for Temple Entry Movements:** The success of Vaikom inspired subsequent movements across India, including protests led by B.R. Ambedkar.
- **Legislative Reforms:** It influenced the introduction of laws like the Madras Temple Entry Authorization Act (1947), allowing all Hindus to enter temples.
- **Foundation for Social Justice Policies:** The movement set the stage for government interventions in temple management and appointments of priests from backward castes.

How did the leadership of the movement influence its success?

- The success of the Vaikom Satyagraha can be attributed largely to its leadership. Key figures included **Periyar E.V. Ramasamy**, who played a crucial role in mobilising support across various social strata and employing nonviolent methods of protest. His involvement transformed the movement into a mass agitation that attracted participants from all classes.
- The support from **Mahatma Gandhi**, who visited Vaikom in March 1925 and engaged with various caste groups, further amplified its impact. The collaboration among leaders from different backgrounds, including local leaders like **T.K. Madhavan** and **K.P. Kesava Menon**, was instrumental in broadening the movement's appeal and sustaining momentum against state repression.

Contemporary society learn from the Vaikom Satyagraha regarding caste and social justice

- **Collective Action:** The movement exemplifies how collective action can effectively challenge systemic injustices. It highlights the importance of unity among diverse groups in advocating for social change.
- **Nonviolent Protest:** The use of nonviolent methods remains a powerful tool for social movements today. The Gandhian approach adopted during the Vaikom Satyagraha serves as a model for contemporary struggles against discrimination and inequality.
- **State Intervention:** The eventual recognition of rights for marginalised communities underscores that government intervention can be necessary to dismantle entrenched social hierarchies. This raises discussions about how modern states can balance secularism with equitable access to public resources.

- **Continuous Struggle:** The resistance faced by reformers during and after the Vaikom Satyagraha illustrates that societal change is often met with opposition. This calls for sustained efforts in advocating for equality and justice in today's context.

Conclusion: The Vaikom Satyagraha was a landmark movement for caste and social justice, showcasing the power of collective action, nonviolence, and reformist leadership. Its legacy inspires continued efforts toward equality, challenging entrenched discrimination, and fostering inclusive societies.

6. Genetic Heritage of the Nicobarese

- A recent genetic study has revealed that the 25,000-strong **Nicobarese population** has significant ancestral connections with Austroasiatic populations of South and Southeast Asia.

Key Findings of the Study

- **Austroasiatic Connection:** The study revealed that the Nicobarese population shares genetic affinity with the 'Htin Mal' population in mainland Southeast Asia, who speak an Austroasiatic language.
- The Htin Mal community has remained **ethnically distinct** while exhibiting a pronounced genetic drift from the Nicobarese.
- **Timeframe of Migration:** Earlier theories placed the migration of the Nicobarese linguistic ancestors to the early **Holocene period** (about 11,700 years ago).
- The new study dates the Nicobarese migration to approximately **4,500–5,000 years ago**.
- **Genetic Drift and Isolation:** The Nicobarese show distinct genetic signatures, which reflect long-term isolation on the islands.

Significance of the study

- The research provides new insights into the timeline of **Nicobarese population** settlement, revising previous assumptions. It also highlights the **interplay between migration, isolation, and cultural evolution** that has shaped the unique identity of the Nicobarese tribe in the Nicobar archipelago.

7. Concerns in rapid urbanization in India

- World Cities Day is celebrated on 31st October every year by the United Nations General Assembly.

- **Urbanization** – Urbanization the process of people moving from rural to urban areas, and the corresponding growth in the number of people living in cities.
- **Significance** – Urbanization, along with industrialization and sectoral change, hold key to the nature of socio-economic transformation in country.
- **Global trend** – The world’s urban population has reached an estimated 57.5% of the world’s total population, with projections to double by 2050.
- **Urbanization in India** – As per 2011 census, urban population in India was about 31.2% of the total population.
- By 2036, towns and cities will be home to 40% of the population, with urban areas contributing almost 70 % to GDP.
- South India is one of the most urbanized regions of the country with Tamil Nadu and Kerala reaching 50% urbanization.

Concerns in rapid urbanization in India?

- **Groundwater depletion** – Due to rapid urbanization and industrial expansion ground water is depleted at a faster rate than its recharge capacity.
- **Climate change** – Rapid urbanization intensifies pollution and contributes to urban flooding. Cities in the NCR region rank among the most polluted.
- **Urban planning issues** – Outdated spatial plans fail to address population growth has led to overcrowding.
 - 40% of urban residents in India are living in slums.
- **Urban heat islands** – Urbanization replaces natural land cover with dense built environments like buildings and pavement that absorb and retain heat, creating a heat island effect within the city limits.
- **De-industrialization** – Leads to declining share of employment in manufacturing which deprives the jobs for growing population in cities. It has led to job losses in cities like Ahmedabad, Delhi, Surat, and Mumbai.

Impacts of rapid urbanization

- **Growing inequality** – Wealthy developments contrast sharply with slum conditions.
- **Socio-economic segregation** – As city development increasingly caters to the wealthy while ignoring the needs of the broader population.
- **Poverty growth** – Many people remain below the poverty line due to the prevalence of low-paying, high living costs, and insufficient social support.
- **Water scarcity** – Over use and consumption in urban areas leads to acute water crisis in cities.
- **Lack of infrastructural development** – Cities here often suffer from housing shortages, poor access to clean water and sanitation.

- **Poor living conditions** - Without adequate infrastructure in urban areas leading to poor living conditions.

Way forward

- Increase investments in eco-friendly housing, improved public transit, and infrastructure to withstand climate events.
- Enhanced community engagement and urban governance.
- Promote sustainable building materials, water conservation, and emergency preparedness to withstand climate disruptions.
- Smart city solutions can improve the quality of life by using Artificial intelligence, the Internet of Things (IoT), and data analytics to manage resources efficiently.
- Focus on upskilling the urban workforce, especially in the informal sector.

8. Key facts of Cyclone Fengal

- **Cyclone Fengal**, a tropical cyclone, **made landfall over Puducherry**. Landfall is the event of a tropical cyclone coming onto land after being over water.
- As per the India Meteorological Department (IMD), a tropical cyclone is said to have made landfall when the centre of the storm - or its eye - moves over the coast.
- Landfalls can last for a few hours, with their exact duration depending on the speed of the winds and the size of the storm system.
- A landfall is different from the direct hit of a tropical cyclone. A '**direct hit**' refers to a situation where the core of high winds (or eyewall) comes ashore but the centre of the storm may remain offshore.

Cyclones

- The word Cyclone is derived from the **Greek word Cyclos** meaning the **coils of a snake**. It was coined by **Henry Peddington** because the tropical storms in the Bay of Bengal and the Arabian Sea appear like coiled serpents of the sea.
- Cyclones are **powerful, rotating storms** that form over warm ocean waters, characterized by low pressure at the center and high winds.
- **Worldwide terminology:** Cyclones are given many names in different regions of the world: They are known as **typhoons** in the China Sea and Pacific Ocean; **hurricanes** in the West Indian islands in the Caribbean Sea and Atlantic Ocean; **tornados** in the Guinea lands of West Africa and southern USA.; **willy-willies** in north-western Australia and **tropical cyclones** in the Indian Ocean.

How a Cyclone is formed?

- **Conditions:** Cyclones typically form over **warm ocean waters**, the warmth provides the necessary **heat and moisture** to fuel the cyclone. Warm water causes the ocean to **evaporate**, creating warm, moist air. This moist air rises from the ocean surface, leading to a **decrease in air pressure at the surface**.
- **Formation of a Low-Pressure System:** When the air rises up and away from the ocean surface, it creates an **area of lower air pressure below**.
- It causes the air from surrounding areas with higher pressure to move towards the low-pressure area which further leads to **warming up of the air and causes it to rise above**.
- **Cyclonic Circulation:** The rotation of the Earth (Coriolis effect) causes the rising air to start spinning around the low-pressure center. This spinning motion leads to the development of cyclonic circulation.
- **As the wind system rotates with increasing speed, an eye gets formed in the middle.** The centre of a cyclone is very calm and clear with very low air pressure. The difference of temperature between the warm, rising and the cooler environment causes the air to rise and become buoyant.
- **Dissipation:** A cyclone will eventually weaken and dissipate when it moves over cooler waters, encounters dry air, or interacts with land, which disrupts the system's supply of warm, moist air.

Nomenclature

- The names are maintained and updated by an **international committee of the World Meteorological Organization**.
- Cyclones in the North Indian Ocean region are named by the **regional specialized meteorological centers (RSMCs)** in India, Bangladesh, Myanmar, Oman, Pakistan, and Sri Lanka. Each country contributes names to a list used on a **rotating basis**. The primary reason for naming cyclones is to **make communication easier and more efficient**.

9. Theory of Mutualism and Anarchism

- The term “mutualism” was coined by **French philosopher Pierre-Joseph Proudhon** in the mid-19th century as part of his **broader critique of capitalism and authoritarianism**.

Mutualism

- **Cooperative Ownership:** It is an economic and social theory that emphasises **voluntary cooperation, reciprocity, and the fair exchange of goods and services**. It advocates for a society where individuals and communities engage in **cooperative ownership**, decentralising and collectively managing productive resources like land or tools for the benefit of all.

- **Free From Authority:** Such systems would be **free from central authority and capitalist exploitation.**
- **Mutualism and Property:** It did not call for the complete elimination of ownership. It emphasises a form of ownership based on usage rather than accumulation and profit.
- Ownership of tools or land is acceptable, provided it **does not lead to exploitation of others.**

Mutualism and Anarchism

- **Anarchism:** Individual anarchists emphasise **personal autonomy and freedom**, focusing on the liberation of the individual from state control. **Social anarchists** advocate for the **collective management of resources** and the organisation of society to promote equality and fairness.
- **A mutualist society** could be organised without a state, based on cooperative principles where people freely enter into contracts and mutual exchanges, thus **blending both individual freedom and collective responsibility.**

Critiques of the Mutualism

- **Weak Theory to Challenge Capitalism:** Its reliance on small-scale property ownership may not sufficiently challenge the capitalist system's broader structural inequalities. It fails to address the concentration of wealth and power that is intrinsic to modern capitalist economies.
- **Too Idealistic:** Critics question the feasibility of creating an egalitarian society based on voluntary cooperation, suggesting that it may be too idealistic or difficult to implement on a large scale.
- **Overlooking the Class Struggle:** The theory overlooks the realities of class struggle, where small producers are squeezed out by larger corporations.

Conclusion

- Despite these criticisms, mutualism remains a radical theory that offers an alternative to both capitalist exploitation and authoritarianism.
- These ideas aim to foster economic and social environments based on mutual aid and cooperation, rather than competition and exploitation.
- Mutualism seeks to build a society where individuals are free to pursue their own interests while maintaining a sense of community and mutual respect.

10. Nagaland's Hornbill Festival

- This year's edition of the Hornbill Festival has sparked a significant public debate regarding the relaxation of Nagaland's liquor prohibition law, a subject that has been contentious for over three decades.

Hornbill Festival

- The Hornbill Festival is a celebration **held every year from 1 - 10 December**, in **Kohima**, Nagaland.
- The festival was **first held** in the year **2000**.
- It is **named after Indian hornbill** (*Buceros bicornis*), the large and colourful forest bird which is displayed in the folklore of most of the state's tribes.
- Festival highlights include the **traditional Naga Morungs exhibition** and the sale of arts and crafts, food stalls, herbal medicine stalls, flower shows and sales, cultural medley - songs and dances, fashion shows etc.
- It is a platform for showcasing the major cultural festivals of **14 recognised Naga tribes**, each with its unique traditions and practices.
- **About Great Indian Hornbill: IUCN Status: Vulnerable** (upgraded from Near Threatened in 2018), **CITES: Appendix I** Known as **great pied hornbill**, it is one of the **largest hornbill species**. Can live up to **50 years** in captivity.

Nagaland Liquor Total Prohibition (NLTP) Act 1989

- The **NLTP Act** is a law enacted by the Government of Nagaland that **prohibits the production, sale, and consumption of alcohol** in the state.
- The Act is one of the **most stringent liquor prohibition laws in India**, and its core features are as follows:
- **Key Features of NLTP Act 1989: Complete Ban on Alcohol:** The NLTP Act bans the production, sale, and consumption of all forms of alcoholic beverages, including beer, wine, and spirits. This includes both local (like rice beer) and commercial alcohol. **Exceptions:** There are some exceptions under the law, such as alcohol being allowed for medical or scientific purposes and in certain regulated settings, like special licenses for non-local tourists during specific events (e.g., the Hornbill Festival). **Support from Religious Groups:** The Act has received strong support from Christian church bodies, which constitute a majority in the state, as they view alcohol consumption as morally unacceptable and harmful to community life.

Role of Alcohol in the Hornbill Festival:

- The **Hornbill Festival** is often seen as an exception to the state's liquor prohibition. **Thutse** (local rice beer) is traditionally consumed during the festival, and according to **academic Theyiesinuo Keditso**, the Hornbill

Festival is the only time in the year when the state permits **the open sale and consumption** of alcohol, including **Thutse**.

GS 2 : Polity, Governance, International Relations

1. Strengthening election commission of India

- Recently, calls have been made to strengthen the ECI's role and independence in order to increase voter trust.

Constitutional provisions related to the election commission

- **Constitutional body** – The Election Commission of India (ECI) is established on **January 25, 1950** to ensure free and fair elections.
- **All-India jurisdiction** – The ECI is common to both the Central and State governments.
- **Powers and functions** – Superintendence, direction and control of elections to: Parliament State Legislatures President and Vice-President
- **Composition of the election commission of India** – Chief Election Commissioner (CEC) is the head of the Election Commission and is the senior-most official.
- The commission may have up to two other Election Commissioners and this provision was added in 1989.
- Together with the CEC, the ECI they form a multi-member body.
- The CEC and Election Commissioners have equal powers and responsibilities.
- **Procedure for appointment** – The President makes the appointments based on the recommendations of the Prime Minister, leader of the opposition in Lok Sabha and a member of the union council of ministers to be nominated by the prime Minister.
- **Tenure and conditions** – Six years or until reaching the age of 65, whichever is earlier.

Issues in India's election system

- **Declining Voter Turnout** – Lack of awareness, logistical hurdles, and political disillusionment contribute to declining voter turnout.
- **Electoral Violence** – Violence and threats during elections disrupt the voting process, especially in rural and conflict-affected regions.
- **Exploitation of Media for Misinformation** – The manipulation of media, including social platforms, skews public opinion and divides the electorate.
- **Deep fake videos** were used to influence the voter decisions.

- **Gender Disparity in Political Representation** – The political system remains biased against women, resulting in their significant underrepresentation in legislative bodies.
- As of 2024, women represent just **13.6% of the Lok Sabha**, reflecting the gender disparity in political participation and leadership.
- **Use of black money** – Unregulated funding channels increase the influence of black money in elections.
- Lack of transparency in political donations undermines accountability.

What are the key reforms needed?

- **Improving election funding transparency** – Introduce state funding for political parties with independent audits.
- Establish a **National Election Fund** for all donations to ensure equitable distribution.
- **Impartial appointment procedures** – To ensure independence of Election Commissioners for free and fair elections.
- **Addressing criminalization** – Ban candidates with serious criminal charges from contesting elections.
- Enhance voter education and transparency in candidate disclosures.

Way forward

- Develop comprehensive laws to address funding, criminalization, and defection issues.
- Encourage voter participation and education on clean politics.
- Enhance coordination among the executive, legislature, judiciary, and ECI to uphold democratic values.

2. Public awareness and community engagement play in combating NCDs

- The recent cardiac arrest and subsequent death of a Bengaluru Metropolitan Transport Corporation (BMTC) bus driver while on duty has sparked conversations about worsening health outcomes in urban areas.

Primary risk factors contributing to the rising NCD burden in urban areas

- **High-Stress Work Environments:** Many urban workers, including bus drivers, face high levels of stress due to long hours, erratic schedules, and demanding job conditions.
- The BMTC study indicated that over **40%** of its employees aged 45-60 are at risk for cardiovascular diseases, exacerbated by factors like continuous driving and poor eating habits.

- **Poor Nutrition and Lifestyle:** Workers often lack access to healthy food options and exercise opportunities, leading to increased rates of obesity, hypertension, and diabetes.
- The BMTC workforce has shown alarming rates of these conditions, which are often linked to lifestyle choices made under stressful work conditions.
- **Lack of Health Insurance and Support:** Many informal workers do not have health insurance or access to regular health screenings. This lack of support can lead to delayed diagnosis and treatment of NCDs, increasing the risk of severe health events like heart attacks.
- **Socioeconomic Marginalization:** A significant portion of the urban population lives in slums or informal settlements, where access to healthcare is limited. This socioeconomic status contributes to poor health outcomes and a higher prevalence of NCDs.

How can urban health systems be strengthened to effectively manage NCDs?

- **Improving Access to Primary Healthcare:** Urban health systems must focus on making primary healthcare services more accessible to marginalized communities. This includes expanding facilities in underserved areas and ensuring that services are affordable and culturally appropriate.
- **Implementing Regular Health Screenings:** Regular health evaluations for high-risk populations, such as bus drivers and other transport workers, should be mandated. These screenings can help identify risk factors early on and facilitate timely interventions.
- **Integrating Health Services with Employment Policies:** Employers should collaborate with health departments to create programs that promote employee wellness, including stress management workshops and nutrition education tailored for their workforce.
- **Community-Based Health Promotion:** Local organizations can play a crucial role in educating communities about NCD risks and promoting healthy lifestyles through workshops and outreach programs that engage residents directly.

What role do public awareness and community engagement play in combating NCDs?

- **Raising Awareness About NCD Risks:** Public campaigns can educate individuals about the importance of regular health screenings and lifestyle changes that reduce the risk of NCDs. Awareness initiatives can empower communities to take charge of their health.
- **Encouraging Community Participation:** Engaging community members in health promotion activities fosters a sense of ownership over their health.

outcomes. Community-led initiatives can effectively address local health issues by tailoring solutions to specific needs.

- **Utilizing Technology for Monitoring Health:** Digital tools can facilitate real-time monitoring of health metrics for at-risk populations, enabling proactive management of conditions like hypertension and diabetes.
- **Creating Support Networks:** Building networks among workers can provide emotional support and share resources for managing health issues collectively, which is particularly beneficial for those facing similar challenges in high-stress jobs.

Way forward:

- **Strengthen Urban Primary Healthcare:** Expand access to affordable and culturally relevant primary health services, implement regular screenings for high-risk groups, and integrate wellness programs with employment policies for vulnerable workers.
- **Promote Community-Led Health Initiatives:** Engage local organizations and residents to raise awareness about NCD risks, encourage healthy lifestyles, and utilize digital tools for real-time health monitoring and proactive care.

3. Key facts of PM-WANI

- The **Prime Minister's Wi-Fi Access Network Interface (PM-WANI)** framework aims to enhance internet accessibility across India by setting up public Wi-Fi hotspots.
- With 246,993 hotspots installed as of November 2024, the initiative is a key part of **India's Digital India mission**, aiming to provide affordable and widespread internet access.

PM-WANI

- **About:** Launched in 2020 by the **Department of Telecom (DoT)**, the PM-WANI framework aims to expand public Wi-Fi hotspots across India, particularly in rural areas. It allows local businesses, like shopkeepers, to set up Wi-Fi hotspots, providing affordable internet access and supporting the goals of the **National Digital Communications Policy, 2018**.
- **Importance:** By enabling **local businesses** to become Wi-Fi providers without requiring licenses or fees, the scheme promotes ease of doing business and ensures rapid deployment. PM-WANI will significantly **improve internet access fostering digital inclusion and innovation**.
- **PM-WANI Ecosystem: Public Data Office (PDO):** Establishes, maintains, and operates PM-WANI compliant Wi-Fi hotspots. PDOs provide last-mile connectivity by procuring internet bandwidth from telecom or internet

service providers and delivers broadband services to subscribers. **Public Data Office Aggregator (PDOA):** Provides aggregation services such as authorization and accounting to PDOs. PDOA facilitates PDOs in delivering services to end consumers.

- **App Provider:** Develops an application to register users and display PM-WANI compliant Wi-Fi hotspots nearby. Authenticates potential broadband users for accessing the internet service.
- **Central Registry:** It maintains the details of App Providers, PDOAs, and PDOs. It is currently managed by the **Centre for Development of Telematics (C-DoT)**.
- C-DoT was established in 1984. It is an autonomous Telecom R&D (Research and Development) centre of **DoT (Department of Telecom), Ministry of Communications**. It is a registered society under the **Societies Registration Act, 1860**.

4. Risk factors of Non Communicable Diseases

- A recent study published stated that the prevalence and morbidity of NCD in India has been increasing in the past decade.

Non-communicable disease (NCD)

- Non-communicable disease (NCD) are chronic diseases that are not caused by infectious agents and doesn't spread from person to person.
- These diseases are long-lasting, progress slowly and often require prolonged treatment.
- **Global concern** – They are a major cause of death and disability worldwide, accounting for approximately **74% of all deaths globally**.
- It results in 86% premature deaths (died before reaching 70 years of age) in low- and middle-income countries.
- Low middle income countries contributes 77% of all NCD cases.

Risk factors for NCDS

- A risk factor is a condition that increases the possibility of developing a non-communicable disease. The more risk factors one has, the greater the chance of getting a particular disease.
- **Lifestyle choices** – Poor diet, lack of physical activity and tobacco or alcohol use.
- The Lancet Global Health found that nearly 50% Indian adults insufficiently physically active.
- **Genetic factors** – Family history or genetic predisposition to certain diseases.

- **Environmental factors** – Exposure to pollution, unsafe drinking water and workplace hazards.
- **Ageing** – Increased risk due to natural wear and tear of body systems over time.
- **Environmental factors** – Air pollution is the major contributor to NCDs that accounts for 5.7 million deaths globally.

Effects of NCDs

- **Increased health burden** – Urban communities face a triple health burden during health crises due to hazardous work environments, limited healthcare access, and financial vulnerability.
- **Financial instability** – Catastrophic out-of-pocket on healthcare expenditures jeopardize family livelihoods and financial stability.
- Marginalized communities often lack health insurance, compounding financial stress.
- **Impact on Vulnerable Populations** – Informal workers, including sanitation workers, gig workers and migrants are disproportionately affected due to lack of hygiene, nutrition and contract protections.
- Social and economic marginalization of these vulnerable people exacerbates the impact on health outcomes.

Measures to address NCD

- **Strengthen primary health care** – Improve access to publicly run primary health care, especially for urban marginalized communities.
- **Leverage technology** – Implement real-time health monitoring using digital tools for conditions like hypertension and diabetes.
- Use screening for population-level evidence and individual awareness.
- **Address Social Determinants of Health** – Tackle issues related to workplace safety, housing, family connections, and community health infrastructure.
- Recognize that health outcomes are deeply tied to social identities, employment and migration status.
- **Policy-level interventions** – Scale up state-level action plans for better access to primary health care.
- Emphasize preventive measures to avoid catastrophic out-of-pocket (OOP) healthcare expenses.

5. Donald Trump Threat to BRICS Over Currency

- Setting the stage to counter any challenge to the dollar's domination in global trade, US President-elect Donald Trump has threatened the BRICS grouping

with “100 per cent tariffs” if they moved to create a new currency or back any other option as the world’s reserve.

- BRICS stands for Brazil, Russia, India, China and South Africa, the original five members. This year, the group admitted four new members – Egypt, Ethiopia, Iran and UAE – and now represents almost half the world’s population and almost one quarter of its economy.

Key takeaways

- USD accounts for over 90 per cent of global transactions.
- Trump’s latest remarks come amid divergent views on the issue at the BRICS summit in October. Russian President Vladimir Putin had warned that the “dollar is being used as a weapon”. But Prime Minister Modi had cautioned that the grouping should not acquire the image of one that is trying to replace global institutions.
- Several countries have been looking at other “mechanisms” after the US “weaponised the global financial infrastructure” by throwing Iran and Russia out of the Society for Worldwide Interbank Financial Telecommunication (SWIFT), which is the key to international transactions.
- IMF’s Currency Composition of Official Foreign Exchange Reserves (COFER) has pointed to a gradual decline in the dollar’s share of central bank and government foreign reserves. But the reduced role of the US dollar over the past two decades has not been matched by corresponding increases in the shares of the other “big four” currencies, the euro, yen and pound.
- In India, an effort to reduce reliance on the US dollar and internationalise the rupee saw the RBI allowing invoicing and payments for global trade in rupees in 2022 after sanctions were imposed on Russia amid the Ukraine war.
- According to the BIS Triennial Central Bank Survey 2022, foreign exchange market turnover – daily averages – shows that the US dollar accounted for 88 per cent of the global forex turnover while the rupee accounted for 1.6 per cent. The survey stated that if rupee turnover rises to equal the share of non-US, non-Euro currencies in global forex turnover of 4 per cent, it will be regarded as an international currency.

6. Controversies around pardoning power

- U.S. President Joe Biden has issued an unconditional pardon to his son, Hunter Biden, who was facing sentencing for federal tax and gun-related convictions.

History of the pardoning power in the U.S.

- **Constitutional Basis:** The U.S. Constitution grants the President the power to grant pardons for federal offenses under Article II, Section 2, which states that the President can “grant Reprieves and Pardons for Offenses against the United States, except in Cases of Impeachment”.
- **Historical Use:** This power has been exercised by every president since George Washington. Notable historical examples include George Washington’s pardon of participants in the Whiskey Rebellion and Bill Clinton’s pardon of his half-brother Roger on his last day in office.
- **Controversial Pardons:** The pardoning power has often been mired in controversy, with instances such as Donald Trump pardoning his son-in-law’s father and Joe Biden now pardoning his son Hunter. These actions have raised questions about nepotism and political motivations behind such decisions.

Current controversy

- **Hunter Biden’s Pardon:** President Joe Biden granted an unconditional pardon to his son Hunter for federal tax and gun convictions. This decision has sparked significant backlash from both Republicans and some Democrats, who view it as an abuse of power and a contradiction to Biden’s earlier statements that he would not intervene in his son’s legal matters.
- **Political Motivations:** Biden defended his decision by claiming Hunter was unfairly prosecuted due to political motives. Critics argue that this reflects a broader pattern of using presidential pardons for personal or political gain, undermining public trust in the justice system

Way Forward

- **Need for Reform:** Critics argue that modern uses of pardoning powers often serve political interests rather than justice. There is a call for reform to ensure that these powers are exercised transparently and judiciously.
- **Establishing Review Mechanisms:** Learning from practices in other democracies, such as the UK’s Criminal Cases Review Commission, which investigates alleged miscarriages of justice, could help establish a more systematic approach to reviewing pardons and clemency applications
- **Maintaining Public Trust:** It is crucial for any future exercise of pardoning power to be conducted without perceptions of nepotism or bias.

7. Pro-Active Governance and Timely Implementation (PRAGATI) platform

- The government's Pro-Active Governance and Timely Implementation (PRAGATI) platform has transformed the delivery of the country's infrastructure projects, a report by Oxford University's Saïd Business School and the Gates Foundation has said recently.

PRAGATI platform:

- It is a **multi-purpose** and **multi-modal platform** that is aimed at addressing common man's grievances and simultaneously monitoring and **reviewing important programmes** and projects of the Government of India as well as projects flagged by **State Governments**.
- It is also a robust system for bringing e-transparency and e-accountability with real-time presence and exchange among the key stakeholders.
- The platform was launched on March 25, 2015.
- The system has been **designed in-house** by the **PMOteam** with the help of the **National Informatics Center (NIC)**. The PRAGATI platform uniquely bundles three latest technologies: **Digital data management, video conferencing, and geospatial technology**.
- It also offers a unique combination in the direction of **cooperative federalism** since it **brings on one stage** the **Secretaries of Government of India and the Chief Secretaries of the States**.
- With this, the **Prime Minister** is able to discuss the issues with the concerned **Central and State officials with full information and the latest visuals of the ground-level situation**.

Key Features:

- It is a **three-tier system** (PMO, Union Government Secretaries, and Chief Secretaries of the States). **The Prime Minister will hold a monthly programme** where he will interact with the Government of India Secretaries and Chief Secretaries through videoconferencing enabled by data and geoinformatics visuals. The programme will be held once in every month on the **fourth Wednesday** at 3.30 PM, to be known as **PRAGATI Day**.
- **Issues to be flagged before the PM** are **picked up from the available data base regarding public grievances, ongoing programmes and pending projects**. The system will ride on, strengthen, and **re-engineer the databases**

of the CPGRAMS for grievances, Project Monitoring Group (PMG), and the Ministry of Statistics and Programme Implementation. PRAGATI provides an interface and platform for all these three aspects.

- It will **take into consideration various correspondences to the PM's office** by the common people or from high dignitaries of states and/or developers of public projects. The **issues flagged are uploaded seven days prior to the PRAGATI day** (i.e., on the third Wednesday of every month).
- These issues can be viewed by the Union Government Secretaries and Chief Secretaries after entering into the application. Union Government Secretaries and Chief Secretaries **have to put their comments and updates** about the flagged issues within three days (i.e. by next Monday).
- **One day - Tuesday** is available to the **PMO team to review the data** entered by the Union Government Secretaries and Chief Secretaries. The design is such that when PM reviews the issue, he should have on his screen the issue as well as the latest updates and visuals regarding the same.

8. Key takeaways of Sexual Harassment of Women at Work place Act, 2013

- The Supreme Court issued detailed directions to ensure effective implementation of the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH Act), for implementation across the states and union territories.
- The apex court in a May 2023 judgment, had expressed its discontent that even a decade after the enactment of POSH Act, serious lapses continue to exist in its effective enforcement.

Key takeaways

- Enacted in 2013 to provide protection against sexual harassment of women at the workplace and ensure their right to work with dignity.
- Definition of Sexual Harassment - As per the Act, sexual harassment includes: Physical contact and advances. A demand or request for sexual favors. Making sexually colored remarks. Showing pornography. Any other unwelcome physical, verbal, or non-verbal conduct of a sexual nature.
- Covers women working in both the organized and unorganized sectors. Includes regular, temporary, ad hoc, or daily wage employees, trainees, apprentices, and women working through a contract or consultant.
- Extends to private and public offices, government institutions, NGOs, and even the premises of employers such as vehicles or any place visited by the employee during work.

Internal Complaints Committee (ICC)

- Every employer is required to constitute an Internal Complaints Committee (ICC) at each office or branch with 10 or more employees. The ICC is responsible for receiving and addressing complaints of sexual harassment.
- ICC Composition: Presiding Officer: A senior woman employee. At least two members committed to women's issues or having legal knowledge. One external member from an NGO or legal background.
- ICC's Role: Inquire into complaints. Recommend actions such as warnings, salary deductions, termination, or other disciplinary measures.

Punishment and Compensation:

- Disciplinary actions include written apologies, warnings, reprimands, suspension, or termination of employment.
- Compensation can be awarded to the aggrieved woman, considering the severity of the harassment and its impact.
- Duties of Employers: Employers are required to provide a safe working environment, display notices about the penal consequences of sexual harassment, organize workshops and awareness programs, and assist in securing the attendance of the respondent and witnesses during the inquiry.
- Penalties: The Act prescribes penalties for non-compliance, including fines and cancellation of business licenses. It also provides for punishment for false or malicious complaints.

9. Strategic objectives of India in West Africa

- Despite China's increasing involvement in financing and infrastructure development, India continues to hold a significant position as one of Nigeria's key partners in West Africa.

Strategic objectives of India in West Africa

- **Strengthening Bilateral Relations:** India aims to enhance its strategic partnership with Nigeria, which is pivotal as Nigeria is both the largest economy and democracy in Africa. This partnership is expected to extend beyond Nigeria, influencing broader regional dynamics in West Africa.
- **Focus on Security Cooperation:** Given the challenges of terrorism, piracy, and drug trafficking in Nigeria, India seeks to bolster security cooperation. This includes defence collaboration and joint efforts in counterterrorism operations against groups like Boko Haram.
- **Promotion of Global South Aspirations:** Both India and Nigeria share common goals as leaders of the Global South, aiming to amplify their voices in international forums like the UN Security Council.

How does India plan to enhance its economic ties with West African countries?

- **Diversifying Trade Relations:** India plans to revitalize trade with Nigeria, which has seen a decline recently. Efforts include negotiating trade agreements such as the Economic Cooperation Agreement (ECA) and the Bilateral Investment Treaty (BIT) to facilitate investment and trade.
- **Sectoral Collaboration:** The focus areas for economic collaboration include defence, energy, technology, health, and education. India's PM discussions with the President of Nigeria emphasized leveraging India's expertise in these sectors to foster mutual growth.
- **Infrastructure Development:** India aims to support infrastructure development through concessional loans and technical assistance, building on existing projects that have benefited from Indian investment.
- **Cultural and People-to-People Exchanges:** Enhancing cultural ties and promoting exchanges between citizens are also part of India's strategy to strengthen bilateral relations, fostering goodwill and mutual understanding.

Challenges does India face in its engagement with West Africa

- **Geopolitical Competition:** India's engagement is challenged by China's significant presence in Nigeria, where Chinese companies dominate various sectors including infrastructure and telecommunications. This competition complicates India's efforts to establish itself as a key partner.
- **Economic Fluctuations:** The decline in trade between India and Nigeria from \$14.95 billion in 2021-22 to \$7.89 billion in 2023-24 highlights vulnerabilities due to shifting global oil markets and increasing imports from other countries like Russia.
- **Political Instability:** The political landscape in Nigeria can be unpredictable, posing risks for long-term investments and cooperation initiatives that require stability for successful implementation.

Way forward:

- **Deepen Strategic Collaboration:** Strengthen defence and security partnerships, diversify trade, and enhance collaboration in sectors like energy, technology, and health to counter China's growing influence and foster mutual growth. **Focus on Regional Capacity Building:** Expand developmental assistance with tailored initiatives addressing local needs, while supporting Nigeria's stability through diplomatic engagement and joint Global South aspirations in international forums.

10. Key facts about SheSTEM 2024

- Atal Innovation Mission (AIM), under the NITI Aayog and the Office of Science & Innovation, at the Embassy of Sweden, are pleased to announce the successful conclusion of SheSTEM 2024.

SheSTEM 2024:

- SheSTEM is an **annual event by Atal Innovation Mission (AIM), and the Office of Science and Innovation, at the Embassy of Sweden.**
- It **celebrates the contributions of women in STEM** and serves as a **catalyst to inspire the next generation of innovators** by encouraging young minds to **explore careers in science, technology, engineering, and mathematics (STEM).**
- The **SheSTEM 2024 challenge invited students from grades 6–12 across India to submit innovative ideas focused on Battery Technology and Energy Storage (BEST) systems.**
- **Part of the India-Nordic BEST project,** the challenge aims to foster sustainability by advancing energy solutions.
- Participants were tasked with presenting their prototypes or concepts for energy storage and sustainability in a two-minute video format.
- The competition received an exceptional response, with over 1000 submissions demonstrating the creativity, problem-solving skills, and forward-thinking mindset of India's youth.

Key Facts about Atal Innovation Mission (AIM):

- AIM is a flagship initiative set up by the NITI Aayog in 2016 with an objective to create and encourage an environment of **innovation and entrepreneurship across schools, educational organisations, research institutes, and industries,** including MSMEs.
- AIM has two functions: Promote entrepreneurship by encouraging innovators to become entrepreneurs through financial support as well as mentorship. Promote innovation by creating a platform where ideas are generated through like-minded individuals.
- AIM has created **four programs** to support these functions:
 - **Atal Tinkering Labs**
 - **Atal Incubation Centres**
 - **Atal New India Challenges and Atal Grand Challenges**
- **Mentor India** Apart from these programs, AIM also seeks and **collaborates with academia, industries, NGOs,** and individuals to enable an atmosphere of innovation. **All the initiatives of AIM are currently monitored and managed systematically using real-time MIS systems and dynamic dashboards.**

11. Women Personnel in the Central Armed Police Forces (CAPFs)

- Recently, the Minister of State for Home Affairs informed Lok Sabha that 4,138 women personnel are likely to be recruited in the CAPFs and Assam Rifles in 2025. The journey of women in CAPFs began in the late 20th century, with the CRPF being the first to induct women in 1986. Initially, their roles were limited to support and administrative functions.
- However, with changing societal norms and the recognition of women's capabilities, their participation has expanded to combat and operational roles.

Current Status/Representation

- Women currently make up 4.4% of the 9.48 lakh-strong CAPFs and Assam Rifles. The number of women personnel in CAPFs had almost tripled in the 10 years from 2014 to 2024, while the percentage remained low. The CISF has the highest representation of women at 7.02%, followed by SSB (4.43%), BSF (4.41%), ITBP (4.05%), Assam Rifles (4.01%), and CRPF (3.38%). They are involved in border patrolling, anti-Naxal operations, and disaster response, among other duties.

Reasons for Low Representation

- **Cultural and Social Barriers:** Traditional gender roles and societal expectations often discourage women from pursuing careers in armed forces.
- **Recruitment and Retention Issues:** Despite policy measures, the actual recruitment process has faced challenges, including fewer women applicants and high attrition rates.
- **Work Environment:** The demanding nature of the job, including frequent transfers and postings in remote areas, can be less appealing to women, especially those with family responsibilities.
- **Infrastructure and Facilities:** Inadequate facilities such as separate accommodations and sanitation can deter women from joining and staying in the forces.

Efforts to Increase Representation

- **Reservation Policies:** In 2016, the government decided to reserve one-third of all constable-level positions in the CRPF and CISF for women, and 14-15% in the border guarding forces like BSF, SSB, and ITBP.
- **Recruitment Efforts:** The number of women in CAPFs has significantly increased from 15,499 in 2014 to 42,190 in 2024. In 2025, an additional 4,138 women are expected to be recruited, with the BSF getting the largest share.

- A **parliamentary committee** has recommended steps to encourage women to join CAPFs, including providing **'soft postings'** and not subjecting them to extremely strenuous working conditions. The committee suggested exploring reservations for transgender individuals in CAPFs.

Conclusion

- Continuous efforts, including better recruitment strategies, improved working conditions, and societal change, are essential to enhance women's representation in these critical forces.

12. Key Areas of Cooperation between India-Bhutan

- The recent visit of **King Jigme Khesar Namgyel Wangchuck of Bhutan** to India marked a significant step in reinforcing the **close bilateral ties between the two nations**.

Key Outcomes of the Visit

- **Hydropower Collaboration:** Both sides emphasized the completion of the timely **Punatsangchu Hydropower Project (Phase I & II)**.
- Discussions were held on **new reservoir hydropower projects** showcasing the shared commitment to advancing energy cooperation.
- **Gelephu Mindfulness City project:** India reiterated its support to transform **Gelephu** (a town in **southern Bhutan near the Indian border**) into a hub of sustainable development and urban planning. **Gelephu's strategic location near Assam** makes it a critical point for regional connectivity and trade.
- **Cross-Border Connectivity:** Both sides discussed advancing connectivity initiatives, including: **Rail Projects:** Enhancing cross-border movement of goods and people. **Digital Networks:** Strengthening digital infrastructure for greater integration. The inauguration of the **Integrated Check Post (ICP) at Darranga, Assam**, marks a significant advancement in enhancing connectivity.

Significance of Hydropower in India-Bhutan Relations

- **Economic Impact on Bhutan:** Hydropower projects account for a major share of Bhutan's revenue through electricity exports to India.
- **Mutual Benefits:** These projects not only enhance Bhutan's economy but also bolster India's energy security and renewable energy goals.
- **Future Expansion:** Both nations committed to exploring new hydropower opportunities, ensuring the sustainability of this mutually beneficial partnership.

Challenges and Opportunities For India

- **Challenges: Delays in Projects:** Prolonged delays in projects like Punatsangchhu-I remain a concern. **Geopolitical Pressure:** Increased Chinese investments in the region pose challenges to India's influence.
- **Opportunities: Diversification:** Exploring non-traditional sectors like urban planning and digital infrastructure can broaden bilateral ties. **Private Sector Engagement:** Involvement of companies like the Adani Group can bring new investments and technologies to Bhutan while helping India counter the growing influence of external powers in the region.

13. Challenges Faced by India in Eliminating TB

- In a decisive step towards eliminating TB in India, the Ministry of Health and Family Welfare, is all set to launch the **100 Day TB elimination campaign**. The initiative, set to be implemented in 33 States and Union Territories, has been designed to **enhance TB case detection, reduce diagnostic delays, and improve treatment outcomes**.
- India's goal is to **eliminate tuberculosis (TB) by 2025**, five years ahead of the **global target of 2030**.
- **Global TB Cases:** TB remains the leading infectious killer, surpassing COVID-19, with 8.2 million new cases in 2023.
- **India's TB Burden:** India, with the highest TB burden globally, recorded 2.8 million cases in 2023.
 - India alone accounted for **26% of global cases and 29% of global TB deaths** (315,000 deaths).
 - India is followed by Indonesia (10%), China (6.8%), the Philippines (6.8%), and Pakistan (6.3%).
- **Multidrug-Resistant TB:** India represents 27% of the world's multi-drug-resistant TB cases, underscoring the need for specialized treatment approaches.
- Tuberculosis (TB) is an **infectious disease** that most often affects the lungs and is caused by the **bacteria Mycobacterium tuberculosis**. It spreads through the air when infected people **cough, sneeze or spit**. **Symptoms:** prolonged cough (sometimes with blood), chest pain, weakness, fatigue, weight loss, fever, night sweats.

Challenges Faced by India in Eliminating TB

- **Drug-resistant TB cases:** India has a significant burden of drug-resistant TB, including multidrug-resistant TB (MDR-TB). This type of TB is much harder to treat and requires more expensive, specialised drugs and a longer duration of treatment.

- **Diagnostics and Case Detection:** The accurate and timely diagnosis of TB remains a challenge. Some areas lack access to modern diagnostic tools, leading to reliance on older methods with limitations.
- **Poor primary health-care and infrastructure:** In many parts of India, especially in rural and remote areas, there is limited access to healthcare facilities. This can result in delayed diagnosis and treatment, allowing TB to spread within communities.
- **Stigma and Awareness:** Stigma associated with TB lead to delays in seeking healthcare, and lack of awareness about the disease may contribute to its persistence.
- **Private Sector Engagement:** A significant portion of healthcare services in India is provided by the private sector.

Steps Taken by Government of India to Eliminate TB

- **Revised National Tuberculosis Control Program (RNTCP):** The RNTCP, launched in 1997, was the flagship program to control TB in India. The program has been continuously revised and strengthened over the years.
- **National Tuberculosis Elimination Program (NTEP):** The Government of India has developed a National Strategic Plan (2017-25) for Ending TB in the country by 2025.
- **Pradhan Mantri TB Mukh Bharat Abhiyan (PMTBMBA):** Launched in 2022 for community support to TB patients with the objective to provide people with TB with additional nutritional, diagnostic and vocational support.
- **Universal Drug Susceptibility Testing (DST):** The government has scaled up efforts to provide universal access to drug susceptibility testing, helping to identify drug-resistant strains of TB early and tailor treatment accordingly. Earlier, the patients were started on first line treatment and were tested for drug resistance only if the therapy did not work.
- **Ni-kshay portal:** An online Ni-kshay portal has been set up to track the notified TB cases.

Suggestions

- Setting norms and standards on TB prevention and care and promoting and facilitating their implementation.
- Developing and promoting evidence-based policy options for TB prevention and care.
- Monitoring and reporting on the status of the TB epidemic and progress in financing and implementation of the response at global, regional and country levels.

14. Nationwide Campaign 'Prashasan Gaon Ki Ore'

- "Prashasan Gaon Ki Ore" a nationwide campaign is launched by the Government of India, from December 19-24, 2024, as part of the **4th Good Governance Week**.

Nationwide Campaign 'Prashasan Gaon Ki Ore'

- It is a **nationwide campaign** to address public grievances and improve service delivery across rural and urban areas. It aims to **strengthen governance at the grassroots level** and bring effective solutions to the common people. It will be conducted in all **districts, states, and union territories** of India, with a focus on delivering timely solutions and improving the quality of services provided to citizens.

Key objectives of the campaign include:

- **Redressing Public Grievances:** Ensuring that citizens' complaints related to government services are resolved swiftly.
- **Improving Service Delivery:** Enhancing the efficiency of government services at the local level.
- **Creating Awareness:** Spreading knowledge about good governance practices and encouraging citizens to be proactive in using available services.

Key Observations from the Good Governance Index (GGI) 2022

- The GGI, 2022 evaluates **58 indicators** across **10 governance sectors**, such as agriculture and allied sectors, human resource development, public health, and law and order, among others. The key observations are as follows:
 1. **Top Performers:** Kerala, Tamil Nadu, and Maharashtra ranked highest for good governance, excelling in public health, human resources, and economic governance.
 2. **Service Delivery:** States like Tamil Nadu and Kerala were praised for transparency, accountability, and citizen-focused policies, leading in service delivery.
 3. **Agriculture & Rural Development:** Uttar Pradesh and Bihar showed improvements in agriculture and rural development, aligning with the goals of **Prashasan Gaon Ki Ore**.
 4. **Health & Education:** Kerala and Tamil Nadu excelled in healthcare and education, with significant investments in infrastructure and public schemes.

5. **Sustainable Development:** States like Sikkim emphasized environmental governance and sustainable development practices.

15. Kerala's Fund Utilization for Disaster Relief under Scrutiny

- The Bhartiya Janata Party has alleged that the **Kerala government** has failed to effectively utilize the funds allocated by the Central government for disaster relief. This issue has drawn attention after the **Kerala High Court** criticized the State government for lapses in fund management and rehabilitation of landslide survivors in **Wayanad**.
- Kerala government of not utilizing the **substantial funds** allocated by the Centre under:
State Disaster Response Fund (SDRF)
National Disaster Response Fund (NDRF)
Regular relief packages.
- The Centre claims it has allocated over **₹500 crore** through SDRF for disaster relief in the state.

National Disaster Response Fund (NDRF):

- Defined under **Section 46** of the **Disaster Management Act, 2005**.
- Provides **financial assistance for emergency response**, relief, and rehabilitation during disasters of severe nature.
- **Managed by the Central Government** and placed in the **Public Account of India** under "reserve funds not bearing interest."
- **Usage:** Funds are allocated for **immediate relief and emergency measures**. **Not used for disaster preparedness, reconstruction, or mitigation**. Activities like preparedness are financed through schemes like **NDMF, NCRMP, and NFMP**.
- **Eligibility:** Covers **natural calamities** (cyclones, floods, earthquakes, etc.) and **certain man-made disasters** (terrorist attacks, chemical, biological, or nuclear disasters). **States must submit a memorandum of damages**; funds are allocated based on **central assessment**.
- **Sources of Financing:** Financed by a **cess on specific items**, approved via the **Finance Bill**. Additional requirements are met through **budgetary allocations**.

State Disaster Response Fund (SDRF):

- Constituted under **Section 48** of the **Disaster Management Act, 2005**.
- Primary fund available with **state governments** for **disaster response and relief**.

- **Financing:** Funded in a 75:25 ratio by the Centre and States (90:10 for NE and hilly states). Allocations are based on the Finance Commission's recommendations.
- **Usage:** Covers natural disasters like floods, earthquakes, and droughts. Can be used for **immediate relief** and response activities. **10% of the annual allocation** is earmarked for local-level disaster preparedness.

16. Key Objectives of Railways (Amendment) Bill 2024 Introduced

- The **Railways (Amendment) Bill, 2024** was introduced by the Union Minister of Railways in the Lok Sabha, proposing significant reforms to **enhance the autonomy and efficiency of Indian Railways**.

Key Objectives of the Bill

- **Statutory Backing to Railway Board:** Amends the Railways Act, 1989, to provide legal sanction to the Railway Board, which has operated without statutory backing since its inception.
- **Decentralisation of Powers:** Grants greater autonomy to railway zones to manage budgets, infrastructure, and recruitment independently.
- **Establishment of an Independent Regulator:** Introduces an autonomous body to regulate tariffs, ensure safety, and facilitate private sector participation.
- **Simplification of Legal Framework:** Merges the Indian Railway Board Act, 1905, with the Railways Act, 1989.

Proposed Reforms and Structural Changes

- **Independent Regulator:** Addresses issues like tariff regulation, infrastructure access, and service standards. Recommendation initially made by the 2015 Committee on Restructuring Railways.
- **Autonomy to Railway Zones:** Decentralises operational and financial decision-making. Supported by the **Sreedharan Committee (2014)**.
- **Appointment and Composition of Railway Board:** Empowers the government to define the Board's structure, qualifications, and appointment processes for members and the Chairman.
- **Infrastructure Upgrades:** New Section 24A enables expedited superfast train operations and infrastructure upgrades. For instance, extending the Arunachal Express via the Siwan-Thawe-Kaptanganj-Gorakhpur route is expected to benefit Bihar, with an estimated cost of Rs. 300 crore for upgrades and Rs. 250 crore annually in recurring expenditures

Potential Benefits

- **Improved Governance:** Streamlining the legal framework and clarifying the Railway Board's role can lead to better governance and accountability.
- **Enhanced Efficiency:** Decentralization and autonomy for zones can result in faster project implementation, better resource utilization, and improved service delivery.

Concerns and Way Ahead

- **Privatization Fears:** The opposition's concern about potential privatization needs careful consideration. While private sector participation can bring in investment and expertise, safeguarding public interest and accessibility for all remains crucial.
- **Autonomy vs. Control:** Balancing increased autonomy for zones with effective oversight and accountability will be essential. The government's role in Board appointments needs to be transparent and ensure the Board's independence.
- **Passenger Welfare:** Addressing concerns about passenger concessions and ensuring affordable fares for vulnerable sections of society is important for maintaining the railways' social responsibility.

17. India-Australia CCEA Stocktake

- A stocktake visit for the **India-Australia Comprehensive Economic Cooperation Agreement (CECA)** recently concluded in New Delhi.

Key Takeaways from the Meet

- The discussions covered a wide range of critical aspects of the **CECA**, including: **Trade in goods and services**, **Mobility** and **agri-tech cooperation**, **Market access modalities** that align with **India's food security objectives**.
- Both sides emphasized their **shared commitment** to ensuring that the CECA produces **meaningful benefits** and delivers a **balanced outcome** for both nations.
- The discussions have opened up pathways for enhanced collaboration in areas such as **agricultural innovation**, **market access**, and **supply chain resilience**.

India-Australia CCEA Negotiations:

- **CECA** is a comprehensive trade agreement between **India** and **Australia**. **More comprehensive** than the earlier **India-Australia Economic Cooperation**

and Trade Agreement (ECTA) , which is a limited trade agreement in force since **December 2022**.

- **Negotiations for CECA** began in **May 2011**, suspended in **2016**, and re-launched in **2021** after concluding the ECTA. So far **10 rounds** of negotiations have taken place.

Key Features of CECA:

- Covers **goods, services, digital trade, government procurement, and Rules of Origin/Product-Specific Rules Schedule**. New areas: **competition policy, MSMEs, innovation, agri-tech, critical minerals, sports**.

18. Features of PM YASASVI Scheme

PM YASASVI

- PM Young Achievers Scholarship Award Scheme for Vibrant India (PM YASASVI) is a flagship initiative by the Government of India, aimed at providing scholarships to students.
- **Nodal ministry** - Ministry of Social Justice and Empowerment.
- **Vision** - *Sabka Sath, Sabka Vikas* means *together with all, development for all*.
- **Eligibility** - Total annual family income of up to Rs 2.50 lakhs.
- **Selection Process** - YASASVI Entrance Test (YET) 2023 conducted by the National Testing Agency (NTA).

Features the scheme

- **Financial Scholarships** - To reduce the financial burden on families and encourage students to continue their education without interruptions.
- **Top-Class Education scholarships** - For students who excel in their studies will get scholarship to attend top-tier educational institutions.
 - Top Class School Education
 - Top Class College Education
- **Hostels for OBC boys and girls** - Scheme includes provisions for the construction and maintenance of hostels for students. By ensuring access to safe and supportive living spaces, it seeks to create an optimal environment for students' academic success.

Scope of the scheme

- **Transformative initiative** - Towards realizing the vision of *Viksit Bharat 2047* to make India more knowledge based economy.

- **Effective implementation** – By consolidating several pre-existing schemes into a single comprehensive program the financial aid reaches those in need efficiently and effectively.
- **Increase beneficiaries** – Targeting over 40 lakh students from OBC, EBC, and DNT communities across the country.
- **Reducing dropout** – By encouraging higher education at *critical transition points*, in senior secondary school and post-secondary education.

What are the impacts?

- **Reduce educational inequities** – By focusing on historically disadvantaged groups, the PM YASASVI Scheme aims *to create a more inclusive education system*.
- **Ripple effect on economy** – This empowerment can lead to *better employment opportunities* and socio-economic mobility for both individuals and their families.
- **Strong foundation** – Supporting students at both school and college levels helps to nurture talent from an early age for personal and professional growth.
- **Access to higher education** – Empower marginalized students by removing financial barriers to education, thus increasing their and improving their long-term career prospects.

Way forward

- Effective implementation at the grassroots level is essential to reshape the educational landscape for millions of marginalized students in India.
- Proper monitoring and evaluation mechanisms to ensure that scholarships and infrastructure projects reach the intended beneficiaries.
- Raise awareness about the scheme, particularly in remote and rural areas to ensure that eligible students and their families are informed about the opportunities available to them.

19. Potential impacts of Trump's protectionist trade policies on India

- After the recent Elections, U.S. President-elect Donald Trump will likely hold a more favourable view of India compared to other nations.
- **Increased Tariffs:** Trump's administration is likely to impose higher tariffs on Chinese imports, which could lead to a shift in trade dynamics.
- India might benefit from this situation as companies look to relocate their manufacturing bases away from China, potentially increasing Indian exports.
- **Supply Chain Diversification:** As U.S. firms seek to diversify their supply chains to reduce dependency on China, India could emerge as an attractive

alternative for manufacturing and technology services, boosting economic ties between the two nations.

- **Pressure on Indian Goods:** Conversely, if Trump's policies lead to retaliatory measures from China or other countries, Indian goods may face increased scrutiny or tariffs in those markets, affecting India's export competitiveness.

Trump's immigration policies

- **H-1B Visa Restrictions:** Trump's administration may implement stricter immigration policies, particularly affecting H-1B visas commonly used by Indian IT professionals. This could limit the ability of Indian workers to enter or remain in the U.S. job market.
- **Talent Drain:** Stricter immigration laws might lead to a talent drain, where highly skilled Indian professionals seek opportunities in other countries with more favorable immigration policies, impacting India's tech sector.
- **Focus on Skilled Workers:** On the flip side, if Trump prioritizes skilled labor that aligns with U.S. economic needs, there could be opportunities for Indian professionals who meet those criteria to gain entry into the U.S. market.

Strategic opportunities and challenges

- **Strengthened Alliances:** Under Trump's leadership, India is likely to see strengthened ties with the U.S. and other allies like Japan and Australia through frameworks such as the Quad, which aims to counterbalance China's influence in the region.
- **Defence Cooperation:** Enhanced defence cooperation could lead to increased military sales and joint exercises between India and the U.S., bolstering India's defence capabilities against regional threats.
- **Balancing Relations with China:** While India may benefit from a closer relationship with the U.S., it will need to navigate its complex relationship with China carefully. Increased tensions between the U.S. and China could put India in a difficult position regarding its economic and security interests.

Way forward:

- **Leverage Strategic Partnerships:** India should capitalize on strengthened ties with the U.S. and allies like Japan and Australia to enhance its defence, trade, and technology capabilities while maintaining a robust independent foreign policy to balance regional dynamics.
- **Promote Domestic Resilience:** By advancing initiatives like "Make in India" and diversifying export markets, India can reduce reliance on vulnerable sectors impacted by U.S. protectionism and prepare to attract global supply chains shifting away from China.

20. Impeachment of High Court Judge

- The Opposition INDIA bloc parties in Rajya Sabha are preparing to give notice to move a motion to impeach Allahabad High Court judge Justice for his remarks at an event organized by the Vishwa Hindu Parishad last week.

Motion for impeachment

- **Allegations of judicial misconduct** – Remarks at the Vishwa Hindu Parishad event were reportedly inflammatory and targeted on minority communities.
- **Breach of judicial code of conduct** – Judges are expected to refrain from making public statements or engaging in activities that could compromise their neutrality or reflect personal biases.
- **Perception of partiality** – Statements favoring specific ideologies can create a perception of bias, especially when the judge is tasked with ruling on matters of public or constitutional significance.
- **Undermining judicial integrity** – When a judge publicly aligns with political or ideological stances, it risks blurring the separation between judiciary and politics.

Constitutional provisions for high court judges

- **Establishment and Composition** – Article 214 establishes a **High Court for each state** or a group of states.
- **Article 216** provides the composition of the High Court, including the Chief Justice and other judges as deemed necessary.
- **Article 217** – Deals with the appointment, qualifications, conditions of office, and tenure of High Court judges.
- **Tenure** – High court judges serve until the age of 62 unless impeached.
- **Removal** – Article 124(4) specifies grounds for removal, including "proved misbehavior" or "incapacity."
- **Article 215** – Gives every High Court the **power to punish for contempt of itself**.
- **Article 50** – States that the state must take steps to separate the judiciary from the executive in the public services of the state.
- **Article 221** – Provides for the salaries and allowances of High Court judges, ensuring they cannot be reduced during their term except during a financial emergency.

Roles and responsibilities of a judge

- **Delivering justice** – A judge must ensure fair and unbiased adjudication based on facts, evidence, and the law. Upholding constitutional morality and the rule of law is a key responsibility.

- **Interpreting and applying laws** - Judges interpret statutory and constitutional provisions to address legal disputes. Their rulings often create precedents, shaping the legal framework of the country.
- **Protecting fundamental rights** - Judges act as custodians of citizens' fundamental rights, often intervening when these rights are violated.
- **Maintaining judicial integrity** - They must conduct themselves in a manner that reinforces public confidence in the judiciary, avoiding controversies or conflicts of interest.

Procedure for impeachment of judges

- While the Constitution does not use the word 'impeachment', it is colloquially used to refer to the proceedings under Article 218 Article 124(4).
- The procedure for removal of judges is elaborated in the **Judges Inquiry Act, 1968**.
- **Initiation of the motion** - Requires at least 100 members' signatures in Lok Sabha or 50 members in Rajya Sabha. This motion is then submitted to the Speaker (Lok Sabha) or the Chairman (Rajya Sabha).
- Based on this, he or she may decide to either admit the motion or refuse to admit it.
- **Parliamentary voting** - For removal, both Houses must approve the motion with:
 - **A majority of the total membership and**
 - **A two-thirds majority of members present and voting.**
- **Presidential approval** - Following approval by Parliament, the President issues an order for the judge's removal.

Way forward

- Ensuring a fair inquiry is critical to balance judicial independence with accountability.
- Strengthen internal ethics committees within the judiciary.
- The controversy highlights the need for judges to remain impartial and avoid engaging in any activity that might cast doubt on their neutrality.

21. Key Recommendations by the Kovind Panel on One Nation, One Election:

- The Union Cabinet has approved two bills, including a constitutional amendment, to implement the One Nation, One Election (ONOE) policy.

One Nation, One Election:

- A policy to synchronize elections for the Lok Sabha and state legislative assemblies to reduce the frequency of elections, streamline governance, and minimize electoral expenditure.
- **Articles Involved:**
Proposed amendments to Articles **82A**, **83(2)**, and **327**, including the addition of Article **324A**, to facilitate synchronized elections.
- **Ramnath Kovind Committee:**
Formed in **September 2023**, the committee evaluated the feasibility of ONOE and submitted a detailed 18,626-page report after extensive stakeholder consultations.
- **Key Recommendations by the Kovind Panel on One Nation, One Election:**
 - **Legal Mechanism:** Develop a legally-tenable framework to implement synchronized elections.
 - **First Stage:** Conduct simultaneous elections for Lok Sabha and all state legislative assemblies.
 - **Second Stage:** Synchronize municipal and panchayat elections with Lok Sabha and state assembly polls within 100 days.
 - **Appointed Date:** President to notify the date of the first Lok Sabha session post-general elections for synchronization.
 - **Transitory Measure:** State assembly tenures post “appointed date” to end with the next Lok Sabha polls; synchronization ensured thereafter.
 - **Fresh Lok Sabha Elections:** Held in case of a hung House or no-confidence motion, with tenure limited to the remaining term.
 - **Fresh State Assembly Elections:** New assemblies to serve until the next Lok Sabha term ends.
 - **Single Electoral Roll:** Unified voter roll and EPIC cards managed by the Election Commission and state commissions.
 - **Logistical Preparations:** ECI to plan for sufficient equipment (EVMs, VVPATs), personnel deployment, and security measures.
 - **Infrastructure Readiness:** Advance preparation by ECI to ensure smooth execution of simultaneous elections.

22. Significance of Education in Mother Tongue

- The Prime Minister highlighted that National Education Policy (NEP) 2020 supports the **vision of teaching young children in their mother tongue**.
- The NEP 2020, with its emphasis on mother tongue education, is expected to bring about a paradigm shift in the Indian education system.
- It aims to create an environment where children can learn and grow in their native language, thereby fostering a deep understanding of their cultural roots.
- A mother tongue, also known as a native language, is the **first language a person learns from birth**. It is the language spoken in the family or

community during a child's early development, and it often reflects the culture, traditions, and social environment of that community.

Significance of Education in Mother Tongue

- **Improved Comprehension and Learning:** When children are taught in their mother tongue, they can understand and retain information more effectively.
- **Cognitive Development:** Learning in a familiar language supports cognitive skills, including problem-solving, critical thinking, and creativity.
- **Stronger Communication Skills:** Mother tongue education helps children develop strong language skills, which are crucial for both oral and written communication.
- **Cultural Identity and Preservation:** It strengthens children's connection to their community and identity, fostering a sense of pride and belonging.
- **Emotional Well-being:** It allows children to express themselves more freely and participate in social and academic activities.
- **Social Inclusivity:** It promotes equality by ensuring that all children, regardless of their background, can access education effectively.

Constitutional Provisions related to Promotion of Mother Tongue in India

- **Article 29 (1) – Protection of Interests of Minorities:** It ensures that any section of citizens, including linguistic minorities, have the right to conserve their language, script, and culture.
- **Section 29(f) of Chapter V under Right to Education Act, 2009** clearly states that, medium of instructions shall, as far as practicable, be in child's mother tongue.
- **Article 30 (1) – Right of Minorities to Establish and Administer Educational Institutions:** It allows minorities, whether based on religion or language, the right to establish and administer educational institutions of their choice.
- **Article 350A – Facilities for Instruction in Mother Tongue at the Primary Stage:** This article directs that the state shall provide facilities for instruction in the mother tongue at the primary level of education. It emphasizes that, as far as possible, children should be taught in their mother tongue or regional language in the early stages of education.
- **Article 350B – Special Officer for Linguistic Minorities:** To safeguard and promote the interests of linguistic minorities, including the protection and development of their language and culture.

Government Initiatives to Promote Education in Mother Tongue:

- **As per Unified District Information System for Education Plus (UDISE+) 2020-21**, there are 28 languages in which teaching learning is going on in grades (1-5).

- **National Education Policy (NEP) 2020:** It provides, wherever possible, for medium of instruction to be in the home language/ mother tongue/ local language upto at least class 5 and preferably upto class 8. It also provides for making available high quality text books in home language/ mother tongue and encouraging teachers to use bilingual approach while teaching.

Conclusion

- The emphasis on mother tongue education is not a new concept. Historically, several countries have adopted this approach to enhance the learning experience of young children.
- For instance, in the early 20th century, the Soviet Union implemented a policy of nativization that promoted education in the mother tongue of various ethnic groups.
- Similarly, in the 1950s, China introduced a policy to promote mother tongue education among its ethnic minorities. Embracing multilingualism is not merely an educational endeavour; it is a commitment to inclusivity and diversity.

23. Challenges of Simultaneous election

- The Union Cabinet approved “One Nation, One Election” to synchronize elections, sparking debates on its impact on federalism, democracy, and logistics.

One Nation One Election (ONOE)

- **Definition:** ONOE refers to holding elections for the Lok Sabha, all state assemblies, and local bodies simultaneously to streamline governance and reduce costs.
- **Historical Practice:** Simultaneous elections were conducted in India from 1951-1967 but were disrupted due to premature dissolutions of assemblies and the Lok Sabha.
- **Scope:** ONOE covers elections for the Lok Sabha and state assemblies, with municipal and panchayat elections synchronized within 100 days.

Constitutional Articles Involved in ONOE:

- **Article 83 & 172:** Relates to the duration of the Lok Sabha and state assemblies, requiring amendments for synchronization. **Article 324A:** Proposed for establishing logistical mechanisms for simultaneous elections. **Article 368:** Governs constitutional amendments requiring state ratification for changes impacting local bodies.

Need for ONOE:

1. **Reduced Costs:** ONOE aims to cut the high financial burden of frequent elections.
2. **Governance Efficiency:** Eliminates prolonged disruptions caused by the Model Code of Conduct (MCC).
3. **Resource Optimization:** Reduces diversion of security forces and personnel from essential duties.
4. **Voter Fatigue:** Prevents declining voter turnout caused by repeated elections.
5. **Development Continuity:** Minimizes policy paralysis and ensures uninterrupted governance.

Ramnath Kovind Committee Recommendations:

1. **Two-Phase Elections:** Phase 1: Lok Sabha and state assemblies. Phase 2: Local body elections within 100 days.
2. **New Article 82A:** Specifies terms and synchronization mechanisms for assemblies and Lok Sabha.
3. **Midterm Polls:** Ensures new elections for dissolved assemblies/Lok Sabha align with the national cycle.
4. **Single Electoral Roll:** A unified roll for all elections to streamline processes.
5. **Logistical Planning:** Advance procurement of EVMs, VVPATs, and deployment of personnel.

Challenges of ONOE:

1. **Overshadowing Regional Issues:** National issues may dominate, sidelining local priorities.
2. **Impact on Regional Parties:** Smaller parties may lose relevance, affecting political diversity.
3. **Federalism Concerns:** Centralized decision-making may undermine state autonomy.
4. **Logistical Hurdles:** Requires a significant scale-up in infrastructure, resources, and trained personnel.
5. **Midterm Dissolutions:** Aligning dissolved assemblies with the national cycle is complex.

Conclusion: A balanced approach is essential for implementing ONOE, ensuring cost efficiency without compromising democratic values, federal principles, and regional representation. As Justice Dipak Misra noted, "Any reform must harmonize with constitutional integrity and public welfare."

24. Significant key features of Railways Amendment Bill 2024

- Amid intense debates between the government and the opposition, the Lok Sabha passed the Railways (Amendment) Bill, in 2024.

Significant key features of the bill

- **Repeal of the Indian Railway Board Act, 1905:** The Bill repeals the 1905 Act, which governed the establishment and powers of the Railway Board. Provisions from the 1905 Act are now incorporated into the **Railways Act, of 1989**, for a unified legal framework. It combines the provisions of the 1905 Act and the 1989 Act, reducing legislative redundancy and simplifying governance.
- **Constitution of the Railway Board:** It empowers the central government to determine: The number of Railway Board members. Qualifications, experience, and terms of service for the Chairman and members. Method of appointment for these positions.
- **Streamlining Legal Provisions:** It consolidates provisions for easier administration and reduces the need for cross-referencing between multiple laws. It enables the central government to prescribe updated qualifications and service terms for Railway Board members, potentially improving leadership quality.
- **Administrative Integration:** It maintains the Railway Board's central authority while aiming for operational efficiency and uniformity in governance. It aligns with recommendations for a modernized railway structure, paving the way for potential decentralization and private sector participation.

What did MPs Say About the Bill?

- **Support from Government MPs:** The ruling party MPs praised the Bill as a significant step towards modernizing and strengthening Indian Railways, asserting that it would enhance the functions and independence of the Railway Board.
- **Concerns from Opposition MPs:** Opposition members argued for an independent Railway Board free from government control and highlighted that the Bill does not address critical issues like:
- **Concerns About Privatization:** The Opposition party is worried that the new Bill could lead to the privatization of Indian Railways, making it less accessible to poorer people.
- **Loss of Independence:** Many Members of Parliament (MPs) are concerned that more government control over appointments to the Railway Board could reduce the independence of Indian Railways. **Restoration of Discounts:**

Several MPs are calling for the return of fare discounts for senior citizens, journalists, and economically weaker groups, which were stopped during the pandemic.

- **Calls for Inclusivity:** Some MPs raised concerns about representation within the Railway Board, questioning whether marginalized groups would be adequately represented in appointments.

Way forward:

- **Strengthen Railway Board Autonomy: Establish an independent regulatory framework** to ensure the Railway Board operates with greater autonomy, focusing on safety, operational efficiency, and decentralization at zonal and divisional levels.
- **Inclusive Representation and Expertise:** Mandate merit-based appointments to the Railway Board, ensuring adequate representation of marginalized groups (SCs, STs, OBCs, and women) while emphasizing domain expertise for effective governance.

25. Why Switzerland suspends India's MFN

- Recently, Switzerland has announced that it will suspend the most favoured nation (MFN) clause in its double taxation avoidance agreement (DTAA) with India, starting from January 1, 2025.

Most Favoured Nation (MFN) clause

- **Most Favoured Nation (MFN)** - The MFN clause is a principle found in international treaties, including tax agreements, that ensures equal treatment for all parties involved.
- **Equal treatment** - If one country offers favourable tax rates or conditions to another, it must extend those same benefits to all other countries covered by the treaty.
- **No favour** - This clause is designed to guarantee that no country is treated less favourably than any other in trade or taxation matters.
- **WTO MFN** - MFN is applicable to WTO General Agreement on Tariffs and Trade (GATT), General Agreement on Trade in Services (GATS) (Article 2) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS).
- **India Switzerland MFN** - Switzerland had recognized MFN status for India under its DTAA.
- **India Switzerland DTAA** - The Double Tax Avoidance Agreement, between India and Switzerland, was signed in 1995 and amended in December 2011.

Withholding tax

- **Withholding Tax (WHT) or Retention tax** – It is an obligation on the individual (either resident or non-resident) to withhold tax when making payments of a specified nature, such as rent, commission, salary.
- **IT act** - The applicable withholding tax rate is prescribed in the Income Tax Act, 1961 or relevant Double Taxation Avoidance Agreement (DTAA), whichever is lower.
- **WHT Rate** - A person providing a benefit or a perquisite arising from a business or a profession can withhold tax at 10 % of the value of such benefit.

Why has Switzerland suspended the MFN clause?

- **2023 Nestle case** - Swiss company Nestle had sought a refund of withholding tax paid on dividends, claiming the benefit of the MFN clause under the India-Switzerland tax treaty.
- **Supreme court Judgement** – Supreme Court ruled that such automatic adjustments require formal notification under Indian law, not just a blanket application.

Impacts of MFN suspension

- **Higher tax liabilities for Indian companies** - Indian companies receiving dividends from Switzerland will face an increased tax burden, as the withholding tax on those dividends will rise to 10 per cent from 5 per cent.
- **Effects on Swiss investments in India** - Swiss companies that receive dividends from Indian subsidiaries will continue to face a 10% withholding tax, as this tax rate has always applied under the India-Switzerland DTAA.
- **EFTA investments unaffected** - It is unlikely to impact investments into India from the European Free Trade Association (EFTA), as these investments are already subject to the 10 % withholding tax rate.
- **No change for other DTAA benefits** - Indian companies operating in Switzerland will still be able to avail themselves of the other benefits provided under the India-Switzerland DTAA, such as tax relief on royalties and fees for technical services.

Way forward

- Aligning treaty partners on the interpretation and application of tax treaty clauses to ensure predictability, equity, and stability in international tax framework.
- Proactive negotiations to clarify and harmonise interpretations of treaty provisions are essential to safeguard Indian firms' interests abroad.

26. One Candidate One Constituency

- With the demand for One Nation One Election, the issue of one nation multiple constituency has also been raised.

Current electoral contesting provisions

- **Election** - The Constitution of India provides for regular elections every 5 years to the Legislative Assembly and the lower House of Parliament.
- **Parliamentary legislation** - Article 327 of Constitution empowers Parliament to regulate the manner of conducting the elections.
- **Two constituency contest** - Representation of the People Act 1951 permits a candidate to contest any election (parliamentary, assembly, biennial council, or bye-elections) from up to two constituencies.
- **Safety net for candidates** - Contesting multiple seats provides a safety net for candidates, especially in tightly contested constituencies.
- **Seat retainment** - Section 70 of RPA stipulates that a candidate can hold only one seat at a time, regardless of whether they have been elected to more than one seat.
- If a person is elected to two seats in a House should exercise option for one. Otherwise, both seats become vacant.

Impacts of one candidate multiple constituencies

- **Frequent by-elections** - There were 44 by-elections for State Assemblies in November 2024 due to the resignation of sitting legislators.
- **Wastage of financial resources** - The extra cost of holding a by-election falls on the government.
- **Financial burden for political parties** - Financial burden of organising a by-election disproportionately falls on the already defeated candidate and their party, forcing them to spend resources once again.
- **Favours ruling party** - The by-election necessitated by the vacation of a winning candidate within an initial six months tends to favour the ruling party.
- **Undermines democratic principles** - A candidate contesting from multiple seats serves as a hedging mechanism against uncertainties and often prioritises the leader's interests, not the people.

Way forward

- Amend Representation of People Act 1951 to ban one candidate contesting from multiple constituencies for the same office as recommended by Election Commission of India and 255th Law Commission.

- Recover the full cost of by-elections from the candidate vacating a seat to discourage candidates from contesting simultaneously.
- Hold the by-elections after a year, allowing voters ample time to make an informed decision and giving the defeated candidate sufficient time to recover and prepare.

27. Benefits of Greenwashing Indian Railways

- Recently Indian railways has exported unused diesel locomotives to African countries.

Status of Indian electrification

- **First electric train** - After commencement of first Railway service between Mumbai & Thane in 1853, first electric train was run between Mumbai & Thane in year 1925.
- **Mission 100% Railway electrification** - India has planned to electrify entire broad-gauge network routes of Indian Railways by March 2024.
- **Nodal Agency** - The Central Organization for Railway Electrification (CORE) along with other organizations.
- **Objectives** - To provide environment friendly, green and clean mode of transport to the people.
- To use of renewable energy, especially solar, by making use of the huge land parcel available along the railway tracks.

Benefits of railway electrification

- Electrification will provide energy efficient, eco-friendly mode of transport and also improve system throughput by modernization of the railway system.
- **Better railway efficiency** - Mission Electrification will result into seamless (end to end) train operation on electric traction.
- **Enhance connectivity** - Prioritizing electrification of high-density network (HDN), high utilized network (HUN) and last mile connectivity/port connectivity routs here started giving returns early.
- **Increased speed** - Electrification will help in increasing average speed of Freight Trains thereby help in achieving objective of "Mission Raftar".
- **Greater freight movement** - It enables haulage of heavier freight and longer passenger trains at higher speeds.
- **Financial savings** - Electrification plan will enable the state-owned railway to save an estimated Rs 264bn on its annual fuel bills.
- **Employment** - About 5.5 lakh man years will be generated during execution period of Mission electrification.

Issues with electrification of Indian Railway

- **High Costs** - The electrification project is estimated to cost around Rs 1300bn.
- **Redundant Diesel Locomotives** -The plan will make about 4000 serviceable diesel locomotives redundant.
- As of now, there are about 760 diesel locomotives idling across the network, many of which have a residual life of over 15 years.
- **Economic Viability** - The average cost of transportation on many routes may increase due to electrification.
- **Technical Challenges** - The transition from diesel to electric traction requires significant infrastructure changes and upgrades.
- **Environmental Impact** -The process of manufacturing and installing new electric locomotives and infrastructure also has an environmental impact.
- **Insignificant pollution reduction** - Of the 70% of total diesel oil consumption in the country was by the transport sector , the Share of the Railways was just 3.24%.
- Trucks consume 28% and Agricultural sector 13.2%.
- **Untenable environmental benefits** - Electricity is a secondary source of energy which needs to be generated by expending a primary source of energy from fossil fuels such as coal, oil and natural gas.

Way forward

- Increase the share of renewable energy production for railway electrification. Transcend to high-speed magnetic levitation system and explore the possibility of hyperloop.

28. Functions of Central Consumer Protection Authority (CCPA)

- Recently, the Central Consumer Protection Authority (CCPA) has issued 45 notices to various coaching centres and imposed a penalty of Rs 61, 60,000 on 19 coaching institutes for misleading advertisements.
- It is a statutory authority.
- **Established in** - 2019 under Section 10 of the Consumer Protection Act, 2019 and came into force in 2020.
- **Aim** - To regulate matters relating to violation of rights of consumers, unfair trade practices and false or misleading advertisements which are prejudicial to the interests of consumers as class and public at large.
- **Nodal Ministry** - Ministry of Consumer Affairs, Food & Public Distribution.
- **Functions** - Protect, promote and enforce the rights of consumers as a class, and prevent violation of consumers' rights under this Act.
- Prevent unfair trade practices and ensure that no person engages himself in unfair trade practices

- Ensure that no false or misleading advertisement is made of any goods or services which agree with the provisions of this Act or the rules and regulations made.
- Ensure that no person takes part in the publication of any false or misleading advertisement.
- **Powers** – Conduct investigations into violations of consumer rights.
- Issue directions to recall, refund and discontinuation of practices in matters of violation of rights and unfair trade practices.
- Discontinue & modify the false and misleading advertisement or may impose penalties.
- **Mechanisms** : Individual consumer complaints are to be registered through the National Consumer Helpline only.
- Register consumer grievances in Consumer Commissions through e-Dhakil.
- **Penalty for coaching institutes** – CCPA has issued “Guidelines for Prevention of Misleading Advertisement in Coaching Sector, 2024”.
- It facilitates a total refund of 1.15 crores to affected students.

29. Scheme for Promotion of International Cooperation for AYUSH

- The Ministry of AYUSH recently has rolled out several initiatives to foster the growth of Ayurveda products.
- It is a Central Sector Scheme for promotion of International Cooperation (IC Scheme) with the mandate to promote and strengthen awareness about Ayush Systems of Medicine.
- **Objectives** – To facilitate international promotion, development and recognition of AYUSH (Ayurveda, Yoga, Naturopathy, Unani, Siddha, Sowa-Rigpa and Homoeopathy).
- To foster interaction of stakeholders and market development at international level.
- To support international exchange of experts and information.
- To give boost to Ayush products/ services / education/ research/ training globally.
- To promote academics and research through establishment of Ayush Academic Chairs in foreign countries

AYUSH chairs

- **Aim** – To advance academic exchange, research, and public awareness of AYUSH, leading to its recognition & acceptance in the host country.
- **Establishments** – It results either from bilateral efforts or the willingness of a foreign institution to host the AYUSH Chair.

- A Chair MoU is then signed between the foreign university and an institute under the Ministry of Ayush.
- Subsequently, an AYUSH expert with the requisite qualification is selected.
- The Chair is then deputed to the foreign university.
- **Duration** - The chair is deputed initially for 1 year, and extendable up to 3rd year.
- **Functional academic AYUSH Chairs** - Bangladesh, Australia, Mauritius, Latvia, and Malaysia.

30. Rationale behind minority rights

- Minorities Rights Day is observed on December 18.

Origin of minority rights

- **Austrian constitution** - In 1867, Austrian Constitutional Law acknowledged that ethnic minorities have an absolute right to maintain and develop their nationality and languages.
- **Hungary & Swiss** - Hungary's Act XLIV of 1868 and the Constitution of the Swiss Confederation of 1874, granted the three languages of the country equal rights in civil services, legislation and in courts.
- **WWI peace treaty** - The provisions of the peace treaties after the First World War, focused particularly on the status of minorities.
- **UDHR** - Article 27 of the Universal Declaration of Human Rights gives every individual a right to community, that is the right to enjoy their own culture and to participate in cultural forums, associations etc.

Debates in the Constituent Assembly

- **Constitution committee** - The Advisory Committee on Fundamental Rights, Minorities, and Tribal and Excluded Areas, chaired by Sardar Vallabhbhai Patel, was formed in 1947.
- **Sub committees** - The problems and safeguards for minorities were discussed, debated and settled mainly by the sub-Committee on Minorities and the Sub-Committee on Fundamental Rights
- **Sub-Committee on Minorities** - It was entrusted with the specific task of considering and suggesting about the rights and safeguards proposed to be incorporated in the Constitution.
- **Objectives Resolution** - It stated that adequate safeguards shall be provided for minorities, backward and tribal areas, and depressed and other backward classes.

Minority rights enshrined in the Constitution

- **No constitutional definition** - Though the term 'minority' has been used in four places in the Constitution, no definition of the term 'minority' has been given.
- **Minority population** - Muslims, Sikhs, Christians, Buddhists, Jain and Zoroastrians (Parsis) have been notified as minority communities under Section 2 (c) of the National Commission for Minorities Act, 1992.
- As per the Census 2011, the percentage of minorities in the country is about **19.3%** of the total population of the country.

Rationale behind minority rights

- **Principles of minority rights** - Multiculturalism, differences, diversity and the rights of minorities that mark contemporary political theory.
- **Preservation of diversity** - Protecting the diverse socio-cultural elements and people of the diverse country.
- **Inadequacy of individual rights** - Individualistic rights under Articles 14-18 (equality), 19 (free speech) and 25 (freedom of religion) are not enough for the conservation of language, script or culture which comes under Article 29.
- **Group discrimination** - One may not be individually unjustly treated but it hurts, if the group to which one belongs is subjected to ridicule or denied any value.
- An individual's right to culture holds little meaning or significance, unless the community of which a person is a member of, or is identified with, is accorded the right to exist in a viable form.

GS 3 : Economy, Science and Technology, Environment

1. Guidelines on preventing greenwashing

- The Central Consumer Protection Authority (CCPA), under the Consumer Affairs Ministry, has issued guidelines for 'Prevention and Regulation of Greenwashing and Misleading Environmental Claims' to address greenwashing and misleading environmental claims.
- The move is part of the government's crackdown on misleading advertisements.

Key takeaways

- Greenwashing refers to the growing tendency of companies, organisations, or even countries to make dubious or unverifiable claims about their activities, products, or services being environment-friendly or climate-friendly.

- Greenwashing presents a false picture of the progress being made on the climate change front while at the same time rewarding entities for irresponsible behaviour.
- The 2015 Volkswagen scandal, in which the German car company was found to have been cheating in emissions testing of its supposedly green diesel vehicles, is one of the headline-grabbing examples of greenwashing. Several other big corporations, including Shell, BP, and Coca Cola have faced accusations of greenwashing.
- Countries too, are sometimes accused of greenwashing, for example, when they exaggerate the impact of new regulation on carbon emissions.

Guidelines on preventing greenwashing

- Use of misleading words, symbols, or imagery, emphasizing positive environmental attributes while downplaying or concealing negative aspects would constitute greenwashing.
- If a company, for example, makes the statement that its growth is based on “sustainable principles”, it would not be treated as a misleading environmental claim for the purposes of these guidelines. However, if the company claims that all its products are manufactured sustainably, then it will be examined for greenwashing.
- The Generic terms like “clean”, “green”, “eco-friendly”, “good for the planet”, “cruelty-free”, “carbon neutral”, “natural”, “organic”, “sustainable”, or similar other descriptions for a product would be allowed only if the company is able to substantiate these with evidence. The company will also have to use “adequate and accurate” qualifiers and disclosures while advertising such descriptions.

Types of Greenwashing

- **Greenhushing:** When a company or firms underreport or withhold information about their sustainability goals and progress.
- **Green-crowding:** It involves hiding in a group or crowd to avoid their unsustainable practices to be spotted.
- **Greenshifting:** It is an act of the company to shift the responsibility of adopting sustainable measures on consumers or individuals rather than having to take meaningful action at the corporate or brand level.
- **Greenlighting:** It occurs when a company spotlights a specific sustainability initiative undertaken by it to distract attention away from damaging activities.
- **Greenlabelling:** It is a marketing tactic adopted by companies to label their products something green or sustainable, but closer examination reveals this to be misleading.

2. Air Pollution Crisis

- Delhi's persistent air pollution crisis has highlighted the severe impact of air pollution on public health, the environment, and socio-economic conditions, emphasizing the urgency for collective measures to mitigate this issue.
- Air pollution refers to the contamination of the atmosphere by harmful substances, such as gases, particulates, and biological molecules, which pose risks to human health, ecosystems, and climate stability.

Categorization of Pollution:

- **Primary Pollutants:** Emitted directly into the air (e.g., carbon monoxide, sulfur dioxide).
- **Secondary Pollutants:** Formed through chemical reactions in the atmosphere (e.g., smog, ground-level ozone). **Industrial Emissions:** Burning fossil fuels for energy and manufacturing processes. **Vehicle Emissions:** Exhaust from automobiles contributes to urban air pollution. **Domestic Combustion:** Burning wood, coal, or biomass for cooking and heating. **Agricultural Practices:** Stubble burning and fertilizer use release harmful chemicals. **Natural Sources:** Dust storms, forest fires, and volcanic eruptions.

Impacts of Air Pollution:

- **Health:** Respiratory diseases (asthma, bronchitis). Cardiovascular issues and reduced life expectancy. Cognitive impairments, especially in children.
- **Environment:** Damage to ecosystems and biodiversity. Acid rain affecting soil and water quality. Contribution to climate change through greenhouse gases.
- **Economy :** Increased healthcare costs. Reduced agricultural productivity. Property and infrastructure damage.

Government Measures:

1. **Legislative Steps: National Clean Air Programme (NCAP):** Targets reducing air pollution by 20-30% by 2024. **Pollution Under Control (PUC) Certificate:** Mandatory for vehicles.
2. **Technological Interventions:** Adoption of CNG for public transport in Delhi. Encouragement of electric vehicles and renewable energy sources.
3. **Awareness Campaigns:** Promoting individual actions like tree plantation and reduced vehicle usage.
4. **Infrastructure Development:** Installation of air quality monitoring systems. Development of green belts in urban areas.

Way Ahead:

- **Stronger Implementation:** Enforcing stricter regulations and penalties for non-compliance.
- **Public Participation:** Encouraging citizen-driven initiatives like carpooling and waste composting.
- **Sustainable Practices:** Promoting renewable energy and efficient waste management systems.
- **Regional Collaboration:** Developing joint air quality management plans with neighboring countries.

Conclusion:

- Addressing air pollution demands a comprehensive, multi-faceted approach involving government policies, technological innovation, and global cooperation. Only through concerted efforts can we ensure clean air and a sustainable future.

3. Role of Ethanol Blending in Energy Security and Rural Economy

- The ethanol blending programme will revolutionize India's rural economy and strengthen energy security.

Ethanol blending programme

- **Ethanol blending programme (EBP)** – It is an initiative of Union Government that aims to increase the proportion of ethanol in petrol.
- The program promotes the blending of ethanol derived from sugarcane, maize and other agricultural feedstock with petrol.
- **Objective** – To reduce the reliance on fossil fuel imports and decrease greenhouse gas emissions.
- **Target** – To achieve 20% ethanol blending petrol by 2025-26.
- This target was previously set for 2030, but it is changed to 2025 in 2022.
- As of 2024, India achieved a 13.8% ethanol blend.
- **Framework for EBP – National Biofuel Policy, 2009** provides framework for implementation of EBP.
- **National Biofuel Policy** – It was launched in 2009 and is part of India's effort to achieve carbon neutrality by 2070.
- It proposed a non-mandatory target of 20% blending of both biodiesel and bioethanol by 2017.
- The policy is revised in 2018 to achieve 20% bioethanol blending and 5% biodiesel blending by 2030.

Role of ethanol blending in energy security

- **Reduces crude oil import** – India is the world's second-largest importer of crude oil, and is highly dependent on foreign sources to meet its energy needs.
- This Programme address this issue by gradually substituting imported petrol with ethanol, a domestically produced biofuel.
- **Reduce in exchequer of Indian forex** – Through increased ethanol blending, India has reduced crude oil imports, saved foreign exchange, and promoted energy self-sufficiency.
- In last decade, through EBP India has saved 1.06 crore rupees in foreign exchange.
- **Reduces external vulnerability** – By achieving self-sustainability in energy needs India will have more stable economic environment and sustainable growth.
- Reduce dependency on global oil markets and shield India from **price volatility** in the global energy sector.

How ethanol blending can boost the rural economy?

- **Rural industrialization** – The establishment of distilleries and processing plants can lead to rural industrialization.
- **Meet local energy needs** – This approach not only bolsters the economy but also enhances energy security by promoting local production of fuels.
- **Increase farmers income** – Government offers incentives to ethanol producers which contributes to the doubling of farmer income and insulating farmers from traditional market volatility.
- By creating a steady demand for sugarcane, maize, and other feedstock, the program provides farmers with a reliable income source.
- **Waste-to-wealth** – Production of ethanol using agricultural waste and unused resource to reduce environmental impact and promote circular economy. For example, molasses from sugar production and bagasse (a fibrous residue of sugarcane) are used in ethanol and power generation.
- **GOBARdhan** – Encourages the use of bio-waste in energy production.
- GOBARdhan with EBP fuels ethanol blending by promoting other biofuels.

Way Foward

- Support long-term biofuel growth by advancements in second-generation (2G) and third-generation (3G) biofuels.
- Use of non-food feedstocks like agricultural residues and algae, these technologies reduce competition between food and fuel.
- Address significant concern regarding the balance between food security and energy needs.

- Ensure that ethanol production continues sustainably, without compromising food supply.

4. Emerging H5N1 Mutations and Their Potential Impact on Human Infections

- Recent cases of **H5N1 avian influenza in British Columbia, Canada, and Alameda County, California**, have raised global public health concerns. These cases highlight **the virus's potential to mutate, increasing its adaptability to human hosts** and raising the risk of **human-to-human transmission**.

H5N1 virus

- **Influenza A virus subtype H5N1 (A/H5N1)** is a subtype of the **influenza A virus**, which causes influenza (flu), predominantly in birds.
- It is **enzootic (maintained in the population) in many bird populations, and also panzootic (affecting animals of many species over a wide area)**.
- **A/H5N1 virus can also infect mammals (including humans) that have been exposed to infected birds; in these cases, symptoms are frequently severe or fatal.**
- Ever since it emerged in **1996**, H5N1 has resulted in the **mass killing of billions of wild birds as well as fowls**.
- According to scientists, the **virus lacks changes** that would make it better adapted to transmit between people and therefore, the risk to human health remains low.
- The potential for influenza viruses to rapidly evolve and the **wide geographic spread of H5N1 signals that more human infections should be expected**.
- **New Clade Emergence: The Avian Influenza H5N1 (clade 2.3.4.4b) emerged in late 2020**, leading to a global outbreak primarily spread by migratory birds.
- Millions of birds have died due to the outbreak, and the virus has been detected in over 200 mammalian species, including humans.
- **Genomic Findings: Virus belonged to clade 2.3.4.4b, genotype D1.1.**
- **PB2-E627K mutation** identified, associated with: Faster replication in human cells and enhanced adaptation to human hosts.

5. Impact of Removing Windfall Tax

- With global oil prices stabilizing and domestic fuel supply improving, the government has decided to scrap the windfall gains tax, ensuring more predictable taxation for the oil industry.

Windfall Tax

- A windfall tax is a **levy** imposed on **companies experiencing unexpected profits** due to external factors like market shifts or crises.
- In India, it was **introduced on July 1, 2022**, targeting domestic crude oil production and exports of diesel, petrol, and ATF. The tax aimed to capture windfall profits and ensure adequate domestic fuel supply amid rising global prices after **Russia's invasion of Ukraine**.
- The tax was **imposed as Special Additional Excise Duty (SAED)** on crude oil, and **Additional Excise Duty (AED) or Road and Infrastructure Cess (RIC)** on fuel exports.
- Initially, the tax was Rs 23,250 per tonne on crude oil, Rs 13 per litre on diesel exports, and Rs 6 per litre on petrol and ATF exports.
- The tax was **regularly reviewed** based on global oil price fluctuations.

Impact of Removing Windfall Tax

- **Stable Tax Environment:** Boosts predictability, encouraging long-term investments in oil production.
- **Revenue Decline:** The tax was generating less revenue, falling from Rs 25,000 crore in FY 2022-23 to Rs 6,000 crore in FY 2024-25.
- **Oil Companies' Profitability:** Increased profits for producers like ONGC and Reliance Industries as they no longer pay the levy.
- **Encourages Domestic Production:** Promotes higher domestic oil production and exploration.
- **Policy Confidence:** Signals that India is confident in stable global oil prices and future supply.

6. Key takeaways of Ratapani Tiger Reserve

- The Ratapani Wildlife Sanctuary in Madhya Pradesh was declared a tiger reserve following in-principle approval from the Ministry of Environment, Forest, and Climate Change through the National Tiger Conservation Authority.
- This development comes against the backdrop of Madhav National Park (Madhya Pradesh) also receiving approval to be declared a tiger reserve. Ratapani is the 57th tiger reserve in India, marking a significant step in tiger conservation efforts

Key takeaways

- The notification delineates the core and buffer areas, making Ratapani the eighth tiger reserve in Madhya Pradesh.

- The core area spans 763.8 square kilometers, while the buffer area covers 507.6 square kilometers, making the total area of the Ratapani Tiger Reserve 1,271.4 square kilometers.
- The notification was issued under Section 38V of the Wildlife (Protection) Act, 1972, acknowledging the core area as a critical tiger habitat.
- Sitting in the lap of the Vindhya hills, the sanctuary encompasses a World Heritage Site – the Bhimbetka Rock Shelters – and many historical and religious destinations.
- The reserve is home to a rich variety of flora and fauna, including teak forests, bamboo, and a diverse range of wildlife.

7. The National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)

- The innovation hubs established under NM-ICPS are expected to move towards self-funding through commercialization as part of their financial autonomy journey.

Cyber Physical Systems (CPS)

- Cyber-Physical Systems (CPS) is merging of physical world with computational systems, primarily developed to monitor and control the physical devices in the systems.
- **Intelligent decision-making** - CPS enables immediate responses to changing physical conditions by real-time data from sensors.
- **Automation** - It makes the machines capable of making autonomous decisions, adapting to changing conditions, and optimize their performance.
- **Industry application** - This interaction between digital and physical component has application across various industries like manufacturing, healthcare, transportation and smart energy grid.

National Mission on Interdisciplinary Cyber-Physical Systems

- **Aim** - To coordinate all stakeholders by establishing strong linkages between academia, industry, Government and International Organizations.
- **Launch** - In December 2018 with a budget outlay of 3,660 crore.
- **Technology Innovation Hubs (TIHS)** - This mission has setup 25 TIHS in reputed institutes across the country covering areas like AI, Machine Learning, Robotics, Cyber security, Data Science, Quantum Technologies and so on.
- **Ministry** - Department of Science & Technology (DST), Ministry of Science and Technology.

Mission objectives:

- It aims to establish India as a global leader in Cyber-Physical Systems (CPS).
- To develop technologies, prototypes and demonstrate associated applications pertaining to national priorities.
- To translate existing research into high technology readiness level (TRL), market-ready products.
- Collaborating with the startup ecosystem, industrial sectors and governmental organizations to bring out technological solutions for people-centric problems.

Key achievements of this mission

- **Innovation and startup incubation** - In just 6 years, over 1,500 new technologies and tech products from over 650 startups.
- **Employment generation** - The mission has provided over 16,000 jobs and over 1.5 lakhs people trained in entrepreneurship.
- **Plug and play testbeds** - Creation of testbeds in India for autonomous navigation and security operations of critical infrastructure.

Way forward

- Make in India as a global leader in CPS technologies, to boost economic growth, self-reliance, and societal well-being.
- Commercialization of Technology Innovation Hubs to make them self-funding which enhances their financial autonomy.
- Incentivize Indian industry to fund and co-create their next innovations from these hubs.

8. Need for the Project INROAD

- The coverage of natural rubber plantations in the North-Eastern States under the Project INROAD for the Financial Year, 2025 has been completed recently.

Project INROAD?

- Project INROAD (Indian Natural Rubber Operations for Assisted Development) aims to develop 2 lakh hectares of Natural Rubber (NR) plantations in North East and West Bengal besides improving quality of processed forms of rubber.
- The duration of the projects is 5 years.
- **Public Private Partnership** - This collaborative project in **Public Private Partnership mode** involve tyre majors, Rubber Board and Government of India.

- **ATMA and Rubber Board** – Automotive Tyre Manufacturers Association (ATMA), a body of tyre manufacturers in the country, has collaborated with the Rubber Board for the project.

Need for the project

- **Immense potential for rubber plantation** – The North East (NE) region holds immense potential for rubber plantation in view of availability of land and suitable agro-climatic conditions.
- At present NE states account for about 23% of the area and 15.7% of the production.
- **Tyre industry** – being the major consumer of Natural Rubber in India as it utilizes over 70% of the total Natural Rubber produced in the country.

Components under the Project INROAD

- **Financial inclusion** – Interest Subvention for loans availed by farmers and assistance in loan syndication.
- **Training and capacity building** – Creating infrastructure for training facilities and capacity building of sector stakeholders.
- Conducting training programmes for farmers, tappers, etc. practices and technologies.
- **Quality and productivity** – Enhancement of quality and productivity of rubber by taking appropriate initiatives in all rubber growing regions.
- **Support for primary inputs** – Supporting pre-planting operations (land preparation) and providing irrigation facilities.

Benefits of the Project INROAD

- **Increased production** – The project will lead to increased production of Natural Rubber for the industry.
- **Generate direct employment** – Around 825 person per hectare during immature phase and provide permanent job opportunity for 0.5 persons per hectare in matured phase.
- **Development of nurseries** – Production of other plantation inputs such as intercropping, more business or work for rubber dealers, processors and so on.
- **Local small scale industry** – Development of local small scale industry such as wood cutting & processing, furniture making and so on.
- **Livelihood opportunities** – Additional Income opportunities through other on farm activities like Bee keeping and so on.

Impacts of the Project INROAD

- **Development of Nurseries** – Over 3 crore trees have been planted so far under the project.
- The largest impact of INROAD project has been rejuvenation of nurseries in the region.
- **Grass-root Level engagement** - 2 lakh hectares will therefore directly benefit nearly 2.5 lakh farmers and their families.
- **1.4 Lakh beneficiaries** – So far the project has benefitted nearly 1.4 Lakh beneficiaries across **94 districts** in North-eastern states.
- **Women Empowerment** – An indirect benefit of the project has been the motivation to women for a better life for them and their children.
- The commitment being exhibited by women working in the fields has been infectious.

9. How land degradation is a matter of concern

- The UNCCD, a treaty addressing desertification and drought, partnered with Germany's Potsdam Institute for Climate Impact Research to release an analysis ahead of COP16's launch in Riyadh, Saudi Arabia.

Land Degradation

- Land degradation is defined by the United Nations Convention to Combat Desertification (UNCCD) as the “**reduction or loss of the biological or economic productivity** and complexity of rainfed cropland, irrigated cropland, or range, pasture, forest and woodlands” due to various pressures, including land use and management practices. This phenomenon results in diminished soil quality and productivity, affecting both ecosystems and human livelihoods.

Matter of Concern

- **Water Insecurity:** Land degradation exacerbates water scarcity and reduces access to safe water, leading to a higher incidence of water- and food-borne diseases. The **World Health Organization (WHO) reports** that unsafe drinking water and inadequate sanitation lead to approximately 829,000 deaths per year from diarrheal diseases alone.
- **Food Security:** It reduces the quality and quantity of food production, increasing malnutrition risks.
- **Health Risks:** Degraded lands contribute to the spread of water- and food-borne diseases due to poor hygiene and lack of clean water. Respiratory issues can arise from soil erosion and dust.

- **Environmental Impact:** Eroded soil carries fertilizers and pesticides into water bodies, harming aquatic life and communities dependent on these resources.

Causes of Land Degradation

- **Chemical Overuse:** Excessive fertilisers and pesticides degrade soil; **50% of agricultural land** suffers from nutrient depletion, salinisation, and waterlogging affecting **30% of irrigated lands** globally.
- **Soil Erosion:** Unsustainable farming practices lead to the loss of **24 billion tons of fertile soil annually**, reducing crop yields by up to **50% in some regions**.
- **Climate Change:** Extreme weather events reduce global crop yields by **10%-50% by 2050**; **12.6% of drylands** were degraded between 1982-2015, affecting **213 million people**.
- **Urbanization:** Rapid urban growth of **1 million hectares per year** destroys habitats, reduces farmland, and increases runoff, exacerbating soil erosion and biodiversity loss.
- **Deforestation and Overgrazing:** **420 million hectares of forest lost since 1990**; overgrazing degrades **34% of the global degraded area**, weakening soil health and ecosystems.

Way forward:

- **Sustainable Land Management Practices:** Promote eco-friendly agricultural methods, reforestation, and efficient irrigation to restore soil health, combat erosion, and improve water retention in degraded lands.
- **Global Collaboration and Policy Implementation:** Strengthen international frameworks like the UNCCD, allocate resources for affected regions, and adopt policies that integrate land restoration with climate resilience and biodiversity conservation.

10. Guidelines and key highlights of Natural Farming

National Mission on Natural Farming (NMNF)

- **Scheme Details:** A centrally sponsored scheme under the **Department of Agriculture & Farmers' Welfare (DA&FW)**, Ministry of Agriculture & Farmers' Welfare (MoA&FW).

Key Highlights of the NMNF Guidelines:

- **Mission Objective:** Promote **natural farming** in a mission mode. **Reduce dependency on chemical inputs** across the country. Foster a **mass movement** (jan bhagidari) for natural farming through location-specific solutions.
- **Guidelines Focus: Common standards** for natural farming backed by scientific support. **Farmer-friendly certification procedures** for natural farming produce. Creation of **two bodies**: one for policymaking and another for implementation. Training of **30,000 Krishi Sakhis** (community resource persons) to assist farmers.

Scope of the NMNF

- **Target Areas:**
 - **750,000 hectares** to be converted to natural farming.
 - **10 million farmers** across **15,000 clusters** in willing **Gram Panchayats** (GPs).
 - **Pilot clusters** will be created to train farmers in natural farming practices, with **50 hectares** per cluster and around **125 farmers** (with a maximum of **1 acre per farmer**).
- **Data Monitoring:** **IT portal** to track progress, monitor impact, and collect **real-time data** for policy support.

Governance Structure

The mission will be overseen by three key bodies:

1. **National Steering Committee (NSC):** Chaired by **MoA&FW**. Responsible for **policy direction** and **overall monitoring** of the mission's progress.
 2. **National Executive Committee (NEC):** In charge of the **mission's implementation** and ensuring its success.
 3. **Natural Farming (NF) Cell:**
 - Headed by a **Joint Secretary** from the **Integrated Nutrient Management Division**.
 - Responsible for **execution, capacity building, monitoring, and evaluating impacts** across the country.
 - Provides support to states, central institutions, and stakeholders.
- **Role of Krishi Sakhis:** **30,000 Krishi Sakhis** will play a critical role in scaling up NF practices: **Trained to provide extension services** to farmers.
 - **Raise community awareness** and mobilize farmers to adopt natural farming. **Training:** Krishi Sakhis will receive **hands-on training** from experts at **KVKs** or agricultural universities. **Cluster Formation:** Teams of two Krishi Sakhis will mobilize **125 farmers** per cluster to adopt NF practices at the beginning of each crop season.

11. Key Outcomes of COP 29

- Recently the COP 29 was concluded in Baku Azerbaijan and has adopted various strategies to mitigate climate change.
- **About** – The COP is the main decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC).
- **Members** – It brings together the **198 Parties** (including the European Union) to negotiate and agree on how to tackle climate change, reduce emissions and limit global warming.

Goals of COP - 29

- **New Collective Quantified Goal (NCQG)** – COP 29 aims to replace the current 100 billion dollars per year goal and mobilize higher funding to address climate change.
- **Implementing the Global Stocktake** – To review the stocktake report which was published in COP 28 which provides the report on collective progress towards the Paris Agreement goals to guide future climate policies and strengthen global efforts.
- **Just energy transition** – COP29 will focus on advancing the energy transition agenda, with particular emphasis on reducing global reliance on fossil fuels and scaling up renewable energy deployment.
- **Updated nationally determined commitments** – NDCs are voluntary commitments pledged by the countries to reduce emissions and adapt to climate impacts under the Paris Agreement framework.

Outcomes of COP 29

- **New climate finance goal** – The New Collective Quantified Goal (NCQG) is a new climate finance target that will replace the USD 100 billion goal that was set to expire in 2025.
- The NCQG aims to triple climate finance for developing countries from USD 100 billion annually to USD 300 billion annually by 2035
- The parties were able to agree on a new goal consisting of two parts:
- **Carbon market framework** – Countries finalized the rules for carbon trading under the Paris Agreement, operationalizing mechanisms like the Paris Agreement Crediting Mechanism (PACM).
- **UAE Dialogue and Global Stocktake (GST)** – COP29 served as a follow-up to the first-ever comprehensive assessment of global progress under the Paris Agreement, completed at COP28.

India's initiatives in COP 29

- **Disaster Resilient Infrastructure** - Integrating Disaster Resilient Infrastructure into the Adaptation Strategies offering a pathway toward more resilient and sustainable development.
- **Lead-IT Summit** - India co-hosted Lead-IT Member Meet with Sweden.
- The summit focusses on de-carbonization of heavy industry.
- It also formed the India-Sweden Industry Transition Partnership (ITP) as part of the Lead-IT initiative.
- **SIDS Adaptation Finance** - India has advocated finance unlocking and disaster-resilient support for Sustainable Infrastructure in Small Island Developing (SIDS).
- **Energy Transitions for the Global South** - Role of solar energy in addressing the challenges of energy security and climate change, with a special emphasis on its significance for the Global South.

Shortcomings of COP 29

- The 300 billion dollar funding falls short of proposed 1.3 trillion dollars annually by 2025 to meet climate changes mitigation by 2030.
- Activists also flagged concerns about greenwashing by large meat and dairy industries, which contribute significantly to methane emissions.
- No significant new financial pledges or concrete commitments to fund adaptation and resilience efforts, especially for vulnerable countries like SIDS and LDCs.

12. Targets of India for Viksit Bharat 2047

- India aims for developed nation status by 2047 under the Viksit Bharat vision. However, challenges like slower growth, high taxes, and declining foreign investments risk hindering progress.

Targets of India for Viksit Bharat 2047:

- **Economic Growth:** Achieve a sustained GDP growth rate of 7-8% annually.
- **Social Equity:** Eradicate poverty, ensure universal healthcare, and provide quality education.
- **Global Competitiveness:** Position India among the top three global economies.
- **Environmental Sustainability:** Attain net-zero emissions by 2070 while enhancing renewable energy adoption.
- **Industrial Modernization:** Boost manufacturing to contribute 25% to GDP under Make in India.

Government Initiatives for Viksit Bharat

- **Make in India and Aatmanirbhar Bharat:** Promote domestic manufacturing and reduce import dependency.
- **PLI Schemes:** Financial incentives for key sectors like electronics, pharma, and textiles.
- **PM Gati Shakti Master Plan:** Integrates infrastructure projects across sectors for faster development.
- **Digital India:** Expands internet access, boosts fintech adoption, and supports e-governance.
- **National Education Policy (NEP 2020):** Reforms in education to create a skilled workforce.
- **Green India Mission:** Focus on renewable energy and sustainable urban development.

Challenges India Faces:

- **Economic Inequalities:** Regional and income disparities hinder inclusive growth.
- **Infrastructure Gaps:** Delayed implementation of key projects affects connectivity.
- **Policy Uncertainty:** Retrospective tax policies and weak enforcement of reforms deter investors.
- **Global Risks:** Economic slowdown and geopolitical tensions impact trade and investments.
- **Environmental Concerns:** Balancing industrial growth with ecological sustainability remains critical.

Way Ahead:

- **Policy Reforms:** Ensure consistency in fiscal and monetary policies to attract investments.
- **Skill Development:** Bridge the education-employment gap by focusing on industry-relevant skills.
- **Boost Exports:** Enhance global trade partnerships and competitiveness in manufacturing.
- **Rural Development:** Strengthen healthcare, education, and infrastructure in rural areas.
- **Green Transition:** Scale up renewable energy capacity and adopt sustainable practices across industries.

Conclusion:

- India's vision for Viksit Bharat 2047 is ambitious but achievable with sustained efforts in policy, innovation, and social inclusion. By addressing

challenges strategically, India can emerge as a global leader in economy and sustainability, ensuring equitable growth for all.

13. Suggestions by CII to maintain fiscal discipline

- Recently the Confederation of Indian Industry (CII) has suggested that Union Government should not set aggressive targets for fiscal deficit.

Fiscal deficit

- **Fiscal deficit** - Is the difference between total revenue and total expenditure of the government. The **fiscal deficit for 2023-24 is 5.8% of the GDP**. The average fiscal deficit of Indian States is 3.5% in 2023-24.
- **Target** - Fiscal deficit target is at **4.9% of GDP for 2024-25** and aims to reduce it to **4.5% for 2025-26**.
- **Borrowing limit** - Union government imposed the net borrowing ceiling of 3.5% of GSDP on states as recommended by the Fifteenth Finance Commission.
- **Fiscal Responsibility and Budget Management Act, 2003** - To ensure inter-generational equity in fiscal management.
- It sets limit on fiscal deficit and borrowing for both the Central and State governments.
- **State fiscal responsibility acts** - Each State may have its own Fiscal Responsibility Act, which further defines the limits and guidelines for borrowing and fiscal management within the State.
- **Role of Union Government** - It plays a significant role in overseeing fiscal matters, including approving borrowing limits for States based on recommendations from bodies like Finance Commission.

Constitutional provisions related to fiscal management

- **Article 280** - It mandates to constitute Finance Commission every fifth year or earlier constituted to make fiscal matters.
- **Article 293** - It grants fiscal autonomy to states, allowing them to borrow only from within the territory of India on guarantee from the Consolidated Fund of the State.
- **7th Schedule** - Fiscal matters are delineated in the 7th Schedule of the Constitution, with Public Debt of the State falling under the State List, giving states exclusive jurisdiction over this matter.
- **Distribution of revenues** - **Articles 268 to 272** of the Indian Constitution define the distribution of revenues between the Union and the States.
- **Grants-in-Aid** - The Constitution provides for grants-in-aid to the States from the Central resources.

Suggestions by CII to maintain fiscal discipline

- **Fiscal stability reporting** - To aid longer-term fiscal planning, the government should consider instituting Fiscal Stability Reporting.
- This could include annual reports on fiscal risks under different stress scenarios and the outlook for fiscal stability.
- The exercise will help forecast potential economic headwinds or tailwinds and assess their impact on the fiscal path.
- **State-level fiscal stability reporting** - To ensure that states regularly assess and report their fiscal health, helping to identify risks and fiscal vulnerabilities at the state level.
- It would also bring more transparency to state finances and improve fiscal discipline.
- **To maintain moderate targets** - CII has suggested sticking to the fiscal deficit target of 4.9% of GDP for FY25 and a target of 4.5% for FY26.
- CII has also pointed out that overly aggressive targets beyond the ones mentioned could adversely affect economic growth.

14. National Mission on Natural Farming

- National Mission on Natural Farming (NMNF) was launched recently with an outlay of Rs 2,481 crore by subsuming all previous schemes to promote natural farming.

National Mission on Natural Farming

- **National Mission on Natural Farming (NMNF)** - The scheme aims to bring around one crore farmers under natural farming and is targeted to cover around 0.75 million hectares of land over the next few years.
- **Subsumed schemes are:** Bhartiya Prakratik Krishi Paddhati - Bhartiya Prakritik Krishi Paddhati (BPKP) was launched in 2019-20 to promote natural farming. Natural Farming Corridor - The Natural Farming Corridor is a program in India to promote natural farming practices along the Ganges River.
- **Natural farming** - It works on the broad principle that the soil itself contains all the nutrients essential for plant growth.
- **Zero budget** - It needs no external inputs, nutrient recycling and the entire process is treated as an agroecology based diversified farming system.
- Natural farming is a more Indianised version of agriculture, while organic is seen as a European concept.
- According to this technique, plants obtain 98-98.5% of nutrition from air, water, and sun, and the remaining 1.5% from the soil.

- **Components of natural farming** – The components which create a suitable micro-climate for maximum beneficial microbial activity in soil are:
- **Beejamrutham** – Microbial coating of seeds using cow dung and urine based formulations.
- **Jeevamrutham** – The application of a mixture made with cow dung, cow urine, jaggery, pulse flour, water and soil to multiply soil microbes.
- **Mulching** – For soil humus formation and to prevent water evaporation.
- **Waaphasa** – For soil aeration through a favorable microclimate
- **Insect and pest management** – Use of decoctions made from cow dung, cow urine and green chilies called ‘kashyams’.

Why India is promoting natural farming over organic farming?

- **Lower input costs** – Natural farming eliminates the need to purchase organic fertilizers, pesticides or external inputs, significantly reducing farming expenses.
- **Improved soil health** – By avoiding tillage and external inputs, natural farming preserves soil structure and enhances microbial activity, leading to long-term soil fertility.
- **Water conservation** – Practices like mulching and using cover crops in natural farming help retain soil moisture, reducing water usage compared to organic farming.
- **Low energy consumption** – Without the need for compost preparation, machinery for tillage or certification processes, natural farming uses less energy.
- **Reduced market dependency** – Farmers practicing natural farming can produce all necessary inputs on-site, avoiding reliance on purchased organic products or fertilizers.

Way forward

- Government need to support farmers in transition period until the yield becomes equal to yield from chemical-based farming.
- Large-scale and long-term assessment of the natural farming method prior to recommending it for wider adoption.
- Promoting awareness among farmers to make more farmers adapt to natural farming.

15. Why a Free Fall in the Rupee Seems Unlikely

- India’s economic resilience provides key reasons **why the rupee is unlikely to experience a free fall despite recent challenges like capital outflows and a dip in foreign exchange reserves.**

Robust Balance of Payments (BoP):

- **Current Account Deficit (CAD):** India's CAD for 2023-24 is **\$23.29 billion**, significantly lower than past highs like **\$78 billion in 2011-12**. This manageable CAD is supported by strong surpluses in the **invisibles account**, primarily from:
 - **IT and software services exports:** \$142.07 billion in 2023-24.
 - **Remittances:** A record \$106.63 billion in 2023-24.
 - **Goods Trade Deficit:** While the merchandise trade deficit remains high (**\$242 billion in 2023-24**), the invisibles surplus offsets much of its impact.

Nature of Capital Flows:

- **Foreign Direct Investment (FDI):** FDI, which represents long-term investment, has declined to **\$26.47 billion in 2023-24**, but it remains a stable source of capital inflow. FDI's stability contrasts with more volatile sources like FPIs.
- **Foreign Portfolio Investors (FPIs):** FPIs pulled out **\$11.47 billion in October 2024** and **\$2.54 billion in November 2024**, causing temporary rupee depreciation. However, such outflows are cyclical and not indicative of structural issues.

Components of BoP

- **Current Account:** Tracks the flow of goods, services, income, and transfers. **Trade in Goods:** Exports minus imports of tangible products. **Trade in Services:** Includes IT services, tourism, financial services, and transportation. **Income:** Earnings from foreign investments minus payments to foreign investors. **Current Transfers:** Includes remittances, gifts, and foreign aid.
- **Capital Account:** Focuses on capital transfers and acquisitions or disposals of non-financial, non-produced assets. **Capital Transfers:** Includes grants for infrastructure projects or debt forgiveness. **Acquisition/Disposal of Assets:** Involves items like patents or trademarks.

External Commercial Borrowings (ECBs)

- ECBs refer to loans or funding obtained by an Indian entity from non-resident lenders in foreign currencies. These borrowings are typically used for financing specific projects, infrastructure development, or expanding business operations.

16. Key provisions of Digital Agriculture Mission

- Gujarat became the first State in the country to generate Farmer IDs for 25% of the targeted number of farmers in the State. The Farmer ID is part of Digital Agriculture Mission.
- A Farmer ID is a unique digital identity of farmers based on Aadhaar, linked dynamically to the State's land records system, which means the Farmer ID gets automatically updated with the changes in the land record details of an individual farmer.

Key provisions of the Copyright Act

- The Digital Agriculture Mission is designed as an umbrella scheme to support various digital agriculture initiatives. These include creating Digital Public Infrastructure (DPI), implementing the Digital General Crop Estimation Survey (DGCES), and supporting IT initiatives by the Central Government, State Governments, and Academic and Research Institutions.
- The scheme is built on two foundational pillars: Agri Stack. Krishi Decision Support System.
- Additionally, the mission includes 'Soil Profile Mapping' and aims to enable farmer-centric digital services to provide timely and reliable information for the agriculture sector.

AgriStack: Kisan ki Pehchaan

- AgriStack is designed as a farmer-centric Digital Public Infrastructure (DPI) to streamline services and scheme delivery to farmers. It comprises three key components:
 - 1. Farmers' Registry
 - 2. Geo-referenced village maps
 - 3. Crop Sown Registry
- A crucial feature of AgriStack is the introduction of a 'Farmer ID', similar to Aadhaar card, serving as a trusted digital identity for farmers.

Krishi Decision Support System

- The Krishi Decision Support System (DSS) will integrate remote sensing data on crops, soil, weather, and water resources into a comprehensive geospatial system.

Some of the key benefits of the mission include:

- Digital authentication for accessing services and benefits, reducing paperwork and the need for physical visits.
- Enhanced efficiency and transparency in government schemes, crop insurance, and loan systems through accurate data on crop area and yield.
- Crop map generation and monitoring for better disaster response and insurance claims.
- Development of digital infrastructure to optimize value chains and provide tailored advisory services for crop planning, health, pest management, and irrigation.

17. International Fund for Agricultural Development (IFAD)

- The Odisha government is planning to secure a ₹734.86-crore external loan from the International Fund for Agricultural Development (IFAD) to implement Phase II of the Odisha Particularly Vulnerable Tribal Groups (PVTGs) Empowerment and Livelihood Improvement Programme (OPELIP-II).

International Fund for Agricultural Development (IFAD):

- IFAD is an **international financial institution** and a **specialized United Nations agency**.
- It **invests in rural people**, empowering them to **improve their food security, nutrition, and incomes** through **funding of grants and low-interest loans** to several projects.
- **Founded in response to a global food crisis, since 1977**, IFAD-supported projects have reached hundreds of millions of people around the world.
- IFAD works in areas where poverty and hunger are most prominent.
- It is the only specialized global development organisation exclusively focused on and dedicated to transforming agriculture, rural economies, and food systems.
- IFAD **grants support research, innovation, institutional change**, and pro-poor technologies.
- IFAD extends **two types of grants**, depending on the nature of the innovation and the scope of intervention: **global or regional grants and country-specific grants**.
- IFAD **headquarters** is located in **Rome, Italy**. It is a member of the United Nations Development Group.

18. The importance of ANI versus OpenAI

- The lawsuit against OpenAI in India is poised to establish key precedents for defining the legal accountability of AI developers regarding the content generated by their platforms within the country.

Core allegations made by ANI against OpenAI

- **Unauthorized Use of Copyrighted Content:** ANI alleges that OpenAI used its copyrighted news content to train its language models without obtaining the necessary permissions, constituting copyright infringement.
- **Verbatim Reproduction:** ANI claims that ChatGPT generates responses that are either verbatim or substantially similar to its original articles, which violates copyright protections. They argue that this reproduction occurs without authorization.
- **False Attribution and Fabricated Information:** ANI highlights instances where ChatGPT has attributed false statements or fabricated interviews to the agency, which they argue damages their reputation and risks spreading misinformation.
- **Liability of AI Platforms:** The case presents an unresolved legal question regarding whether AI platforms can be held liable for copyright infringement when they use publicly available content for training purposes. This issue is not only pertinent in India but also resonates globally, as similar lawsuits have emerged in other jurisdictions.

What implications does this case have for the future of AI development and media partnerships?

- **Setting Legal Precedents:** The case may establish important legal precedents regarding the responsibilities of AI companies toward content creators, influencing how future disputes are resolved in India and potentially beyond.
- **Impact on Licensing Agreements:** As seen with other publishers entering licensing agreements with AI firms, this case could encourage more formalised partnerships where media organisations negotiate terms for their content's use in AI training, ensuring they receive compensation for their intellectual property.
- **Challenges for Smaller Publishers:** While larger media organisations may have the resources to negotiate favourable terms with AI companies, smaller publishers could face difficulties without similar leverage. This disparity could affect diversity in media representation and innovation within the industry.

Way forward:

- **Establish a Balanced Regulatory Framework:** Policymakers should develop clear guidelines addressing the use of copyrighted material by AI platforms, incorporating provisions for text and data mining (TDM) and fair use exceptions.
- **Promote Collaborative Licensing Models:** Media organisations and AI firms should work towards formalised licensing agreements that outline terms for the use of copyrighted content in AI training.

19. Barriers to space sustainability

- The growing reliance on space technologies for climate monitoring highlights urgent environmental concerns, including **orbital debris** and **system interference**, necessitating swift international regulations to ensure sustainable space exploration practices.

Rockets affect on the environment

- **Emissions from Launches:** Every rocket launch releases significant amounts of carbon dioxide, black carbon, and water vapour into the atmosphere. Black carbon is particularly concerning as it absorbs sunlight much more effectively than carbon dioxide, exacerbating global warming.
- **Ozone Layer Depletion:** Rocket propellants, especially those containing chlorine-based chemicals, contribute to the depletion of the ozone layer at high altitudes. This increases ground-level exposure to ultraviolet radiation and disrupts atmospheric circulation, negatively impacting global climate.
- **Satellite Ash:** When satellites re-enter the atmosphere at the end of their missions, they burn up and release metallic ash into the middle layers of the atmosphere, which can harm the atmosphere and potentially alter climate patterns.
- **Space Mining Potential:** Future activities such as space mining could lead to increased industrial activity both in space and on Earth, further contributing to environmental impacts.

Barriers to space sustainability

- **Lack of Regulation:** Current space activities operate outside international sustainability frameworks like the Paris Agreement. There are no clear guidelines for emissions from rockets and satellites, allowing unchecked growth that contributes to global warming.
- **Overcrowding in Low Earth Orbit (LEO):** The increasing number of satellites and debris threatens to overcrowd LEO, making future missions more expensive and complicating access to space as a shared resource.

- **Need for International Cooperation:** Effective regulation requires collaboration through international bodies like the **Committee on the Peaceful Use of Outer Space (COPUOS)** to create enforceable standards for emissions and debris management.
- **Outdated Treaties:** Existing frameworks such as the **Outer Space Treaty** lack binding provisions that address environmental impacts, limiting their effectiveness in promoting responsible space use.

What would be the innovative solutions?

- **Reusable Rockets:** Developing reusable rockets can significantly reduce manufacturing waste and lower costs by allowing components to be used in multiple missions. However, these rockets may be heavier, increasing fuel consumption, and require costly refurbishments.
- **Cleaner Fuels:** Transitioning to cleaner fuels such as **liquid hydrogen or biofuels** can minimize harmful emissions during launches. However, current hydrogen production methods often rely on non-renewable energy sources, undermining its environmental benefits.
- **Biodegradable Satellites:** Designing satellites with biodegradable materials that disintegrate upon re-entry could help prevent long-term debris accumulation. However, these materials currently lack durability for space conditions and face high development costs.

Way forward:

- **Establish Binding International Frameworks:** Governments should collaborate through COPUOS and other international platforms to create enforceable regulations for emissions, debris mitigation, and sustainable practices in space exploration.
- **Promote Innovation Through Incentives:** Public and private entities should prioritize funding for green technologies, such as cleaner fuels, biodegradable satellites, and debris removal systems. Financial incentives like subsidies, tax benefits, or penalties can accelerate the adoption of sustainable practices in the space sector.

20. Importance of Commercialization in India's Space Sector

- In order to secure strategic autonomy in its access to outer space, it's high time for India to tap the potential of private players in space sector.

Commercialization of space sector in India

- Commercialization in India's space sector refers to the increasing involvement of private companies in space activities.
- It is enabled by policy changes that allow them to develop and launch satellites, provide space-based services, and compete in the global market.
- **Antrix Corporation Limited (ACL)** – It was established in 1992 is a wholly owned Government of India Company under the administrative control of the **Department of Space**.
- It is the Marketing arm of ISRO for promotion and commercial exploitation of space products, technical consultancy services and transfer of technologies developed by ISRO.
- **NewSpace India Limited (NSIL)** – It is established in 2019 as a public sector undertaking of the Government of India.
- To spearhead commercialization of space products including production of launch vehicles, transfer to technologies and marketing of space products.

Importance of commercialization of the space sector

- **Developing reusable & heavy lift capability rockets** – As India is still depend on foreign nation in launching heavy satellites, there is a need for indigenous reusable and heavy lift capability rockets.
- For instance, GSAT-N2 is a communication satellite built by ISRO was launched on SpaceX's Falcon 9 rocket.
- **Economic growth** – India's space industry, valued at approximately **7 billion USD**, has the potential to grow exponentially through increased private sector participation.
- **Global competitiveness** – India's cost-effective launch capabilities, demonstrated by missions like Chandrayaan-3 and Mangalyaan, make it an attractive destination for international satellite launches.
- Expanding these services commercially can enhance India's share in the 440 billion USD in global space economy.
- **Job Creation and Skill Development** – The growth of private space firms will create jobs in aerospace engineering, satellite design, and data analytics.
- **Strategic independence** – Commercialization reduces reliance on foreign providers for satellite services and technologies, strengthening India's autonomy in critical areas such as communication, navigation, and defense.

Measures needed

- **Strengthen policy framework** – The government must implement further supportive policies to encourage private sector involvement.
- **Providing milestone-based funding mechanisms** – It can reduce risks on private players as funding will be provided only after they meet certain objectives at every stage.

- It will ensure accountability and reduce cost overruns.
- **Leveraging the private industrial base** – In parallel to developing the NGLV, the Department of Space can give out contracts for reusable, heavy-lift rockets to capable private players to foster competition and capacity-building.

21. Suggested measures taken by the Indian Government to tackle Global water crisis.

- Recent report by Global Commission on the Economics of Water, predicts that by 2050, the lower-income countries will suffer GDP losses due to water crisis.

Status of global water crisis

- **Water crisis** – Annual per-capita water availability of less than 1700 cubic meter is considered as water stress condition.
- Whereas annual per-capita water availability below 1000 cubic meters is considered as a water scarcity condition.
- **UN report** – By 2050 nearly 4 billion people could live in areas under severe water stress.
- **Status in India** – The average annual per capita water availability for year 2021 and 2031 has been assessed as 1486 cubic meter and 1367 cubic meter respectively.
- **SDG 6** – It seeks to ensure the availability and sustainable management of water and sanitation for all.

Impacts of waters crisis

- **Imbalance in global water cycle** – It is vital for **generating rainfall**, as well as for mitigating climate change and ensuring economic stability.
- **Agricultural loss** – More than half the world's food production will be at risk of failure within the next 25 years.
- **Impact on human development** – Water scarcity directly affects health, food security and poverty alleviation. Increases the vulnerability of communities to health issues due to lack of clean water.
- **Hindrance to SDG** – Without sufficient water, efforts to achieve key SDGs are compromised.

Suggested measure by the report to tackle water crisis

- **Redefine water governance** – The report offered a new perspective on just access to water for dignified life, adequate nutrition and consumption requires a minimum of about 4,000 liters per person per day.

- According to the World Health Organization (WHO), 50- 100 liters per day is required to meet essential health, hygiene needs.
- **Shift in perspective** – To properly recognize water scarcity and take water as public commodity rather than a personally owned commodity
- **Conserving natural habitats** – Act seriously to meet the 30% target for the restoration of degraded forests and inland water ecosystems

Measures taken by Indian government

- **Jal Jeevan Mission** – Aimed at providing tap water to every rural household by 2024.
- **AMRUT 2.0** – To ensure water supply in statutory towns across the country.
- **Pradhan Mantri Krishi Sinchayee Yojna** – For optimal usage of water in agricultural irrigation.
- **Atal Bhujal Yojna** – Sustainable management of groundwater resources in water stressed blocks.
- **National Perspective Plan** – To improve water availability by transferring water from surplus basins to deficit basins.
- **Sahi Fasal** – Encouraging farmers to grow water efficient crops.

Way forward

- To create a Global data infrastructure for better predictions of water-related risks and enabling informed policy decision.
- Mission-driven approach that engages all stakeholders to work in achieving common goal to tackle water crisis.
- Restoring Ecosystems by investment in green water conservation.

22. What can Delhi learn from the Beijing experience in Air quality Index

- In 2015, Beijing had an annual average Air Quality Index (AQI) of 144, comparable to Delhi's current average of 155 in 2024. However, Beijing has since achieved a one-third reduction in its pollution levels, with the most notable decline occurring between 2013 and 2017.

Beijing in the context of Delhi

- The comparison between Beijing and Delhi is significant due to their shared status as capitals of emerging economies facing severe air pollution challenges.
- **Similar Pollution Levels:** In 2015, Beijing had an average AQI of 144, comparable to Delhi's current average of 155 for 2024. This similarity highlights the potential for improvement in Delhi, as Beijing has successfully reduced its pollution levels significantly since then.

- **Common Sources of Pollution:** Both cities experience high pollution from similar sources, including vehicular emissions, coal combustion, and industrial activities. The regional contributions to air quality issues are also significant in both cases, particularly during winter months.
- **Need for Collective Action:** Just as Beijing required a coordinated effort across its region to combat pollution, Delhi must engage neighboring areas in a collective strategy to effectively address its air quality crisis.

What did Beijing do and how did it achieve it?

- **Phased and Strategic Planning:** Implemented a 20-year anti-pollution programme in three phases (1998-2017) with local government autonomy and public participation to ensure gradual and sustainable progress.
- **Energy Sector Transition:** Shifted from coal to cleaner energy by renovating power plants, eliminating coal boilers, and replacing residential coal heating, reducing major emissions.
- **Transportation Reforms:** Upgraded public transport infrastructure, introduced emission controls in vehicles, and phased out polluting vehicles with subsidies, reducing transportation-based pollutants.
- **Regional Collaboration and Investment:** Partnered with five neighboring provinces for coordinated pollution control and increased financial investment sixfold to implement targeted measures effectively.
- **Financial Investment:** A sixfold increase in investment over four years supported these initiatives, allowing for significant infrastructure improvements and regulatory enforcement.

What can Delhi learn from the Beijing experience

- **Integrated Public Transport System:** Establishing an efficient bus-metro system to reduce reliance on private vehicles is essential. Upgrading the bus fleet and enhancing last-mile connectivity can significantly improve public transport accessibility.
- **Energy Transition:** Similar to Beijing's shift away from coal, Delhi should diversify its energy sources by promoting renewable energy options like solar power while reducing dependence on coal-fired plants.
- **Regional Coordination:** Pollution control efforts should extend beyond city limits to include neighboring regions, fostering collaboration similar to Beijing's regional initiatives.
- **Public Advocacy for Clean Air:** Encouraging citizen engagement in demanding accountability from the government can build political will for implementing necessary changes.

- **Political Will and Consistency:** Addressing air pollution requires sustained political commitment and a long-term action plan rather than ad hoc measures that fail to tackle root causes.

Way forward:

- **Strengthen Policy Implementation and Regional Collaboration:** Formulate and enforce a comprehensive, long-term pollution control policy with coordinated efforts involving Delhi and its neighboring states to address regional pollution sources effectively.
- **Promote Sustainable Infrastructure and Public Engagement:** Invest in renewable energy, green public transport, and urban planning while fostering public participation and advocacy for clean air to ensure accountability and sustained progress.

23. Significance of Artificial Solar Eclipse

- The European Space Agency launched Proba-3 from India to create artificial solar eclipses for extended Sun corona studies using precise formation flying.

Artificial Solar Eclipse

- **Definition:** An artificial solar eclipse mimics the natural phenomenon where the moon blocks sunlight, allowing detailed observation of the Sun's corona.
- **Created By:** Two satellites align to block the Sun's light, creating a controlled shadow for scientific study.
- **Purpose:** To observe the Sun's corona and study phenomena such as why it is hotter than the Sun's surface.

How Artificial Solar Eclipse Works

- **Satellite Pair:** Two satellites – the Coronagraph Spacecraft (CSC) and the Occulter (OSC) – maintain precise alignment to simulate an eclipse.
- **Shadow Creation:** The Occulter spacecraft casts a shadow onto the Coronagraph spacecraft, mimicking the moon's role in a natural eclipse.
- **Precision:** Millimetres-level accuracy ensures a consistent eclipse for up to six hours per orbit.

Significance of Artificial Solar Eclipse

- **Extended Observations:** Enables studying the Sun's corona for hours, unlike natural eclipses, which last only minutes.
- **Space Weather Predictions:** Helps predict geomagnetic storms and mitigate disruptions to satellites and Earth-based systems.

- **Scientific Insight:** Unveils the mysteries of the corona, including its temperature anomaly and solar flares.

Precise Formation Flying (PFF) Technology

- **Definition:** A technology that enables satellites to maintain an exact position and orientation relative to each other in orbit.
- **Mechanism:** Uses GPS, inter-satellite radio links, and automated control systems for alignment.
- **Implementation in Proba-3:** The satellites stay 150 meters apart, maintaining millimetre-level precision to simulate an eclipse.
- **Benefits:** Enhances mission accuracy and provides a platform for advanced observational techniques.

24. India's Progress in Quantum Satellite Technology

- India is advancing rapidly in the field of **quantum communication** by preparing to launch its **first quantum satellite**. This move will place the country among an elite group capable of **creating a hack-proof communication network**. Concurrently, **Google's new quantum processor, Willow**, has garnered attention for its groundbreaking advancements in quantum computing, offering insights into the future of technology.

National Quantum Mission (NQM):

- The **National Quantum Mission (NQM)** aims to foster the development of quantum computing, communication, measurement, and sensing technologies.
- Implementation: By the **Department of Science & Technology (DST), Ministry of Science & Technology**.
- Timeline: **2023–2031**.
- Focus Areas: **Development of Quantum Computing, Quantum Communication, Quantum Sensing, and Quantum Materials**.
- Building infrastructure for **high-performance quantum computers (up to 1,000 qubits)** and satellite-based secure quantum communications across India.

Satellite-Based Quantum Communication:

- A quantum satellite is expected to be launched within 2–3 years by the **Department of Space**.
- Enables **secure communication** over large distances using **quantum principles**.
- **Quantum Satellites** for transmitting **entangled photons to ground stations**.

- Integration of **QKD** for secure global communication.
- **Applications:** National security, secure diplomatic exchanges, and encrypted data transmission

Quantum Key Distribution (QKD):

- A secure **communication method using quantum mechanics** to encrypt and exchange keys between two parties.
- **Immune to traditional hacking techniques.**
- Detection of any **eavesdropping attempts.** Quantum satellites use QKD to **securely transfer encrypted information** over vast distances.
- India plans to establish secure quantum communication links between ground stations over a range of **2,000 km** domestically and internationally.

Qubit:

- The **basic unit of quantum information**, analogous to a bit in classical computing but capable of existing in a **superposition of states (0 and 1 simultaneously).**
- Exploits phenomena like **entanglement** and **superposition** for superior computational power.

25. Jalvahak scheme

- The Union government on Sunday launched the Jalvahak scheme to incentivize cargo movement via inland waterways.
- **Launched by** – Ministry of Ports, Shipping & Waterways.
- **Objectives** – To incentivize cargo movement via inland waterways.
- To unlock the trade potential of inland waterways while reducing logistics costs and decongesting road and rail networks.
- To optimise supply chains for major shipping companies, freight forwarders, and trade bodies.
- **Implementing agency**
 - Inland Waterways Authority of India (IWAI)
 - Inland & Coastal Shipping Ltd. (ICSL)
- **Budget** – Investment of Rs 95.4 crores for 3 years.
- **Coverage** – National Waterways (NW)
 - **NW1** – River Ganga
 - **NW2** – River Brahmaputra
 - **NW16** – River Barak
- National Waterways are artificial or natural water channels developed and maintained by Inland Waterways Authority of India (IWAI) for transport of

both passengers and cargo. Currently there are 111 approved water ways and 13 operationalized water ways.

- **Target** – 200 million metric tons (MT) cargo movement by 2030 and 500 MT by 2047.
- **Incentives** – Up to 35% reimbursement on operating costs for Cargo owners transporting goods over 300 km via waterways

26. India's Initiatives in Carbon Markets:

- With COP29 approving standards for establishing an international carbon market, countries aim to create a structured mechanism for trading carbon credits and offsets to meet their climate goals effectively.
- A **carbon market** enables the trading of carbon credits, granting the holder the right to emit one tonne of carbon dioxide (CO₂) or its equivalent.
- These markets operate on the principle of limiting emissions and allocating rights through tradable credits or offsets.
- **Origin:** Introduced in the U.S. during the 1990s under the cap-and-trade system for controlling sulphur dioxide emissions.

Working of a Carbon Market:

1. **Issuance of Carbon Credits:** Governments allocate a limited number of carbon credits, restricting total emissions. Each credit permits the emission of one tonne of CO₂.
2. **Trading:** Companies that need more credits can buy from those with surplus. Market forces determine the price based on supply and demand.
3. **Offsets:** Companies purchase offsets by funding activities like afforestation or renewable energy projects to balance their emissions.
4. **International Mechanism:** Articles 6.2 and 6.4 of the Paris Agreement allow cross-border trading of emission reductions.

India's Initiatives in Carbon Markets:

- **Perform, Achieve, Trade (PAT) Scheme:** Targets industries to improve energy efficiency and trade surplus credits.
- **Renewable Energy Certificates (REC):** Facilitates trade in renewable energy to meet energy compliance targets.
- **Energy Conservation Act, 2022 Amendment:** Introduced a domestic carbon trading market to incentivize low-carbon technologies.
- **Climate Action:** Committed to a 45% reduction in emission intensity by 2030 as part of its Nationally Determined Contributions (NDCs).

Limitations of Carbon Markets:

1. **Loopholes:** Lack of stringent monitoring can lead to fraudulent claims or over-allocation of credits.
2. **Price Volatility:** Fluctuating credit prices can create market uncertainty.
3. **Limited Impact on Emission Levels:** Without strong caps, markets may fail to drive significant reductions.
4. **Accessibility Issues:** Small businesses and developing countries may struggle to participate effectively.
5. **Criticism of Offsets:** Offsets are seen as superficial solutions that don't address the root cause of emissions.

Way Ahead:

- **Stricter Regulations:** Enforce robust monitoring and verification to prevent misuse.
- **Capacity Building:** Support developing countries in accessing carbon markets effectively.
- **Incentives for Green Projects:** Encourage innovative projects to offset emissions.
- **Transparency:** Ensure clear guidelines and public reporting of emissions and credits.

Conclusion:

- Carbon markets offer a promising mechanism to reduce emissions and achieve global climate targets. However, addressing regulatory gaps, ensuring equity, and fostering international cooperation are essential to maximize their potential and ensure sustainable outcomes.

27. Labour committee asks Centre to increase minimum PF pension

- The **Parliamentary Standing Committee on Labour**, led by **Basavaraj Bommai**, has recommended an increase in the **minimum pension** provided by the **Employees Provident Fund Organisation (EPFO)** under the **Employees Pension Scheme (EPS)**.
- This recommendation was made after considering the demands from **trade unions** and **pensioner associations** for a revision of the pension amount.

Issues with current Pension system:

- Under the **EPS**, the **minimum pension** has been fixed at **₹1,000 per month** since 2014.
- In 2023-24, there were **20,64,805 pensioners** receiving the minimum pension of ₹1,000 per month.

- Over a decade has passed since this amount was set, and the Committee acknowledged that the **cost of living has significantly increased** in 2024 compared to 2014.
- In response to concerns raised by various stakeholders, including pensioners and trade unions, the Committee recommended a **revision** of the minimum pension amount.

Employees' Pension Scheme (EPS):

- EPS was introduced in 1995 and is **administered by the Employees' Provident Fund Organisation (EPFO)**, under the Ministry of Labour and Employment.
- It provides pension benefits to employees in the **organized sector** upon retirement.
- Employees who are members of the Employees' Provident Fund (EPF) automatically become members of EPS.
- Both employer and employee contribute **12% of the employee's monthly salary** (basic wages plus dearness allowance) to the EPF scheme.

Government contribution:

- The government contributes **16% of wages** to the EPS, with a **wage ceiling of ₹15,000 per month**. A **grant-in-aid** is provided to cover the difference between the minimum pension of 1,000 and the actual pension that members receive.

Implementation of Labour Codes:

- The Committee also addressed the delay in the implementation of the **four Labour Codes**, which are still pending.
- The report emphasized that it is the **statutory obligation of States and Union Territories (UTs)** to prepare the necessary rules for the implementation of these codes.

Parliamentary Committees:

- Indian Constitution mentions two kinds of Parliamentary Committees: **Standing Committees** and **Ad Hoc Committees**.
- The Standing Committees are permanent (constituted every year or periodically) and work on a continuous basis, while the Ad Hoc Committees are temporary and cease to exist on completion of the task assigned to them.
- The report of the committee is of a **recommendatory nature**. The government can choose to accept or reject its recommendations.

28. Wage disparities in India

- India's low wages pose a significant challenge, but adopting a ground-level perspective on employers' daily realities highlights policy measures to increase the number of high-productivity employers.

Root causes of the current wage stagnation in India

- **Economic Structure:** The shift from agriculture to non-farm jobs has not been accompanied by a corresponding increase in productivity. Despite significant government spending, the flow of jobs since 1991 has not reduced farm employment, leading to wage stagnation in rural areas.
- **Global Economic Changes:** Manufacturing jobs have become less labour-intensive because of automation, resulting in fewer jobs per unit of investment. Additionally, rising tariffs and a weaker global growth outlook contribute to wage stagnation.
- **Regulatory Environment:** The existing regulatory framework creates barriers for entrepreneurs, leading to a lack of job creation in higher-paying sectors. The complexity and rigidity of regulations discourage investment in productive enterprises.
- **Skill Mismatch:** There is a disparity between the skills available in the labour market and those demanded by employers. Many workers remain under-skilled for the higher-paying jobs that are available, perpetuating low wages.

Living wage system

- A **living wage system** ensures workers earn enough to meet basic needs like food, housing, healthcare, and education, enabling a decent standard of living beyond mere subsistence wages.
- **Policy Framework:** Establishing a clear definition of what constitutes a living wage based on local cost of living metrics is essential. This framework should be adaptable to different regions and sectors.
- **Incentives for Employers:** Providing tax breaks or subsidies for businesses that pay living wages can encourage compliance and support workers' livelihoods.
- **Strengthening Labor Rights:** Ensuring robust enforcement of labor laws that protect workers' rights to fair wages and safe working conditions is crucial for implementing a living wage system effectively.
- **Public Awareness Campaigns:** Educating both employers and employees about the benefits of a living wage can help shift perceptions and practices within the workforce.

Wage disparities in India

- **Gender Wage Gap:** According to the Global Gender Gap Index 2024, Indian women earn only 40 for every 100 earned by men, highlighting a significant gender pay disparity.
- The economic gender parity level in India is recorded at 39.8%, indicating that while some progress has been made, substantial gaps remain in economic participation and remuneration between genders.
- **Regional Wage Disparities:** The average daily wage for casual workers in rural areas is approximately 104, significantly lower than the national average of ₹247 per day for all workers.
- **Wage Inequality Metrics:** The Gini coefficient for wages in India stands at 0.49, indicating a high level of wage inequality. The D9/D1 wage ratio, which compares the earnings of the top 10% to the bottom 10%, is 6.7, underscoring the stark contrast in earnings across different segments of the workforce.

Way forward

- **Rationalisation of Regulations:** Streamlining regulatory frameworks to reduce bureaucratic hurdles can encourage entrepreneurship and job creation. This includes removing unnecessary jail provisions that deter business operations.
- **Investing in Human Capital:** Prioritizing skill development programs aligned with market demands can boost employability and empower workers to secure higher-paying jobs.
- **Encouraging Non-Farm Employment:** Policies should focus on fostering private, productive non-farm jobs through digitisation and formalization, paving the way for better wages.
- **Strengthening Redistribution Mechanisms:** Adopting progressive taxation on higher profits can fund social programs designed to uplift wage levels across different sectors.
- **Fostering Long-Term Economic Planning:** Crafting a comprehensive economic strategy aligned with labour market needs is essential for ensuring sustainable wage growth and effectively addressing disparities.

29. Key findings of NEXUS report

- A first-of-its-kind **IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) Nexus report** emphasizes the **interconnectedness** of five major challenges: **climate change, biodiversity loss, food insecurity, water scarcity, and health risks**. Addressing these challenges in isolation is not only ineffective but also counterproductive.

Key Findings of the Nexus Report:

- **Interlinkages of Crises:** Economic activities harm biodiversity, climate, food production, water, and health, with unaccounted costs of **\$10-25 trillion annually**. Actions addressing one challenge may negatively impact others (e.g., scaling food production can stress water, land, and biodiversity).
- **Synergistic Solutions:** Over **70 response options** were identified with positive outcomes across multiple elements. Examples: **Restoration** of carbon-rich ecosystems (forests, soils, mangroves). **Nature-based solutions** for sustainability. **Sustainable diets** and managing biodiversity to reduce disease risks. Emphasis on **sustainable production and consumption**, ecosystem conservation, pollution reduction, and climate mitigation.
- **Economic Impacts of Biodiversity Decline:**
 - Over **50% of global GDP** (~\$58 trillion annually) depends on nature.
 - Biodiversity loss (2-6% per decade) directly reduces productivity.
 - Trillions of dollars in incentives still support biodiversity-harming activities.
- **Urgency of Action:** Delaying action will **double costs in a decade**. Immediate action could generate: **\$10 trillion in business opportunities. 400 million jobs** by 2030 through nature-positive economic models.

IPBES

- **IPBES** (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) is the equivalent of the **Intergovernmental Panel on Climate Change (IPCC)** for biodiversity and ecosystems.
- While the **IPCC** focuses on climate change, **IPBES** periodically evaluates existing scientific knowledge on biodiversity and ecosystems to make comprehensive assessments but does not produce new research.
- **Key Facts about IPBES:** Established in **2012**, it informs major environmental agreements, such as: UN Convention on Biological Diversity (CBD) Convention on Combating Desertification (CCD). Ramsar Convention on Wetlands. Cartagena Protocol on Biosafety

30. Country Climate and Development Reports (CCDRs)

- The World Bank Group's report "People in a Changing Climate" was launched at the COP29 in November 2024.
- **CCDR** - Country Climate and Development Reports was launched in 2022 by World Bank.
- **Objective** - To guide countries in aligning developmental processes with climate action.

- They help countries prioritize the most impactful actions that can reduce greenhouse gas (GHG) emissions and boost adaptation and resilience, while delivering on broader development goals.
- **Coverage** - It covers 72 low-, middle- and high-income countries and economies.
- **Stakeholders** - CCDRs unite stakeholders, including governments, private sectors and citizens, to advance climate and development goals.

Observations of the report

- **Resilience and adaptation** - Ending poverty on a livable planet requires all countries to enhance the resilience and adaptation of their people and economies to the impacts of climate change.
- **People centric** - People are at the center of climate change risks, but also at the core of adaptation and mitigation solutions.
- **Disproportionate impact** - Poorer countries are more vulnerable than richer ones, are exposed to different threats, and have lower adaptation potential.
- **Effect of investment in water sector** - An investment of \$1.8 trillion in the water sector would result in estimated benefits worth \$7.1 trillion between 2020 and 2030.

Significances of water in addressing climate change?

- **Climate change and water** - Climate change affects the availability of water and leads to extreme events such as droughts and floods.
- **Impact of drought** - During droughts, agriculture, energy production, food security are impacted.
- These lead to migration and malnutrition, especially in low-income countries.
- **Impact of flood** - Flood situations lead to loss of lives, water-borne diseases, displacement of people and infrastructural damage.
- **Impact on economy** - Both of these situations deal a blow to the economy of affected countries, with a disproportionate impact on vulnerable groups.

Recommendations of the report

- Enact policies focused on people, resilient infrastructure and macroeconomic strategies to reduce vulnerabilities.
- Foster green value chains, and support sustainable transitions with global collaboration.
- Create country-specific solutions for boosting water resources management and building climate resilience.
- Increase investment water resources management and bringing in reforms in institutional regulatory sectors.