

WEEKLY UPDATES

DATE : 16th – 22nd September

POLITY & GOVERNANCE

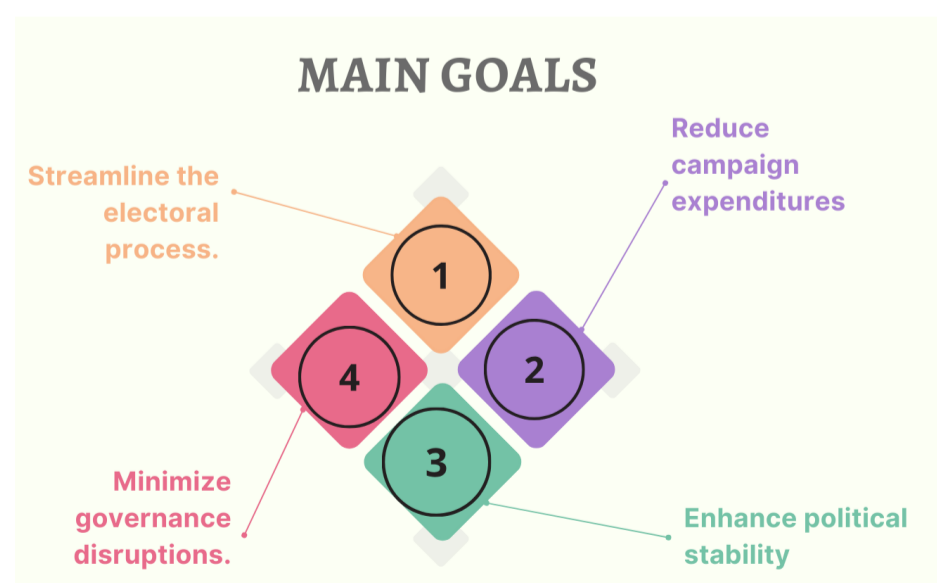
Cabinet Approved to Hold Simultaneous Elections

Context:

The **Union Cabinet** has approved a proposal to hold **simultaneous elections** for the **Lok Sabha**, **state Assemblies**, and **local bodies**, based on recommendations from the **Kovind Committee**. This move is aimed at streamlining the electoral process and minimizing disruptions to governance.

Main Points of the Proposal:

- 1) **Simultaneous Elections:** Elections for the **Lok Sabha**, state legislative assemblies, and local government bodies will be held together.
- 2) **Two Phases:**
 - a. **Phase 1:** Align elections for the **Lok Sabha** and **state Assemblies**.
 - b. **Phase 2:** Conduct **local body elections** within **100 days** of the first phase.
- 3) **Constitutional Amendments:** **Two constitutional amendments** will be required, which must be passed by a special majority in **both houses of Parliament**.
 - a. **State Ratification:** At least **half of the states** must ratify the amendments.
- 4) **Mid-term Elections:** If a state Assembly or Lok Sabha is dissolved early, the new term will last only until the next scheduled simultaneous election.
- 5) **Single Electoral Roll:** A unified **electoral roll** will be created for all elections, in consultation with **State Election Commissions**.
- 6) **Dissolution of Assemblies:** Some state Assemblies may dissolve earlier than their five-year term to align with the simultaneous election schedule.



7) **Election Commission's Role:** The **Election Commission of India (ECI)** can recommend delaying state elections but must align them with future simultaneous elections.

What is One Nation, One Election (ONOE)?

One Nation, One Election (ONOE) is a proposal to synchronize the timing of all elections in India, including the **Lok Sabha, state legislative assemblies, and local bodies**. The main goals are to:

Enhance political stability by holding elections once every five years.

ONOE was the norm until **1967**, but the cycle was disrupted thereafter.

Constitutional Articles Involved:

Article	Description
Article 324A	Vesting authority in the Election Commission to supervise and control elections for Parliament, state legislatures, and other offices. The committee suggests including Article 324A to ensure municipality and panchayat elections are held simultaneously.
Article 83 and 172	These articles specify the five-year term for the Lok Sabha and state legislative Assemblies . Amendments are needed to synchronize elections.
Article 325	Prohibits the exclusion of individuals from the electoral roll based on religion, race, caste, or sex . An amendment is needed for a single electoral roll, requiring state ratification .
Articles 328 and 327	Relates to the power of state legislatures in making provisions for elections. No state ratification is required for simultaneous polls, as Parliament holds power.

Benefits of One Nation, One Election:

- 1) **Reducing Election Expenditure:** Conducting simultaneous elections reduces costs related to **logistics, security, and campaigning**.
 - a. Example: The **2014 Lok Sabha polls** cost Rs **3,870 crore**, while the **2015 Bihar elections** alone cost Rs **300 crore**.
- 2) **Better Governance:** Reduces disruptions in governance, allowing governments to focus on **development and welfare**.
- 3) **Voter Convenience:** Voters won't need to participate in multiple elections throughout the year, improving **voter turnout and convenience**.
- 4) **Reduced Security Concerns:** Simultaneous elections require a **unified security setup**, improving national security planning.
- 5) **Level Playing Field:** Ensures **equal opportunities** for all parties and candidates, promoting **fairness**.

6) **Reduced Impact on Education:** Decreases the involvement of teachers in the election process, thus minimizing the impact on the **education sector**.

Limitations of One Nation, One Election:

- 1) **Ratification by States:** The requirement for **state ratification** may cause friction between the **Centre** and states. It may also face **judicial review**, as seen in the **Kihoto Hollohan v. Zachillhu (1992)** case.
- 2) **Constitutional Challenges:** Implementing simultaneous elections involves **complex amendments**, requiring consensus among political parties.
- 3) **Anti-Federalism:** Combining Assembly elections with General elections might sideline **regional issues**, undermining local representation.
- 4) **Logistical Complexity:** Managing simultaneous elections requires massive logistical coordination, including **security deployment, electoral roll preparation, and polling booth management**.
- 5) **Dominance by National Parties:** National parties with more resources may dominate, leaving **regional parties** at a disadvantage.
- 6) **Impact on Democracy:** Voters may prioritize **national issues** over **local issues**, diminishing the democratic process.
- 7) **Voter Engagement:** Separate elections allow for more frequent **electoral scrutiny**, holding politicians accountable.

International Experience:

- **South Africa:** Holds national and provincial elections simultaneously, with municipal elections two years later.
- **Sweden:** Holds national, provincial, and municipal elections on the same day every fourth year.
- **Britain:** The **Fixed-term Parliaments Act, 2011** ensures stability by holding elections every five years.

Way Forward:

- The **Parliamentary Standing Committee on Law and Justice** has suggested a **two-phase election schedule**, aligning some state assembly elections with **midterm Lok Sabha elections**. This will allow for a gradual transition to simultaneous polls.
- Implementing **One Year, One Election** may be easier than ONOE and can provide similar benefits.
- Reducing election costs can be achieved by enforcing the **legal cap on candidate expenditure**.

Conclusion:

While the **One Nation, One Election** proposal offers significant benefits, the challenges and practical limitations require **wide political support** and **consensus-based implementation**. Further deliberations

and legislative amendments are essential to ensure successful implementation and to maintain the democratic and federal balance of governance in India.

Addressing Gender Discrimination

Context:

- The **Vice President of India** emphasized the need to shift societal norms, particularly the **male mindset**, to ensure **gender justice** and address **subtle forms of gender discrimination**. He also highlighted the significance of **women's reservation in Parliament**, a move from “**women-development**” to “**women-led development**”, and lauded initiatives like **Beti Bachao Beti Padhao** and **Mudra** schemes for empowering women.

Key Points Highlighted by the Vice President:

- 1) **Change in Male Mindset**: Essential for achieving **gender justice** and reducing inequality.
- 2) **Danger of Subtle Gender Discrimination**: Often unnoticed but deeply ingrained in societal norms.
- 3) **Women's Reservation in Parliament**: A **historic step** in promoting women's participation in politics.
- 4) **Women-led Development**: Advocated a shift from merely developing women to encouraging them to **lead development**.
- 5) **Empowerment Initiatives**: Programs like **Beti Bachao Beti Padhao** and **Mudra** have played a key role in women's empowerment.
- 6) **Breaking the Glass Ceiling**: Encouraged women to **challenge barriers** and excel in leadership roles.
- 7) **Importance of Education**: Stressed that education is the foundation for achieving **gender equality**.

What is Subtle Gender Discrimination?

Subtle gender discrimination refers to indirect and often unnoticed forms of bias against women. Unlike overt discrimination, it is less obvious and can be perceived as normal behaviour or attitudes, but it **reinforces gender inequality**.

Example: A workplace may have equal hiring policies, but women might be overlooked for leadership roles because they are perceived as “less assertive” or “too emotional.” This isn't openly hostile but still undermines equality.

Examples of Subtle Gender Discrimination:

- 1) **Compliments that Reinforce Stereotypes**: Praising a woman for being nurturing may unintentionally undermine her **professional capabilities**.
- 2) **Microaggressions**: Small remarks like suggesting women are less dedicated due to family obligations.
- 3) **Work-Life Balance Assumptions**: Assuming women need more flexibility due to caregiving responsibilities.

- 4) **Interruptions:** Women are more frequently **interrupted** during meetings.
- 5) **Tokenism:** Including a woman on a team just to meet a **diversity quota** without valuing her input.
- 6) **Dress Code Expectations:** Imposing stricter or different dress codes for women, focusing on appearance rather than professionalism.
- 7) **Attributing Success to Luck:** When women succeed, it's often seen as a result of **luck** rather than skill or hard work.

India's Rank on Gender Development:

In the **UNDP Human Development Report 2023-24**, India ranks **108th** out of 193 countries on the **Gender Inequality Index (GII) 2022** with a score of **0.437**. This index measures gender inequality in **reproductive health, empowerment, and labor market participation**. India's improvement from **122nd in 2021** reflects ongoing progress in **gender equality**.

Steps Taken to Curb Gender Discrimination:

- 1) **Equal Remuneration Act (1976):** Aims to reduce the **wage gap** between men and women.
- 2) **Beti Bachao Beti Padhao:** Campaign against **gender bias** and improving **welfare services** for girls.
- 3) **PMEGP (Prime Minister's Employment Generation Programme):** Supports women in starting businesses.
- 4) **Mission Shakti:** Focuses on **safety, security, and empowerment** of women.

Addressing Subtle Gender Discrimination:

- 1) **Blind Evaluation:** Conceal physical attributes like **gender** during job applications to reduce bias.
- 2) **Inclusive Workplace Culture:** Foster a culture that values contributions from all genders equally.
- 3) **Unconscious Bias Assessment:** Use **surveys, language analysis, and pay gap evaluations** to address hidden biases.
- 4) **Male Mindset Change:** Implement **gender sensitization efforts** to address inherent biases.

National Commission for Women (NCW):

- **Established:** Under the **National Commission for Women Act, 1990**.
- **Mandate:** Safeguard and promote **women's rights**, address **gender discrimination**, and ensure their **empowerment**.

Role of NCW:

Role of NCW	Examples
Advancing Women's Rights	Workshops on gender-based violence in rural areas, advocating for the Protection of Women from Domestic Violence Act (2005) .
Addressing Gender-Based Violence	Investigating dowry-related crimes and raising awareness through self-defense sessions .

Promoting Gender Equality	Supporting women in reporting workplace harassment and campaigns for political representation .
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Challenges Faced by NCW:

- 1) **Limited Power and Autonomy**: Lacks authority and autonomy, which limits its effectiveness.
- 2) **Inadequate Response to Violence**: Criticized for not adequately addressing **violence against women**.
- 3) **Patriarchal Attitudes**: Some actions reflect **patriarchal attitudes**, reducing its effectiveness.
- 4) **Lack of Inquiry Power**: NCW cannot conduct its own inquiries, limiting its ability to investigate **gender-based violence**.

Conclusion:

To make the **National Commission for Women (NCW)** more effective, it is recommended to:

- Grant the chairperson the status of **Union Cabinet Minister** and members the status of **Minister of State**.
- Allow the NCW to select its own members and allocate **funds** in both **Union** and **State Budgets** to support its functioning.
- These steps would empower the NCW to better address **gender discrimination** and protect **women's rights** in India.

Contempt Petition: Delay in Judicial Appointments

Context: The **Jharkhand government** has filed a **contempt petition** against the **central government** for delaying the appointment of a new Chief Justice to the **Jharkhand High Court**, as recommended by the **Supreme Court Collegium**. This came up during a **Public Interest Litigation (PIL)** hearing that seeks a **fixed time limit** for judicial appointments.

What is a Contempt Petition?

A **contempt petition** is a legal action filed when someone **disobeys or fails to comply** with a court order or judgment. It seeks to **enforce** the court's decision and hold the violating party accountable. The law categorizes contempt into two types:

- 1) **Civil Contempt**: When a person or entity **willfully disobeys** a court order or **breaches a legal obligation** (e.g., failing to follow a court's judgment).
- 2) **Criminal Contempt**: Involves actions that **obstruct or undermine** the court's authority or dignity (e.g., disrespect in court, interfering with judicial proceedings).

The court can impose **penalties** like **fines** or **imprisonment** to ensure compliance.

INTERNATIONAL RELATIONS

Call for Modification of the Indus Waters Treaty (IWT)

Context: On **August 30, 2024**, India issued a notice to Pakistan seeking modifications to the **Indus Waters Treaty (IWT)**, citing “fundamental changes” in circumstances. This comes after Pakistan’s continuous objections to India’s hydroelectric projects on the **Kishanganga** and **Chenab** rivers.

What is the Indus Waters Treaty (IWT)?

The **Indus Waters Treaty (IWT)** is a water-sharing agreement signed in **1960** between **India** and **Pakistan**, mediated by the **World Bank**. It governs the allocation of water from the **Indus River system**:

- **Western Rivers** (Indus, Jhelum, Chenab): Allocated to **Pakistan**.
- **Eastern Rivers** (Ravi, Beas, Sutlej): Allocated to **India**.

Under the treaty, India can use the Western Rivers for **non-consumptive purposes** like **hydroelectric power generation**, but with certain restrictions.

Dispute Resolution Mechanism:

The IWT provides a three-tiered process for resolving disputes:

- 1) **Permanent Indus Commission (PIC):** A regular forum for discussions, meeting annually to resolve issues.
- 2) **Neutral Expert:** For technical disputes, a neutral expert is appointed.
- 3) **Court of Arbitration:** If disputes remain unresolved, a **seven-member arbitral tribunal** can provide a binding decision.

Current Issue: The ongoing disputes between India and Pakistan primarily concern the design and operation of India’s **Kishanganga** and **Ratle Hydroelectric Projects** on the **Jhelum** and **Chenab** rivers. Pakistan has raised objections, citing potential violations of the treaty.

India’s Arguments for Modifying the IWT:

- 1) **Pakistan’s Obstruction:** Pakistan’s continuous objections to India’s hydroelectric projects have led to delays and stalling of development.
- 2) **Failure to Use Dispute Mechanisms Properly:** Pakistan’s unilateral request for a **Court of Arbitration**, bypassing the neutral expert process, violates the dispute resolution sequence.
- 3) **Outdated Provisions:** The treaty was signed in 1960 and does not account for modern geopolitical, environmental, and technological changes. India asserts that these “fundamental changes” justify revisiting the treaty.

- 4) **Contradictory Legal Outcomes:** Running **Neutral Expert** and **Court of Arbitration** processes in parallel risks conflicting decisions, creating legal confusion.
- 5) **Security Concerns:** In the aftermath of terrorist attacks like the **2016 Uri attack**, India has expressed concerns about continuing cooperation under the treaty, famously stating that “blood and water cannot flow together.”

Other Issues with the IWT:

- 1) **Challenges for New Power Projects:** The ongoing dispute hampers the establishment of new power projects on the rivers governed by the treaty.
- 2) **Limited Water Usage in Jammu and Kashmir:** The treaty restricts the use of Western River waters, limiting their availability for **agricultural** and **domestic** purposes.
- 3) **Lack of Collaboration:** Trust between the two nations has eroded, leading to inconsistent collaboration, data sharing, and joint efforts in water management.
- 4) **Inadequate Dispute Resolution Mechanism:** Pakistan has frequently called for international arbitration whenever India proposes a hydroelectric project.
- 5) **Climate Change Impact:** The treaty does not consider the effects of **climate change**, which is increasingly affecting the water flow of the Indus River system.
- 6) **Groundwater Not Covered:** The treaty only addresses **surface water** but fails to regulate the use of **groundwater**, a resource that is being increasingly depleted.

Way Forward:

- 1) **Negotiation and Dialogue:** Continue using established mechanisms like the **Permanent Indus Commission (PIC)** to resolve disputes through direct talks.
- 2) **Technical Solutions:** Involve **technical experts** to address concerns over design and construction issues, as was done with the **Baglihar Dam** case.
- 3) **Mediation:** Consider third-party mediation from international organizations such as the **World Bank** if bilateral talks fail.
- 4) **Legal Recourse:** If necessary, unresolved disputes can be referred to the **Court of Arbitration** after failed negotiations or mediation.
- 5) **Long-term Solutions:** Broader political engagement is necessary to address the root causes of tensions over water-sharing between India and Pakistan.

Conclusion:

The **Indus Waters Treaty** has functioned well despite strained bilateral relations, but the rising complexities of the 21st century necessitate a renegotiation. Both nations need to update the treaty to reflect modern realities, such as **climate change**, **regional security**, and **technological advancements**. By

adopting a cooperative approach, both India and Pakistan can ensure that their shared water resources are equitably managed and sustainably utilized for the future.

Turkey's BRICS Bid: A Balancing Act Between the East and the West

Context: Turkey's Bid: Turkey's desire to join BRICS may be a political maneuver to gain leverage in its stalled EU accession process or express frustration with the EU.

Benefits of BRICS Membership for Turkey:

- **Global Influence:** Increases Turkey's stature on the global stage.
- **Economic Cooperation:** Offers economic ties with key emerging markets.
- **Political Leverage:** Strengthens Turkey's position in EU negotiations.

Concerns Regarding Turkey's Bid:

- **EU and NATO Relations:** Risks straining Turkey's relationship with the EU and NATO.
- **Credibility:** May reduce Turkey's standing within Western alliances.
- **Isolation:** Possibility of diplomatic isolation from Western powers.

India's Stance on BRICS Expansion:

- **Support for Expansion:** India welcomed BRICS expansion during the 15th BRICS summit in Johannesburg.
- **Strengthening BRICS:** Enhances BRICS' representation of developing countries.
- **Future Initiatives:** India proposed initiatives like BRICS space consortium, technology cooperation, and skill development.
- **Aim:** Focus on making BRICS future-ready through digital solutions, development, and cooperation.

Significance of Expansion for India:

- **Geopolitical Influence:** Expands partnerships and influence.
- **Pro-China Concerns:** Potential pro-China dominance within the expanded BRICS.

BRICS Overview:

- **Founded:** 2009, HQ in Shanghai.
- **Origin:** Term coined by British economist Jim O'Neill in 2001.
- **Members:** Brazil, Russia, India, China, and South Africa.
- **Global Share:** 41% of the global population, 24% of global GDP, and 16% of global trade.
- **Chairmanship:** Rotated annually among members; South Africa is chair for 2023.

- **Key Initiatives:** New Development Bank, Contingent Reserve Arrangement, BRICS Payment System, Customs Agreements, and Remote Sensing Satellite.
- **New Currency:** Proposal to launch a new currency, advancing de-dollarization efforts.

Importance of BRICS for India:

- **Geo-Political Balance:** Helps India balance between US interests and Russia-China axis.
- **Economic Policy Role:** Plays a key role in shaping global economic policies within the G20.
- **Voice for Developing Nations:** Represents developing countries' rights.
- **Anti-Terrorism Platform:** Provides a platform for India's anti-terrorism efforts.
- **Engagement with China:** A venue for engagement with China and resolving mutual disputes.

Challenges Faced by BRICS:

- **Economic Divergence:** Uneven growth among members, with Brazil, Russia, and South Africa facing economic struggles.
- **Political Differences:** Conflicts such as Russia's annexation of Crimea and China's territorial claims strain intra-BRICS relations.
- **Institutional Constraints:** Issues with BRICS' financial institutions like the New Development Bank.
- **Coordination Issues:** Disagreements over governance structures and differing priorities.
- **External Pressures:** Global rise of protectionism and populism challenges BRICS' efforts.

Way Forward for BRICS:

- **UN Reform:** Joint advocacy for UN Security Council reforms, increasing developing countries' representation.
- **Combat Terrorism:** Sharing best practices and intelligence among BRICS countries to fight terrorism.
- **Technological Solutions:** Cooperation in promoting digital solutions to achieve Sustainable Development Goals (SDGs).
- **People-to-People Cooperation:** Expanding cultural, educational, and tourism exchanges.

Conclusion:

While Turkey's BRICS membership may enhance its global standing, it risks further straining relations with the EU and NATO, potentially leading to diplomatic isolation. Turkey's strategic location, however, ensures that its foreign policy remains a complex balancing act between East and West.

DEFENCE & SECURITY

3rd Edition of the INDUS-X Summit

Context: The **INDUS-X Summit** highlighted the growing collaboration between **India and the U.S.** in defence innovation.

Organizers: The event was organized by the **U.S.-India Strategic Partnership Forum (USISPF)** and **Stanford University**.

Key Highlights:

- 1) **MoU Signed:** A **Memorandum of Understanding (MoU)** was signed between India's **iDEX (Innovations for Defence Excellence)** and the **U.S. Defence Innovation Unit (DIU)** to strengthen cooperation in defence technologies and foster **industry-research partnerships**.
- 2) **INDUS-X Challenge:** A new **INDUS-X challenge** was announced to encourage innovative defence solutions.
- 3) **Impact Report:** The **INDUS-X Impact Report** was released, documenting the progress and impact of the initiative.
- 4) **Webpage Launch:** An official **INDUS-X webpage** was launched on the **iDEX** and **DIU** websites to provide information and updates.

Showcasing Technologies: The summit provided a platform for **startups** and **MSMEs** to showcase next-generation defence technologies and innovations.

Discussions: Discussions at the summit focused on key topics like **technology trends**, **funding opportunities**, and **strengthening defence supply chains**.

Exercise AIKYA

Context: The **National Disaster Management Authority (NDMA)** and the **Southern Command** of the **Indian Army** conducted **Exercise AIKYA**, a national symposium focused on **disaster management**.

Key Highlights of Exercise AIKYA:

- 1) **Two-Day National Symposium:** Focused on **disaster preparedness**, particularly for **cyclones** and **floods**, which frequently affect southern states of India.
- 2) **Simulations and Technology Discussions:** Engaged participants with **simulations** to better understand real-time disaster scenarios.
 - Discussions revolved around the role of **technology** in enhancing disaster response and preparedness.

3) **Role of Defence Forces:** The symposium emphasized the **critical role of defence forces** in disaster management and response, showcasing collaboration between civilian and military agencies.

Government to Fence the Myanmar Border: Border Management and Internal Security

Context: The government has sanctioned ₹31,000 crore to fence the **Myanmar border**, which spans **1,643 km** across **Arunachal Pradesh, Nagaland, Manipur, and Mizoram**. This move comes as a response to security challenges, including the **ethnic violence in Manipur**. The **Free Movement Regime (FMR)** along the border has been scrapped, and 30 km of fencing has been completed.

Key Features of the India-Myanmar Border:

- 1) **Border Length:** The **India-Myanmar border** stretches for **1,643 km**, traversing diverse geographical features, including the **Mishmi Hills, Patkai, Kassom Ranges, Tiau River, and Chin Hills**.
- 2) **States Affected:** The border crosses **Arunachal Pradesh, Nagaland, Manipur, and Mizoram**.
- 3) **FMR:** The **Free Movement Regime (FMR)**, implemented in **2018**, allowed residents of both countries to travel up to **16 km** into each other's territory without a visa. This regime has now been **scrapped** to tighten border security.
- 4) **Trijunction with China and Bangladesh:** The border runs from the **tripoint with China** in the north to the **tripoint with Bangladesh** in the south, with the trijunction yet to be formally agreed upon.

Principle of "One Border, One Border Guarding Force": The Indian government follows the principle of "One Border, One Border Guarding Force" to ensure efficient management of its extensive borders:

- **BSF (Border Security Force):** Guards the borders with **Bangladesh and Pakistan**.
- **ITBP (Indo-Tibetan Border Police):** Guards the **China** border.
- **SSB (Sashastra Seema Bal):** Manages the **Nepal and Bhutan** borders.
- **Assam Rifles:** Handles the **Myanmar** border.
- **Indian Army:** Protects the **Line of Control (LoC)** with Pakistan and the **Line of Actual Control (LAC)** with China.
- **Indian Navy, Coast Guard, and State Marine Police:** Responsible for **coastal security**.

Importance of Effective Border Management:

- 1) **Counterterrorism:** Effective border management prevents the **infiltration of terrorists** and restricts the flow of **arms and explosives**.

- 2) **Limit Organized Crime:** Tight border security curtails illegal activities like **drug trafficking, human trafficking, smuggling, and illicit trade.**
- 3) **Suppress Cross-border Insurgency:** Proper border control prevents insurgents from gaining access to resources and support from external sources.
- 4) **Preserve Sovereignty:** Maintaining secure borders upholds **national sovereignty** and **territorial integrity.**
- 5) **Regulate Migration:** Effective border management ensures **legal migration** while preventing **illegal entries,** thus maintaining demographic stability.

How Poor Border Management Affects Internal Security:

- 1) **Infiltration and Illegal Activities:** In **Jammu and Kashmir,** poor border management has allowed **militants** and **terrorists** to infiltrate, contributing to ongoing conflict and violence.
- 2) **Terrorism and Insurgency:** In the **northeastern states** like **Manipur** and **Mizoram,** inadequate border control allows **insurgent groups** to cross into India from **Myanmar,** fueling local insurgencies.
- 3) **Smuggling and Trafficking:** In **Punjab,** porous borders with **Pakistan** facilitate the **smuggling of drugs,** leading to organized crime and severe drug abuse problems.
- 4) **Cross-Border Crime:** In **West Bengal,** weak border management has led to increased **cross-border trafficking** of humans and goods.
- 5) **Economic Disruption:** In **Assam,** ineffective border control has led to **illegal immigration** and land encroachments, straining local resources and creating socio-economic tensions.

National Security Measures for Border Security:

Category	Measures
Institutional Mechanisms	- BSF for Pakistan and Bangladesh borders - Assam Rifles for northeast border management
Legislative Measures	- Border Security Force Act, 1968 - National Investigation Agency (NIA) Act, 2008
Schemes and Programs	- Integrated Border Management System (IBMS) - Smart Fencing - BADP (Border Area Development Programme)
Cooperation with Locals	- Community Policing Programs - Village Defense Committees (VDCs) in Jammu and Kashmir
Technological Advancements	- Use of drones, surveillance systems, and electronic monitoring systems for real-time border monitoring

Conclusion:

The **Madhukar Gupta Committee** has provided comprehensive recommendations on border protection, including **deployment strategies, infrastructure needs,** and **technology integration.** A strong

collaborative effort involving the **Ministry of Home Affairs, Defense Ministry, and state authorities** is required to ensure effective **border management**, particularly along sensitive borders like Myanmar, which is crucial for maintaining **internal security** and **national sovereignty**.

ECONOMY

BHASKAR: Enhancing India's Startup Ecosystem

Context: The **Department for Promotion of Industry and Internal Trade (DPIIT)** is set to launch **BHASKAR** (Bharat Startup Knowledge Access Registry), a digital platform aimed at strengthening **India's startup ecosystem** under the **Startup India** program.

Key Features:

- 1) **Centralized Resources:** BHASKAR will centralize **resources** for startups, investors, mentors, and service providers, facilitating smoother collaboration.
- 2) **Personalized IDs:** Each stakeholder will receive a **personalized ID**, improving networking and collaboration opportunities.
- 3) **Cross-Border Collaboration:** The platform aims to **position India** as a global hub for innovation by promoting **international partnerships**.
- 4) **Economic Growth:** Expected to drive **innovation**, create jobs, and support **economic growth**, solidifying India as a global leader in entrepreneurship.

Cabinet Approves Continuation of the Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA)

Context: The **Union Cabinet** has approved the continuation of the **Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA)** schemes to ensure that farmers receive **fair prices** for their produce and to stabilize consumer prices of essential goods. This move comes with a financial outlay of **Rs. 35,000 crore** until **2025-26**.

Key Objectives and Components of PM-AASHA:

- 1) **Objective:** Ensure that farmers receive **remunerative prices** for their produce through **Minimum Support Price (MSP)** assurance.
- 2) **Aim:** **Strengthen procurement mechanisms** to increase farmer incomes.

3) **Components: Price Support Scheme (PSS):** Central nodal agencies like **NAFED** and **FCI** will procure **pulses, oilseeds, and copra**. The government covers procurement costs and losses. Up to **25% of marketable surplus** will be procured.

- **Price Deficiency Payment Scheme (PDPS):** State governments pay the difference between **mandi prices** and **MSP** for **oilseeds**. This scheme does not involve physical procurement.
- **Private Procurement & Stockist Scheme (PPPS):** Private agencies procure oilseeds at MSP in coordination with the government when prices fall below MSP. Piloted in select districts.

Issues with the Scheme:

1. **Limited Procurement Infrastructure:** Most benefits go to **wheat** and **rice** farmers, with limited procurement infrastructure for other crops.
2. **Low Farmer Participation:** Only **6%** of farmers sell their produce at MSP (NSSO, 2013).
3. **Low Awareness:** Only **24%** of households were aware of MSP for their crops (2017 study).
4. **MSP Focus on Certain States:** MSP operations are concentrated in a few states, leaving many crops under-procured.
5. **Dissatisfaction with MSP:** **79%** of farmers were dissatisfied with MSP due to **payment delays**, lack of infrastructure, long distances to procurement centres, and delayed MSP announcements (NITI Aayog, 2016)

What is MSP?

- The **Minimum Support Price (MSP)** is the minimum price at which the government buys crops from farmers, ensuring **price protection**. MSP is calculated based on at least **one-and-a-half times** the cost of production.
- Though MSP has no **legal basis**, it has been implemented since the 1960s to:
 - Ensure **food security**.
 - Protect farmers from **price drops**.
 - Incentivize **crop production**.

Importance of MSP:

- 1) **Protection Against Price Volatility:** MSP acts as a tool for the government to **control sharp price fluctuations** of crops.
- 2) **Minimum Price Assurance:** Farmers receive price guarantees, allowing them to make informed decisions before the **sowing season**.
- 3) **Addressing Supply Shortages:** MSP can encourage the production of **crops in short supply** by offering better price support.

4) **Crop Diversification**: MSP encourages **crop diversification**, reducing reliance on imports and curbing food inflation (e.g., the notable increase in MSP for **pulses** and **oilseeds** in 2021).

5) **Food Security**: Crops procured at MSP are sold at **government fair price shops** under schemes like **PM-POSHAN, ICDS, TPDS**, etc., to support **below poverty line** populations.

Conclusion:

The continuation of the **PM-AASHA** scheme is a crucial step towards securing **fair prices for farmers** and addressing issues in India's agricultural procurement system. While the scheme provides a framework for ensuring MSP, there are still challenges in terms of **awareness, infrastructure, and farmer participation** that need to be addressed to maximize its impact. The broader aim of **improving procurement systems** and ensuring **fair returns** for farmers remains central to India's agricultural policies.

Pradhan Mantri Janjatiya Unnat Gram Abhiyan

Context: The **Union Cabinet** has approved the **Pradhan Mantri Janjatiya Unnat Gram Abhiyan** aimed at uplifting **tribal communities** in **63,000 tribal-majority villages** and **aspirational districts**.

Key Objectives and Goals:

1) **Target Population**: The mission aims to benefit **5 crore tribal people** by addressing gaps in **social infrastructure, education, health, and livelihoods**.

2) Holistic Development:

- **Housing**: Provide **pucca houses** to ensure stable living conditions for tribal families.
- **Connectivity**: Improve **road and mobile connectivity** to enhance access to services and opportunities.
- **Education and Healthcare**: Focus on better **educational facilities** and **healthcare access** in tribal areas.
- **Economic Empowerment**: Promote **skills training, livelihood support**, and the establishment of **tribal marketing centers** to enhance income opportunities.

3) Innovative Components:

- **Tribal Home Stays**: Promote tribal tourism and culture by supporting **home stays** in tribal villages.
- **Forest Rights Act Support**: Facilitate the implementation of the **Forest Rights Act**, empowering tribal communities with land rights.

4. **Approach**: Builds on the success of the **PM Janjati Adivasi Nyaya Maha Abhiyan (2023)**, ensuring **holistic tribal development** through a **federal cooperative approach**.

National Centre of Excellence for Animation (NCoE)

Context: The **Union Cabinet** has approved the establishment of a **National Centre of Excellence (NCoE)** for **Animation, Visual Effects, Gaming, Comics, and Extended Reality (AVGC-XR)**, named the **Indian Institute for Immersive Creators (IIIC)**.

Key Objectives and Features:

- 1) **Institutional Model:** Modeled after prestigious institutes like **IITs** and **IIMs**, the **NCoE** will be located in **Mumbai**.
- 2) **Sector Focus:** The **NCoE** will cater to the **AVGC-XR** sector, offering **specialized training**, promoting **research and development**, and fostering **startups**.
- 3) **Global Content Hub:** The institution will help position **India** as a **global hub** for **content creation** in the animation and gaming industries, enhancing India's **soft power**.
- 4) **IP Creation and Cultural Content:** The **NCoE** will focus on creating **Indian Intellectual Property (IP)**, promoting **cultural content**, and boosting employment opportunities in the creative industries.
- 5) **Atmanirbhar Bharat:** This initiative aligns with the vision of **Atmanirbhar Bharat**, contributing to the creation of a self-reliant India by encouraging local content production and attracting **foreign investments**.

US Fed Rate Cut and Its Impact on India

Context: The **US Federal Reserve (Fed)** recently cut the benchmark **interest rate by 50 basis points** to stimulate economic activity and job creation. Lower interest rates encourage borrowing and spending, while higher rates can slow economic growth.

What is the US Federal Reserve (Fed)?

The **US Federal Reserve** is the central banking system of the United States, established in **1913**. Its primary functions include:

- 1) **Monetary Policy:** Managing the nation's **money supply** and **interest rates** to promote economic stability and growth.
- 2) **Banking Supervision:** Regulating and supervising **banks** and **financial institutions** to ensure safety and soundness.
- 3) **Financial Services:** Providing banking services to the **government** and **financial institutions**.

The Fed has a dual mandate:

- **Maximum Employment.**
- **Stable Prices** with moderate long-term interest rates.

What is a Fed Rate Cut?

A **Fed rate cut** refers to lowering the **Federal Funds Rate**, the interest rate at which banks lend money to each other overnight.

- **Purpose:** To stimulate **economic activity** by making borrowing cheaper, encouraging **consumer spending** and **business investment**.
- **Impact:** Lower interest rates lead to **increased lending**, **higher consumer spending**, and **job creation**, while also helping combat **deflation**.

Why Did the US Federal Reserve Cut Interest Rates?

- 1) **Post-Pandemic Recovery:** Initially, rates were cut to stimulate the economy after COVID-19, but were later raised to combat **inflation**.
- 2) **Moderation of Inflation:** By mid-2023, inflation had stabilized near the **2% target**, creating room for a rate cut.
- 3) **Employment Concerns:** With rising unemployment at **4.2%** in August 2024, the Fed decided to cut rates to **stimulate job growth**.
- 4) **Dual Mandate:** The Fed aims to balance **price stability** with **maximum employment**, and the rate cut helps achieve this balance.

Impact on India from the US Fed Rate Cut:

1. **Increased Foreign Investment:** Lower US interest rates make US assets less attractive to global investors, prompting a shift toward **emerging markets** like **India**, where returns may be higher. This could lead to an **inflow of foreign investment** into Indian equities, bonds, and other assets.
2. **Currency Exchange Rates:** A **Fed rate cut** might weaken the **US dollar**, leading to a potential **strengthening of the Indian rupee** against the dollar. A stronger rupee could have mixed effects on the Indian economy.
3. **Exports and Imports:** A **stronger rupee** could make Indian **exports** more expensive and less competitive globally, while **imports** become cheaper, benefiting Indian consumers and businesses that rely on imported goods.
4. **Pressure on the RBI:** The **Reserve Bank of India (RBI)** may face pressure to **adjust its own interest rates** to maintain the competitive appeal of Indian assets and manage capital flows. The RBI will also need to balance domestic inflation and economic growth objectives.
5. **Economic Growth:** With more foreign capital flowing into India and lower global interest rates, Indian businesses could benefit from **cheaper borrowing costs**, stimulating **investment** and **economic activity**.

6. **Carry Trade Appeal:** Carry trades involve borrowing in countries with **low-interest rates** (like the US) to invest in countries with **higher returns** (like India). The rate cut in the US could make this strategy more attractive, potentially increasing foreign investments in **India's debt market**.

Conclusion:

The US Fed's rate cut presents both **opportunities** and **challenges** for India. While it may lead to an influx of **foreign investments** and **cheaper borrowing**, it could also result in a **stronger rupee**, impacting India's **export competitiveness**. The **RBI** will need to carefully manage these dynamics to ensure that India's growth trajectory remains stable amidst global monetary shifts.

FATF Mutual Evaluation Report (MER) on India

Context: India has made **significant progress** in complying with **FATF standards** for combating **money laundering (AML)** and **countering terror financing (CFT)**. The **Mutual Evaluation Report (MER)** placed India in the "**regular follow-up**" category, recognizing its **high level of compliance**.

Key Highlights of the FATF Mutual Evaluation Report on India:

Highlights	Description
Areas Requiring Improvement	1. Non-Profit Organisations (NPOs): Vulnerable to terror funding; stronger measures needed. 2. Politically Exposed Persons (PEPs): Ambiguities regarding the source of wealth and ownership need clarification. 3. Designated Non-Financial Businesses and Professions (DNFBPs): Gaps in regulation in sectors like precious metals, stones, and real estate , which are vulnerable to money laundering.
Money Laundering Risks	Key sources of risk include fraud, cyber fraud, corruption, and drug trafficking .
PMS Vulnerability	Precious metals and stones (PMS) are used to move funds covertly, with risks heightened by India's large PMS market.
Terrorist Financing Threats	India faces threats from ISIL, Al-Qaeda-linked groups , and regional insurgencies like those in the Northeast and Left-Wing Extremism .
Financial Inclusion	Significant progress in bank account access, digital payments , and transparency measures like GST and e-invoicing .
Action Against Terror Financing	The NIA and Enforcement Directorate (ED) were acknowledged for effectively disrupting terror financing .

Key Recommendations by FATF:

- 1) **Expedite pending money laundering trials**, especially in human trafficking and drug-related crimes.
- 2) **Implement targeted financial sanctions** to freeze assets related to money laundering and terrorism financing.
- 3) **Define domestic PEPs** under the **Prevention of Money Laundering Act (PMLA)** and apply **enhanced risk measures**.
- 4) Strengthen protection for **Non-Profit Organisations (NPOs)** to prevent misuse for terror financing.

Background on India's Progress:

- In **June 2024**, the **FATF plenary in Singapore** recognized India for its **high level of technical compliance** with global anti-money laundering standards.
- India was placed in the **"regular follow-up"** category, the highest rating, alongside **G-20** countries like the **UK, France, and Italy**.

About the Financial Action Task Force (FATF):

- **Objective:** To set global standards and policies to combat **money laundering** and **terror financing**.
- **Established:** 1989 during the **G7 Summit** in Paris.
- **Members:** Includes **39 countries** such as the **US, India, China, Saudi Arabia, Britain, and Germany**.
- **India's Membership:** India became a full member of FATF in **2010**.

FATF Mutual Evaluation Report (MER):

- The **Mutual Evaluation Report (MER)** is a **peer review** that assesses a country's framework and actions against **money laundering** and **terror financing**.
- **Effectiveness:** Assesses how well the country's measures are working in practice.
- **Compliance:** Evaluates the legal framework, regulations, and other instruments to combat money laundering

FATF's Two Lists:

1. **Black List:** Countries supporting **terror financing** and **money laundering** are placed on the **blacklist**.
 - Currently includes **North Korea, Iran, and Myanmar**.
2. **Grey List:** Countries considered **safe havens** for terror financing and money laundering. Inclusion in this list acts as a warning before possible blacklisting.

Consequences of FATF Blacklisting:

- **No financial aid** from institutions like the **IMF, World Bank, Asian Development Bank (ADB)**, or the **European Union (EU)**.
- The country faces **international economic and financial sanctions**.

- Damage to **reputation** and **international standing**, affecting global trust and investments.

Conclusion:

India's progress, as recognized in the **FATF Mutual Evaluation Report**, marks a significant achievement in its fight against **money laundering** and **terror financing**. However, further improvements are necessary, particularly in strengthening regulatory measures for **NPOs**, **PEPs**, and **DNFBPs**, ensuring India remains compliant as its economy continues to grow.

Decline in Jute Production in India

Context: Jute production in India is expected to decline by **20%** due to floods in **West Bengal** and **Assam**, two major jute-producing states.

Overview of the Jute Industry in India:

- 1) **Global Leader:** India produces **70%** of the world's jute goods, with **West Bengal** alone contributing about **73%** of this production.
- 2) **Domestic Consumption:** Approximately **90%** of jute production is consumed domestically.
- 3) **Employment:** The jute industry employs **0.37 million workers** directly.
- 4) **Export Potential:** Jute exports could reach **₹4,500 crore annually**, up from **₹3,000 crore in 2023-24**.

Conditions for Jute Cultivation:

- **Temperature:** Between **25-35°C**.
- **Rainfall:** Around **150-250 cm**.
- **Soil Type:** Requires **well-drained alluvial soil**.
- **Production Areas:** India is the largest producer of jute, followed by **Bangladesh** and **China**.
- **Geographical Concentration:** Mainly in **eastern India** along the **Ganga-Brahmaputra delta**.
- **Major Producing States:** West Bengal, Bihar, Odisha, Assam, Andhra Pradesh, Meghalaya, and Tripura.

Challenges in the Jute Industry:

- 1) **Declining Cultivation Area:** A decrease of **1.7 lakh hectares** between 2013-14 and 2021-22.
- 2) **Competition:** Low-cost synthetic alternatives and higher-quality jute from **Bangladesh** and **China** threaten India's jute industry.
- 3) **Poor Raw Jute Quality:** Over **80%** of raw jute is of **poor quality**.
- 4) **Lack of Modernization:** Outdated mills need technological upgrades to improve efficiency.
- 5) **Labour and Infrastructure Issues:** Frequent **strikes**, labour problems, and inadequate **infrastructure** (power supply, transportation) affect productivity.
- 6) **Decreasing Demand:** Declining demand due to alternative fibres like **Mesta**.

Government Initiatives:

- 1) **National Jute Board (NJB)**: Promotes jute development through various schemes.
- 2) **Production Linked Incentive (PLI) Scheme**: Incentivizes the production of jute goods.
- 3) **Jute Packaging Materials Act, 1987**: Mandates the use of jute in packaging to support jute workers and farmers.
- 4) **Jute Mark Logo**: Launched in **2022** to improve branding and positioning of **Indian jute** globally.
- 5) **Jute SMART Initiative**: Enhances transparency in **government procurement** of jute sacking.
- 6) **Jute Geo-Textiles (JGT)**: Promoted under the **Technical Textiles Mission** for diverse applications in **civil engineering** and **erosion control**.
- 7) **Jute Technology Mission 2.0**: Aimed at modernizing the industry and improving jute production.

Measures Needed for the Jute Industry:

- 1) **Upgrade Machinery**: Urgent modernization of mills to benefit both mill owners and consumers.
- 2) **Financial Assistance**: Easy loan availability to upgrade the industry and address **sick mills**.
- 3) **Raw Material Supply**: Ensure a consistent supply of **quality raw materials**, power, and skilled labour.
- 4) **Promote Foreign Investment**: Attract foreign investments to boost the industry's **competitiveness**.
- 5) **Automation and Large-Scale Production**: Encourage automation to increase productivity and promote large-scale production to achieve economies of scale.
- 6) **Research and Development**: Invest in **R&D** to improve jute processing techniques and product quality.
- 7) **Explore Trade Agreements**: Reassess **fibre neutrality** and explore **trade agreements** for market expansion.

Conclusion:

To achieve **Atmanirbhar Bharat**, the government must strengthen sectors like the jute industry, which already has the potential to dominate the global market. Focused interventions through **modernization**, **investment**, and policy support can enhance the jute industry's performance, leading to higher **employment generation**, **export earnings**, and a more **sustainable** future. Initiatives like the **Amended Technology Upgradation Fund Scheme (ATUFS)** and the **Scheme for Integrated Textile Parks (SITP)** are important steps in this direction.

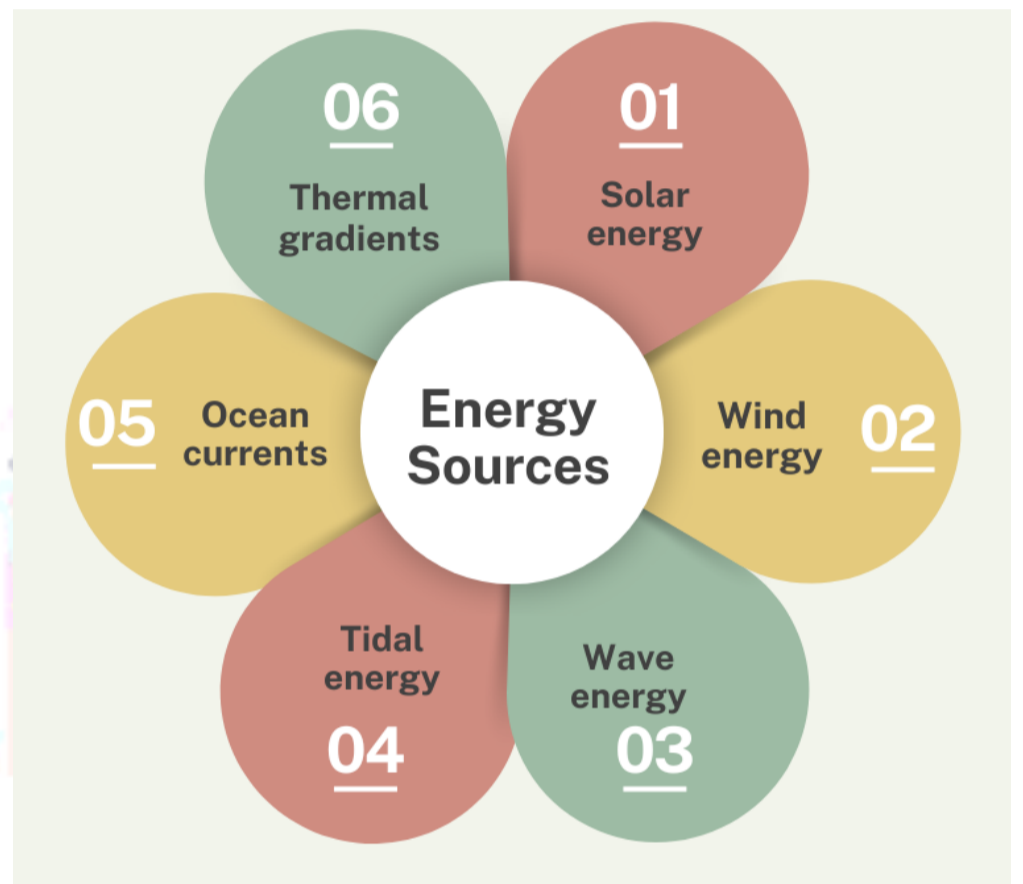
ENVIRONMENT & ECOLOGY

Integrated Ocean Energy Atlas for India's EEZ

Context: The Indian National Centre for Ocean Information Services (INCOIS) has launched the **Integrated Ocean Energy Atlas**, focusing on India's **Exclusive Economic Zone (EEZ)**. This atlas reveals the immense potential for **marine energy resources**.

Key Details:

- 1) **Energy Sources:** The atlas identifies areas rich in **renewable energy resources** such as:
- 2) **Energy Estimates:** Provides detailed **annual, monthly, and daily energy estimates** using a **WebGIS interface**, allowing easier access to data for energy planning and development.
- 3) **Objective:** The atlas aims to boost India's **renewable energy capacity** by tapping into **ocean-based resources**, contributing to energy security and sustainable development.



Centre for Rural Enterprise Acceleration through Technology (CREATE)

Context: The **Centre for Rural Enterprise Acceleration through Technology (CREATE)** was inaugurated via virtual mode to promote **rural industrialization** and **enterprise creation** in Ladakh.

Key Objectives:

- 1) **Enterprise Creation:** CREATE focuses on enhancing rural industries, particularly in Ladakh, by supporting local **enterprise creation** and industrial development.
- 2) **Facilities:** The centre will provide the following facilities to improve local productivity:
 - **Pashmina wool processing.**
 - **Essential oil extraction from roses.**
 - **Bioprocessing of local fruits.**
- 3) **Impact on Artisans:**
 - CREATE will support traditional artisans, especially in **Ladakh's challenging geographical conditions**, by improving **product quality** and creating **sustainable livelihoods**.

- 4) **Uplifting Livelihoods:** This initiative aims to **uplift local communities**, enhance the **quality of products**, and boost **economic development** in the region by leveraging **local resources** and technology.

Climate Change and Global Flooding

Context: Climate change is intensifying **global flooding** by increasing the frequency and intensity of heavy rainfall events.

How Climate Change Affects Global Flooding:

1) Rising Temperatures and Moisture Retention:

- As temperatures rise, the atmosphere holds more moisture, leading to **more intense downpours**.
- For example, a **1.5°C** increase in global temperatures could make heavy rainfall events **1.5 times more frequent** and **10% wetter**.

2) Flooding Frequency:

- If global temperatures rise by **2°C**, severe floods could occur **1.7 times per decade**, with **14% more rainfall**.

Implications of Climate Change on Flooding:

- 1) **Increased Rainfall Intensity:** Example: **Germany (2021)** faced severe floods intensified by climate change, causing widespread devastation in western regions.
- 2) **Higher Atmospheric Moisture:** Example: **UAE and Oman** experienced record-breaking rainfall in **2023** due to warmer air holding more moisture.
- 3) **Frequent Extreme Rainfall Events:** Example: **Europe's 2023 summer floods** were worsened by the increased frequency of extreme rainfall.
- 4) **Transition from Snow to Rain:** Example: In high-altitude areas like the **Alps**, more frequent floods and landslides are occurring as **snowfall** increasingly shifts to **rain**.
- 5) **Urban Flood Risk:** Example: Rapid urbanization in cities like **Dhaka, Bangladesh**, has increased flood risk, particularly in flood-prone areas.
- 6) **Impact on Low-Income Countries:** Example: **Floods in India and China** have displaced millions, with low-income populations being the most affected.
- 7) **Rising Sea Levels:** Example: Coastal cities like **Miami, USA**, are experiencing worse flooding due to **rising sea levels**.

Other Contributing Factors to Flooding:

- 1) **Deforestation and Land Use Changes:** Unsustainable deforestation, particularly in upper catchments, leads to soil erosion and river overflow.

- Example: Flooding in the **Sundarbans** is attributed to these practices.
- 2) **Encroachment on Floodplains:** Building on floodplains obstructs natural drainage, worsening floods.
 - Example: Severe floods in **Bihar** are worsened by encroachment on floodplains.
 - 3) **Inadequate Drainage and Infrastructure:** Weak or outdated drainage systems fail to handle excess water.
 - Example: **Bihar-West Bengal floods** are exacerbated by annually breached embankments.
 - 4) **Poor Urban Planning:** Lack of proper water management increases urban flood risk.

Strategies to Mitigate Flood Risks:

- 1) **Early Warning Systems:** Implement advanced systems to provide **timely alerts** to vulnerable communities.
 - Example: **Flood Early Warning System (FLEWS)** in **Assam**.
- 2) **Eco-Restoration:** Promote reforestation and wetland conservation to enhance natural drainage systems.
 - Example: **Red River Delta Rehabilitation Project** in Vietnam.
- 3) **Infrastructure Development:** Invest in resilient infrastructure like embankments, flood shelters, and drainage systems.
 - Example: **Coastal Embankment Improvement Project (CEIP)** in **Bangladesh**.
- 4) **Community Engagement:** Train local communities in **disaster response** and involve them in planning processes.
 - Example: **Living with Floods** initiative for **community-based flood preparedness**.
- 5) **Climate-Resilient Agriculture:** Promote agricultural practices that can withstand floods.
 - Example: **Integrated Rice-Fish Farming System (IRFFS)** promoted by the **World Food Programme**.

NDMA Guidelines for Flood Preparedness:

- 1) **Before Floods:** Avoid building in flood-prone areas unless adequately elevated. Reinforce homes and install **check valves** in sewer traps.
- 2) **When a Flood is Likely:** Stay informed via **radio/TV**. Move to higher ground if necessary, and be prepared for flash floods.
- 3) **During Evacuation:** Secure your home, bring in outdoor furniture, and turn off utilities. Avoid walking or driving through floodwaters.

Conclusion:

Climate change is significantly exacerbating global flooding, and the rising frequency of floods poses serious risks worldwide. Effective flood management requires a **holistic and integrated approach**, combining **infrastructure development, sustainable land-use practices, community engagement**, and

international cooperation. With targeted interventions, such as improved warning systems and eco-restoration initiatives, the impacts of floods can be mitigated, particularly in vulnerable areas like the **Ganges-Brahmaputra Delta.**

Seaweed Cultivation: ICAR-CMFRI as a Centre of Excellence

Context: The **ICAR-Central Marine Fisheries Research Institute (CMFRI)** has been designated as a **Centre of Excellence** for **seaweed cultivation** by the **Department of Fisheries**, under the **Ministry of Fisheries, Animal Husbandry, and Dairying.**

Key Objectives of the Centre of Excellence:

- 1) **Improvement of Cultivation Techniques:** The centre will focus on enhancing the methods used to cultivate **seaweed** efficiently, ensuring higher yields and sustainability.
- 2) **Seed Bank for Indigenous Species:** A **seed bank** will be established to preserve **indigenous seaweed species**, ensuring biodiversity and conservation.
- 3) **Environmental Impact Assessments:** The centre will conduct thorough **environmental impact assessments** to understand and mitigate any potential negative effects of large-scale seaweed cultivation on marine ecosystems.

What is Seaweed?

- **Seaweed** refers to a diverse group of **marine plants and algae** that grow in oceans and other water bodies. They play a critical role in marine ecosystems by providing **habitat** and **food** for various marine species, and they contribute to **carbon sequestration.**

Uses of Seaweed:

1. **Agriculture:** Seaweed is used as a **biofertilizer** and **soil conditioner**, improving soil quality and crop yields.
2. **Industry:** It is used in the production of **pharmaceuticals, cosmetics, and biofuels**, and is a source of **agar** and **carrageenan**, substances used in food and industrial applications.
3. **Cuisine:** In many countries, particularly in Asia, seaweed is consumed as a nutrient-rich food, providing essential **vitamins** and **minerals.**

Conclusion:

The designation of **ICAR-CMFRI** as a Centre of Excellence in seaweed cultivation marks a significant step in **boosting the seaweed industry** in India. By focusing on improved cultivation techniques, preserving indigenous species, and assessing environmental impacts, this initiative supports the sustainable use of seaweed for **agriculture, industry, and marine ecosystem health.**

Battery Waste Management (BWM) Rules, 2022

Context: The **Ministry of Environment, Forest, and Climate Change (MoEFCC)** has introduced new **environmental compensation (EC)** guidelines to enforce compliance with the **Battery Waste Management (BWM) Rules, 2022**. These guidelines, issued by the **Central Pollution Control Board (CPCB)**, aim to penalize battery producers who fail to meet **recycling targets** under the **Extended Producer Responsibility (EPR)** framework.

Key Highlights of the BWM Rules, 2022:

- 1. Extended Producer Responsibility (EPR):** Producers are responsible for the entire lifecycle of batteries, including **collection, recycling, and safe disposal of post-consumer battery waste**.
 - Producers must meet specific recycling targets, ensuring batteries are collected from consumers and processed in an environmentally sound manner.
- 2. Environmental Compensation (EC) Guidelines:** Producers failing to meet recycling targets will face fines based on the type of battery.
 - **Example:** Rs 2,400 per kg for lithium batteries.
 - The guidelines are aimed at enforcing stricter compliance and ensuring that producers take responsibility for battery waste.
- 3. Recycling Targets:** The rules set specific **recycling targets** for different types of batteries (e.g., lead-acid, lithium-ion, etc.), ensuring that a significant portion of used batteries is recycled and not disposed of in environmentally harmful ways.
- 4. Battery Types Covered:** The rules cover all types of batteries, including **lead-acid, lithium-ion, nickel-cadmium**, and other commonly used batteries in electronics and vehicles.
- 5. Collection and Safe Disposal:** The BWM Rules mandate the creation of **battery collection networks** to ensure that consumers can return used batteries for proper disposal and recycling.
 - These networks aim to reduce improper disposal, which can lead to environmental contamination.

Importance of Battery Waste Management:

- 1) Environmental Protection:** Batteries contain **hazardous materials** like lead, cadmium, and lithium, which can contaminate soil and water if improperly disposed of.
- 2) Resource Recovery:** Recycling batteries allows the recovery of valuable materials like **metals**, reducing the need for mining and conserving natural resources.
- 3) Sustainability:** By enforcing EPR and recycling, the BWM Rules support the sustainable management of battery waste, contributing to **circular economy** efforts.

Conclusion:

The **Battery Waste Management (BWM) Rules, 2022** are a significant step toward ensuring the responsible management of battery waste in India. The introduction of **environmental compensation** guidelines under the EPR framework holds producers accountable and encourages them to meet recycling targets. This is crucial for **reducing environmental hazards** and promoting the **sustainable use of resources**.

Coelacanths: Ancient Deep-Sea Fish and Evolutionary Insights

Context: The discovery of a new, well-preserved **coelacanth** fossil has led to a re-evaluation of how Earth's geology influences evolution.

What are Coelacanths?

- Coelacanths are **ancient deep-sea fish** that were thought to have gone extinct over **65 million years ago** until they were rediscovered in **1938**.
- They have existed for over **410 million years** and are closely related to **tetrapods**, the first vertebrates to walk on land.

Key Discovery:

- The newly discovered coelacanth fossil from Australia's **Gogo Formation** has challenged previous theories about how ocean conditions drive evolution.
- The fossil suggests that **tectonic plate activity**, rather than oceanic environmental conditions, played a major role in the emergence of new species. This shifts the understanding of how **Earth's geology** influences evolutionary patterns.
- Despite being dubbed as "living fossils," the living coelacanth species exhibit **slight genetic changes** and **variations in body proportions**, indicating that they have undergone some evolutionary changes over millions of years.

Bio-RIDE Scheme

Context: The **Union Cabinet** has approved the **Biotechnology Research Innovation and Entrepreneurship Development (Bio-RIDE)** scheme, which merges two existing schemes under the **Department of Biotechnology**.

Key Components of Bio-RIDE:

- 1) **Biotechnology Research & Development (R&D):** Focuses on supporting **cutting-edge research** in areas such as **synthetic biology, bioenergy**, and other advanced biotechnological fields.

- 2) **Industrial & Entrepreneurship Development (I&ED)**: Aims to promote **bio-entrepreneurship** by providing **funding, incubation, and mentorship** to startups and innovators in the biotech sector.
- 3) **Biomanufacturing and Biofoundry**: Emphasizes sustainable practices and supports a **circular bioeconomy**, focusing on addressing challenges in **healthcare, agriculture, and climate change**.

Objectives:

- The scheme aims to strengthen **industry-academia collaboration** and promote extramural funding for research.
- The goal is to position India as a **global leader** in biotechnology, contributing to a projected **\$300 billion bioeconomy by 2030**.

Bharatiya Antariksh Station (BAS-1)

Context: The **Union Cabinet** has approved the development of the **Bharatiya Antariksh Station (BAS-1)** as part of an expanded **Gaganyaan programme**, a major leap in India's space ambitions.

Key Highlights:

- 1) **Gaganyaan Programme Expansion**: Now includes **eight missions**, with some being uncrewed, to be completed by **December 2028**.
- 2) **Bharatiya Antariksh Station (BAS-1)**: The station will focus on **microgravity-based scientific research and technology development**, offering opportunities for advancements in **high-tech sectors**.
 - BAS-1 is expected to become operational by **2035**.
- 3) **Future Crewed Lunar Mission**: The decision sets the groundwork for a **crewed lunar mission by 2040**.
- 4) **Collaboration**: **ISRO** will lead the efforts, collaborating with **industry and academia** to develop the critical technologies required for **long-duration human space missions**.
- 5) **Other Approved Missions**: The Cabinet also approved the **Chandrayaan-4 mission** and a **Venus Orbiter mission**, further expanding India's space exploration goals.

Significance: The establishment of **BAS-1** and the expansion of India's space missions mark a significant step in making India a key player in **space research and technology development** on a global scale.

Pheromone Dispenser for Pest Control

Context: Scientists from **Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)** and **ICAR-National Bureau of Agricultural Insect Resources (ICAR-NBAIR)** have developed a **sustainable pheromone dispenser** to assist farmers in **controlling pests**.

Key Features of the Pheromone Dispenser:

- 1) **Mesoporous Silica Matrix:** The dispenser uses a **mesoporous silica matrix**, which allows for a **stable and controlled release** of pheromones over an extended period, making it more efficient than existing models.
- 2) **Cost-Effective:** The **stable release rate** reduces the frequency of replacements, thereby lowering **costs** and **labor** for farmers.
- 3) **Field Performance:** In field tests, the dispenser's performance was comparable to commercial models but required a **reduced pheromone load**, making it more sustainable.

What are Pheromones?

- **Pheromones** are chemical substances produced and released by animals (including insects and humans) that trigger a **social or behavioral response** in members of the same species.
- In agriculture, pheromones are often used to **disrupt mating patterns** of pests or attract them to traps, reducing crop damage.

Neuralink's Blindsight Implant

Context: Neuralink, Elon Musk's brain-chip company, has received the FDA's "**breakthrough device**" designation for its **Blindsight implant**, designed to restore **vision** even in individuals who have lost both eyes and their **optic nerve**.

Key Features of Blindsight:

- 1) **Restoring Vision:** The **Blindsight implant** is designed to **restore vision** by directly stimulating the brain, bypassing the optic nerve. It aims to help those with complete vision loss.
- 2) **FDA Breakthrough Designation:** This designation accelerates the **development** and **review process** for medical devices addressing life-threatening conditions, such as blindness.
- 3) **Broader Neuralink Mission:** The Blindsight implant is part of Neuralink's larger mission to **restore neural functions**. Neuralink has already implanted the device in a second patient, enabling them to **play video games** and **design 3D objects** using brain signals.

Significance: Neuralink's **Blindsight implant** represents a major advancement in neurotechnology, with the potential to **restore sight** and improve quality of life for individuals with severe vision impairment.

SOCIETY & SOCIAL ISSUES

Irula Community: Guardians of Public Health

Context: The Irula tribe of Tamil Nadu, classified as a **Particularly Vulnerable Tribal Group (PVTG)**, plays a vital role in **India's public health** by supplying **80% of the country's anti-snake venom**.

Challenges:

- Despite their significant contribution, the Irula community continues to struggle with **poverty** and faces an uncertain future.
- A cooperative society near Chennai manages the production of snake venom, highlighting the **economic challenges** despite their critical role in healthcare.

Cultural Significance:

- The Irulas primarily reside in the **Nilgiris region** and are also found in **Karnataka** and **Kerala**.
- They place strong emphasis on **ancestor worship** and belong to the **Negrito race**, one of the oldest tribal groups in India, believed to have migrated from Africa.

SCIENCE & TECHNOLOGY

Chandrayaan-4 Mission: Cabinet Approval and its Significance

Context: The **Union Cabinet** has approved the **Chandrayaan-4 mission**, marking a significant step in India's space exploration program. The mission aims to demonstrate technologies required for a **return to Earth after landing on the Moon** and **collecting lunar samples** for scientific analysis.

Key Objectives of Chandrayaan-4:

- 1) **Demonstrating Return Technology:** Chandrayaan-4 will focus on returning to Earth after a successful lunar landing, a capability critical for future missions involving **sample collection** and **human exploration**.
- 2) **Lunar Sample Collection:** The mission will be India's first attempt to **collect samples from the Moon**, which will be analyzed for scientific advancements.
- 3) **Future Lunar Missions:** The technologies developed in Chandrayaan-4 will contribute to India's future goals, including a **manned lunar mission by 2040**.

- 4) **Timeline and Collaboration:** The project is expected to be completed within **36 months** and will be led by **ISRO**, with significant involvement from **industry** and **academia**.
- 5) **Broader Vision:** The mission aligns with India's **space vision**, including the creation of an **Indian Space Station by 2035**.

Significance of the Chandrayaan-4 Mission:

- 1) **Technological Advancement:** The mission will demonstrate India's ability to **return safely from the Moon**, a critical advancement for future **lunar missions**.
- 2) **Lunar Sample Collection:** Chandrayaan-4 will be India's first attempt to **collect lunar samples**, enabling scientific research on the Moon's geology and composition.
- 3) **Foundation for Manned Missions:** The mission sets the foundation for India's future **manned lunar missions**, with a goal of a **human landing by 2040**.
- 4) **Indigenous Development:** By developing **self-reliant technologies**, the mission will enhance India's space capabilities, reducing dependence on international collaborations for advanced technologies.
- 5) **Boost to Space Industry:** The mission will involve extensive participation from **Indian industries**, spurring technological spin-offs and generating employment.
- 6) **Global Space Leadership:** Successfully executing Chandrayaan-4 will further strengthen India's position among the world's elite **space-faring nations**, adding to its global reputation in **planetary exploration**.

Conclusion:

The **Chandrayaan-4 mission** represents another significant leap in India's ambitious space exploration program. With goals like **lunar sample collection**, **return technology**, and **manned missions**, this mission will not only push India's technological frontiers but also contribute to the **global scientific community** in understanding the Moon. Chandrayaan-4's success will also bolster **India's leadership** in space exploration and further the country's vision of becoming a global **space power**.

UNESCO's Call for Open Science Principles in AI

Context: UNESCO has highlighted the need to apply **open science principles** to **Artificial Intelligence (AI)**, addressing concerns about the "**black-box**" nature of AI systems, which are often controlled by private companies. This limits the transparency and openness that are essential for scientific progress.

What is Open Science?

- **Open Science** is a collaborative and inclusive approach that aims to make **scientific research** and **data** accessible, reusable, and openly available to everyone. It encourages the sharing of research outputs,

methodologies, software, and data, promoting **transparency, collaboration, and inclusivity** in scientific research.

Benefits of Applying Open Science to AI:

- 1) **Reproducibility:** Open Science ensures that AI experiments can be **validated** and **replicated** by other researchers, enhancing scientific accuracy and trust.
- 2) **Innovation:** By sharing research and data, **new developments** in AI can happen faster, as scientists can build on each other's work without duplicating efforts.
- 3) **Transparency:** Open Science addresses the **"black-box"** issue, making AI systems more understandable by allowing researchers to see how decisions are made and what data is being used.
- 4) **Bias Mitigation:** Open data sharing helps identify and fix **biases** in AI models, leading to fairer and more inclusive systems.
- 5) **Inclusivity:** It allows researchers from diverse backgrounds to **contribute**, ensuring that AI development is more democratic and less dominated by large corporations.
- 6) **Data Quality:** Open Science promotes the creation of **high-quality**, standardized datasets that are crucial for building reliable AI systems.
- 7) **Ethical Development:** With open access to research, the AI community can ensure that AI is being developed in a **responsible** and **ethical** manner, aligned with societal values.
- 8) **Cost Efficiency:** It reduces the **duplication** of research efforts, allowing funds and resources to be used more efficiently in developing innovative AI technologies.

Challenges AI Poses to Open Science:

- 1) **Reproducibility Crisis:** Due to the complexity and proprietary nature of AI systems, reproducing AI experiments remains difficult, limiting scientific validation.
- 2) **Interdisciplinarity:** Collaboration between AI researchers and experts in other fields (like ethics, law, and social sciences) is still limited, hindering the holistic development of AI.
- 3) **Data Issues:** AI often relies on data that may be of **poor quality**, incomplete, or biased, which poses challenges in building fair and reliable systems.
- 4) **Changing Incentives:** The increasing focus on AI development can shift incentives, encouraging researchers to prioritize AI over the broader **scientific rigour** required for holistic advancements.

UNESCO's Call for Ethical AI Governance:

UNESCO also stresses the importance of **ethical AI governance** through its **Global AI Ethics and Governance Observatory**. This platform supports:

- **Policymakers, academics, and the private sector** in addressing AI's challenges.

- Encourages responsible, ethical AI adoption across the globe by promoting **transparency, fairness, and human rights**.

UNESCO's Ethics of AI Recommendation: In **2021**, UNESCO introduced the first **global standard on AI ethics**, emphasizing key values such as:

- 1) **Human Rights and Dignity:** Ensuring AI respects and protects fundamental human rights.
- 2) **Peaceful and Inclusive Societies:** AI should foster **justice** and promote connectivity across diverse groups.
- 3) **Diversity and Inclusiveness:** AI systems must be inclusive and take into account varied perspectives from around the world.
- 4) **Environmental Sustainability:** AI should contribute positively to **environmental well-being**, addressing issues like climate change and resource conservation.

Ten Core Principles of AI Ethics: The UNESCO recommendation outlines **ten key principles** for ethical AI development, including:

- **Proportionality:** AI should balance risk and benefit.
- **Safety:** AI systems must be safe for public use.
- **Privacy:** Ensuring user data is secure.
- **Transparency:** AI decision-making processes should be clear.
- **Human Oversight:** Humans should retain control over AI systems.
- **Sustainability:** AI must align with environmental goals.
- **Fairness:** AI should be non-discriminatory and just.

Tools for Implementation: UNESCO has developed tools like:

- 1) **Readiness Assessment Methodology (RAM):** Helps member states evaluate their readiness to implement AI ethics.
- 2) **Ethical Impact Assessment (EIA):** Ensures AI systems are ethically sound before deployment.

Women4Ethical AI Platform:

- **UNESCO's Women4Ethical AI platform** focuses on **gender equality** in AI design and deployment. It brings together **female experts** to promote ethical AI practices and avoid biases in algorithm design.

AI's Potential for Ethical and Moral Behavior:

Positive Aspects:

1. **Understanding Ethics:** AI can be programmed to identify and moderate **hate speech** or offensive content, helping maintain an ethical online environment.

2. **Bias Mitigation:** AI can be designed to **reduce biases** and prevent unfair treatment in decision-making systems.
3. **Ethical Decision-Making:** AI can follow **predefined ethical rules** to make decisions, though it may not have the capacity for deep moral reasoning.

Challenges (Counterview):

1. **Learning from Data:** AI systems can unintentionally learn biased or unethical information, leading to **unintended consequences**.
2. **Kantian Perspective:** Applying philosophical ethics (like **Kantian ethics**) to AI raises concerns about whether AI can truly understand **moral responsibility**. AI lacks consciousness, so its actions cannot be moral or immoral in the human sense.
3. **Accountability:** If an AI makes an unethical decision, determining **who is accountable** (developer, user, or the AI itself) is difficult, as AI lacks intent or emotions.
4. **Unintended Consequences:** For example, social media algorithms designed to show relevant content may unintentionally create **echo chambers**, reinforcing biases.

Steps Taken for Ethical AI Globally:

• International Initiatives:

- **Global Alliance for Social Entrepreneurship** launched an AI for Social Innovation initiative at **WEF 2024**.
- **EU AI Act:** Comprehensive AI risk governance.
- **California:** Passed a bill for AI safety testing.

• National Initiatives:

- **IndiaAI Mission:** Public-private partnerships for AI innovation.
- **NITI Aayog's National Strategy on AI (2018):** Promoting safe, inclusive AI under the **"AI for All"** mantra.

Conclusion:

The integration of **open science principles** into AI development can significantly improve **transparency, collaboration, and ethical standards**. While AI has immense potential for societal benefits, balancing innovation with ethical practices is key to ensuring **responsible AI development** worldwide.

Neuromorphic Computing Breakthrough at IISc

Context: Scientists at the **Indian Institute of Science (IISc), Bengaluru** have achieved a major breakthrough in **neuromorphic computing**, which aims to mimic the human brain's structure and functioning.

Key Innovation:

- The team developed an **analogue computing platform** capable of processing and storing data using **16,500 conductance states**, compared to traditional computers that operate with only **two states** (binary 0 and 1).
- This advancement greatly enhances the **efficiency** and **energy consumption** of complex AI tasks, such as training models like **ChatGPT**.

Practical Demonstration:

- The system's capabilities were demonstrated by recreating NASA's famous **"Pillars of Creation"** image with significantly lower energy consumption compared to conventional methods.

Potential Impact: This breakthrough could **revolutionize computing**, particularly in fields like **AI, finance, and technology** by enabling **faster data processing** and **more efficient machine learning** systems.

Quantum Computing: Enhancing Large Language Models and AI

Context: **Quantum computing** holds the potential to overcome key limitations faced by **Large Language Models (LLMs)**, such as **high energy consumption**, **hallucinations** (factually incorrect outputs), and struggles with **syntax**.

How Quantum Computing Can Benefit LLMs:

1. Energy Efficiency:

- LLMs, though highly effective, require vast computational power, leading to **high energy consumption**.
- **Quantum Natural Language Processing (QNLP)** requires **fewer parameters** and **less energy** compared to classical models, providing a more efficient solution.

2. Accuracy and Understanding:

- LLMs can produce **erroneous results** or "hallucinations" due to limitations in their training datasets.
- QNLP improves the model's ability to understand both **syntax** and **semantics**, reducing the occurrence of factually incorrect outputs.

3. Quantum Generative AI (QGen-AI):

- QGen-AI models offer advancements in **time-series forecasting**, enabling more accurate predictions with **fewer computational resources**.
- This is especially useful in fields like finance, weather forecasting, and healthcare, where precise predictions are critical.

Basics of Quantum Computing:

- **Quantum computing** is a cutting-edge field that uses principles from **quantum mechanics** to process information.
- Unlike classical computers, which use **bits** (represented as **0** or **1**), quantum computers use **quantum bits (qubits)**, which can exist in **superposition**—both **0 and 1 simultaneously**.

This unique capability allows quantum computers to process complex problems much faster than classical computers, solving tasks like cryptography, optimization, and even **natural language processing** more efficiently.

Conclusion:

Quantum computing, through innovations like **QNL**P and **QGen-AI**, offers transformative possibilities in addressing current limitations of LLMs. With its potential to enhance **efficiency, accuracy, and predictive capabilities**, quantum computing is set to revolutionize the landscape of artificial intelligence and computational tasks.

Antitrust Investigations: Amazon and Flipkart Violations

Context: The **Competition Commission of India (CCI)** uncovered violations of competition laws by **Amazon** and **Flipkart** through antitrust investigations.

Key Findings:

- 1) **Preferred Sellers:** Both Amazon and Flipkart provided **preferential treatment** to selected sellers. These sellers benefited from **marketing** and **warehousing services** at minimal costs, creating an unfair advantage over other sellers.
- 2) **Preferential Listings:** The majority of **top listings** on these platforms were dominated by these preferred sellers, creating **barriers for other sellers** to compete effectively.
- 3) **Exclusive Product Launches:** Amazon and Flipkart had **exclusive partnerships** for launching popular technology products (e.g., smartphones), disadvantaging smaller retailers and delaying product availability for **traditional stores**.
- 4) **Deep Discounting:** Both companies allowed their **affiliated sellers** to offer **deep discounts**, often selling products below cost, which drove out competition and harmed smaller businesses.

These practices have raised concerns about the **fairness** and **transparency** of the e-commerce ecosystem in India, highlighting the need for stricter **regulatory measures** to ensure healthy competition.

Project 200

Context: Bengaluru-based startup **Bellatrix Aerospace** unveiled **Project 200**, a cutting-edge satellite designed to operate in **Ultra-Low Earth Orbit (ULEO)**, between **180-250 km** altitude, at the **Bengaluru Space Expo 2024**.

Key Features of Project 200:

- 1. Ultra-Low Earth Orbit (ULEO):** Operating at **180-250 km**, significantly lower than traditional Low Earth Orbits, providing key advantages for satellite operations.
- 2. Propulsion Technology:** Bellatrix Aerospace's **breakthrough propulsion technology** will allow satellites to operate in this challenging low-altitude environment for **years**, overcoming the problem of **atmospheric drag**.
- 3. Enhanced Capabilities:**
 - **Improved Image Resolution:** Satellites operating in ULEO will have **three times better resolution** for Earth observation.
 - **Reduced Communication Latency:** Latency is reduced by **half**, making it ideal for telecommunications.
 - **Cost Efficiency:** Lower operating costs for satellites, marking a significant shift in satellite-based applications.
- 4. Applications:**
 - **High-Resolution Earth Observation:** Ideal for applications like **urban planning, agriculture, and disaster management**.
 - **Telecommunications:** Enhances communications infrastructure by reducing delays.

BIOTECHNOLOGY & HEALTH

MVA-BN Vaccine: WHO Prequalification for Mpox

Context: The **World Health Organization (WHO)** has prequalified the **MVA-BN vaccine**, marking it as the first approved vaccine to combat **mpox** (formerly known as monkeypox).

Key Details:

1. **Broader Access:** WHO's prequalification allows for **broader and faster access** to the vaccine, particularly in **high-risk populations**, to help reduce transmission and contain outbreaks.
2. **Effectiveness:**
 - **Single Dose:** 76% effectiveness.
 - **Two Doses:** 82% effectiveness.
3. **Storage:** The vaccine can be stored at **2-8°C** for up to **eight weeks**, making it more manageable for distribution.
4. **Target Population:** The vaccine is recommended for **adults over 18**.
5. **Developer:** The MVA-BN vaccine is developed by **Bavarian Nordic A/S**.

Signal Modulation: AM, FM, and PM

Context: **Signal modulation** is a method of adjusting wave properties—**Amplitude (AM)**, **Frequency (FM)**, or **Phase (PM)**—to transmit information effectively in communication systems.

Key Modulation Types:

1. **Amplitude Modulation (AM):**
 - Modifies the **height (amplitude)** of the wave to encode signals.
 - **Range:** AM has a longer range but is more susceptible to **noise and interference**.
2. **Frequency Modulation (FM):**
 - Alters the **frequency** of the wave to transmit signals.
 - **Sound Quality:** FM provides better **sound quality** than AM but has a **shorter range**.
3. **Phase Modulation (PM):**
 - Adjusts the **phase** of the wave for digital transmissions like **Wi-Fi**.
 - **Interference Resistance:** PM is less affected by **interference** and is often used for clear **digital signals**.

Technology Trends: As technology evolves, **digital broadcasting** is replacing analog methods due to **better efficiency** and **resistance to interference**, making **digital modulation** more popular in modern communication systems.

PLACES IN NEWS

Renaming of Port Blair to Sri Vijaya Puram

Context: The Government of India has renamed **Port Blair**, the capital of the **Andaman and Nicobar Islands**, to **Sri Vijaya Puram** as part of efforts to **remove colonial legacies**.

Original Name:

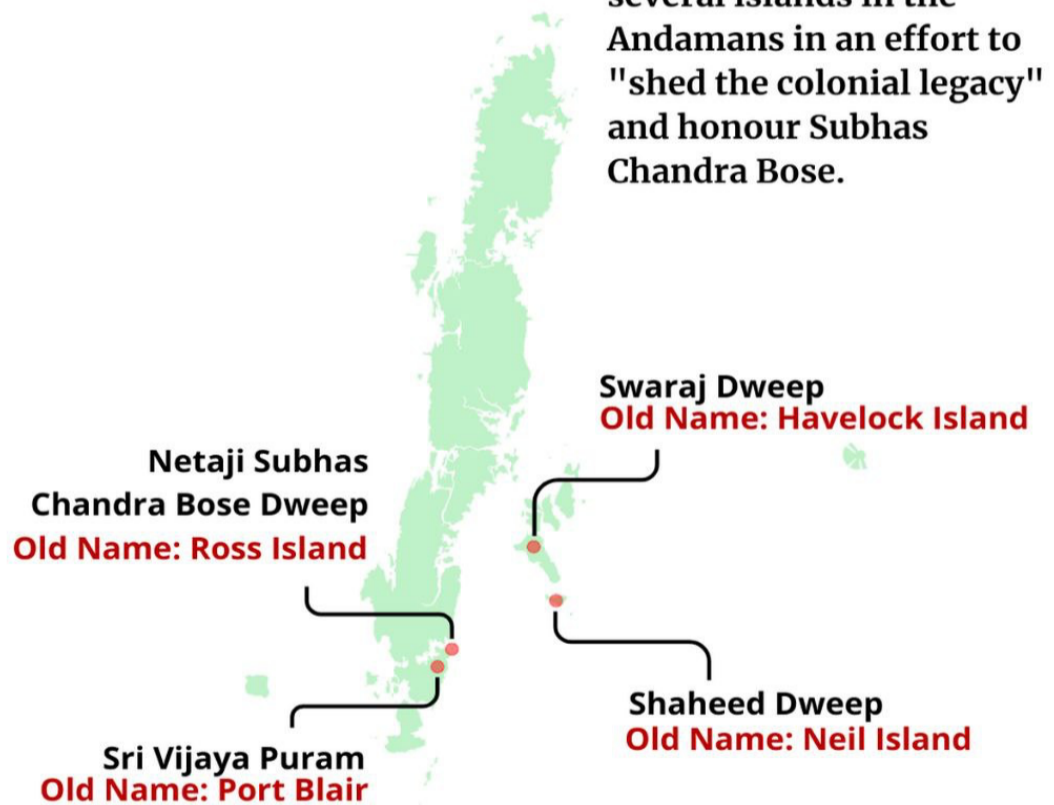
- **Port Blair** was named after **Archibald Blair**, a British naval officer.
- The city played a strategic role for the **British East India Company** and later became infamous as a **penal colony** for political prisoners, especially in the **Cellular Jail** during British rule.

Significance of New Name:

- **Sri Vijaya Puram** is a nod to the **imperial Chola dynasty**.
- Historical evidence indicates that **Chola emperor Rajendra I** used the **Andaman Islands** as a naval base during the **11th century** for his expeditions against the **Srivijaya Empire** (modern-day Indonesia).

Renaming Islands in Andaman

In recent years, the Narendra Modi government has renamed several islands in the Andamans in an effort to "shed the colonial legacy" and honour Subhas Chandra Bose.



Jordan's Milestone in Public Health



Context: Jordan became the **first country** to receive **World Health Organization (WHO)** verification for eliminating **leprosy**, marking a significant public health achievement.

Key Points:

1. **Leprosy Elimination:** Jordan has not reported any **locally transmitted cases** for over **two decades**, earning **WHO verification** for eliminating leprosy.
2. **Strong Political Commitment:** This achievement reflects **Jordan's robust public health strategies** and

sustained efforts in tackling leprosy, making it a **global model** for public health programs.

3. About Jordan:

- **Location:** Jordan is in **West Asia**, bordered by **Saudi Arabia, Iraq, Syria, Palestine, and Israel**.
- **Capital:** **Amman**.
- **Geopolitical Significance:** Positioned at the crossroads of **Asia, Africa, and Europe**, Jordan is known for its **tourism, medical tourism**, and historical significance dating back to the **Paleolithic period**.
- **Constitutional Monarchy:** Jordan is a **founding member** of the **Arab League** and plays a key role in regional stability.

