INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

VAMPIRE STAR

Researchers from the Indian Institute of Astrophysics (IIA) have discovered a “vampire star” in the star cluster M67 in the constellation Cancer.

5 AUG - 10 AUG 2024

WEEKLY CURRENT AFFAIRS

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MAPPING

GENERAL STUDIES – 1

Topics: Distribution of key natural resources across the world (including South Asia and the Indian subcontinent)

1. GEOTHERMAL POWER POTENTIAL IN INDIA

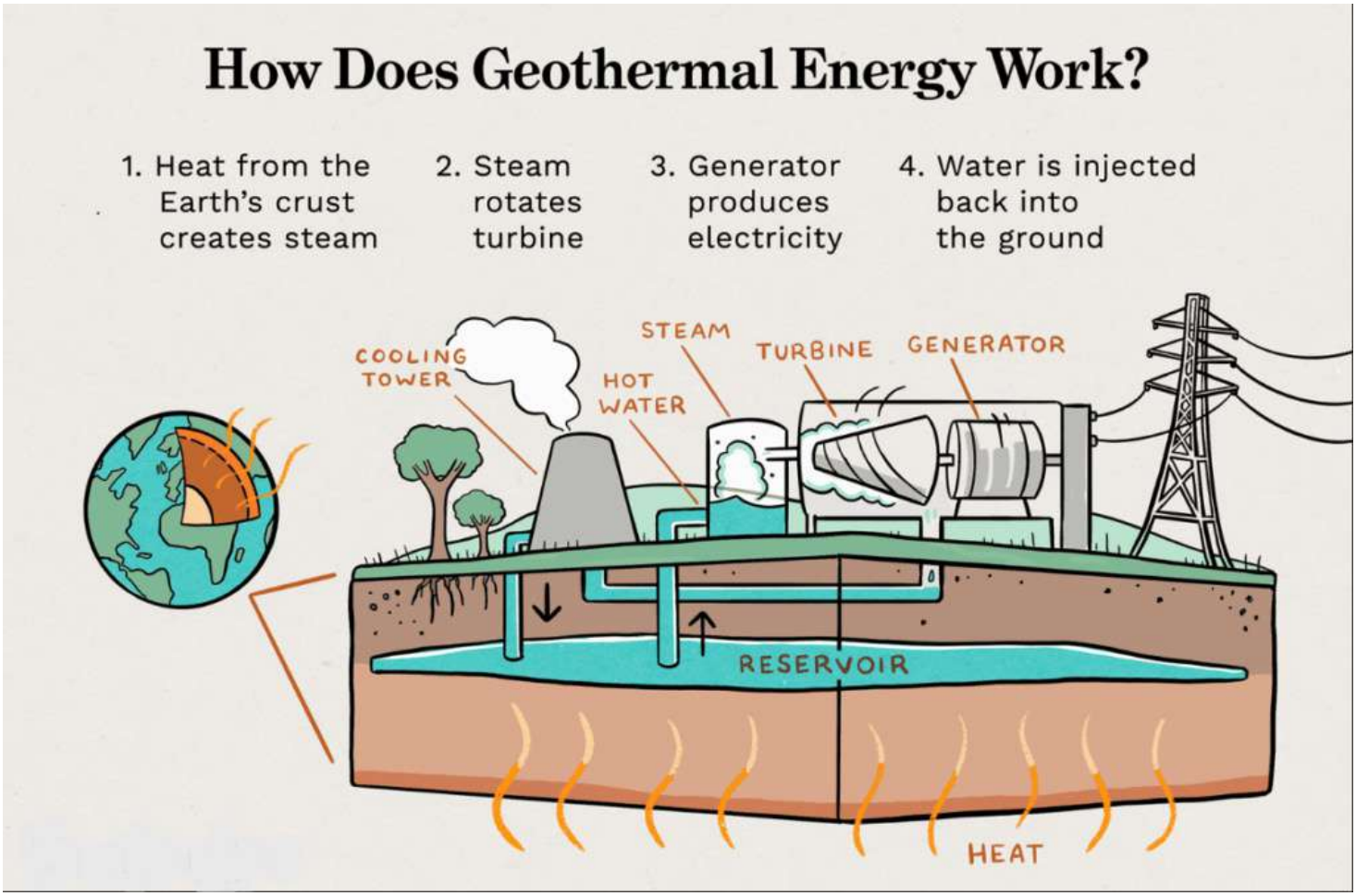
Context:

India has **identified approximately 10,600 MW of geothermal power potential**, according to the **Geological Survey of India (GSI)**.

1. The GSI has conducted extensive **exploration across 381 thermally active areas**, gathering data on temperature, discharge, and water quality.
2. **A 20 kW pilot geothermal power plant** using **Binary Organic Rankine Cycle technology** has been successfully commissioned in Telangana by **Singareni Collieries Company Limited**.

What is Geothermal energy?

It is heat that comes from the Earth's interior. It is harnessed by **tapping into steam or hot water reservoirs** found beneath the Earth's surface. This energy can be **used directly for heating** or to generate electricity using geothermal power plants.



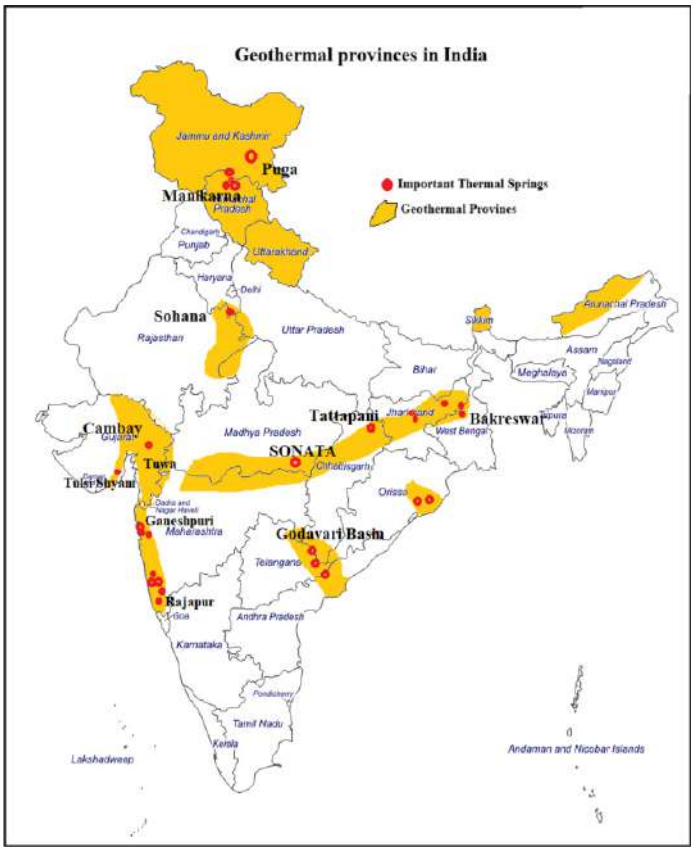
Types of Geothermal Power Plants (Sometimes such Qns can be asked in Prelims)

There are three types of geothermal power plants where we can harness the heat of the earth to produce electricity.

1. Dry steam powerplant
2. Flash steam power plant
3. Binary cycle power plant

All these plants follow the same principle of using the heat of the earth to produce electricity. As flash steam power plant requires a high enthalpy range and hence they cannot be used in India.

Status of Geothermal Energy/Geothermal Powerplants in India:



Geothermal resources in India have been mapped by the **Geological Survey of India (GSI)** and a broad estimate by the **Ministry of New and Renewable Energy (MNRE)** suggests that there could be **10 GW of geothermal power**

Potential of Geothermal Energy in India:

Aspect	Description	Example
Abundant Resource	India has substantial geothermal energy resources with an estimated potential of 10,600 MW.	
Baseload Power	Provides a reliable, consistent power supply, contributing to grid stability and reducing fossil fuel dependence.	
Hot Springs and Geysers	Harness geothermal hot springs and geysers for power generation.	Puga Geothermal Field, Ladakh
Direct Use Applications	Used directly for space heating, greenhouse cultivation, and industrial processes.	Chumathang for house heating and hot water
District Heating	Can be used for efficient and sustainable heating in cities.	Manikaran, Himachal Pradesh
Tourism Potential	Unique geothermal sites can attract tourists and benefit local economies.	Tattapani, Himachal Pradesh
Off-Grid Applications	Beneficial for remote or off-grid areas, providing electricity and reducing reliance on diesel generators.	Remote areas like Ladakh

Various challenges in the widespread adoption of geothermal energy in India:

1. **High Upfront Costs:** Significant initial investment for drilling wells and installing infrastructure.
2. **Limited Geothermal Resources**: Most resources are low-temperature, suitable mainly for direct heat applications.
3. **Lack of Technical Expertise**: Insufficient professionals with experience in geothermal exploration and development.
4. **Regulatory and Policy Framework:** The absence of a comprehensive regulatory framework specific to geo-

thermal energy.

5. **Uncertain Resource Assessment:** Limited exploration and data make accurate resource assessment challenging.
6. **Infrastructure Limitations:** Remote areas may lack the necessary infrastructure, increasing costs and complexity.
7. **Environmental Considerations:** Potential negative impacts, such as groundwater contamination or seismic activity.

Steps Taken in India:

1. Renewable Energy Research & Technology Development Programme (RE-RTD)
    - **100% financial support by MNRE** to government/non-profit research organizations.
    - **Up to 70% financial support to industry, startups, private institutes**, entrepreneurs, and manufacturing units.
2. Renewable Energy Technology Action Platform
    - Collaboration under the US-India Strategic Clean Energy Partnership.
3. Mission on Advanced and High-Impact Research (MAHIR)
4. Oil and Natural Gas Corporation (ONGC) has established India's first Geothermal field **development project at Puga village in Ladakh.**
5. **Tata Power is India's largest integrated power company**. Tata Power will be setting up a geothermal plant in Gujarat of about **5MW plant.**
6. **National Thermal Power Corporation** is planning to construct a **300MW** of geothermal power plant project in **Chhattisgarh**.

Insta Links:

- Geothermal Energy

Mains Link:

Q. Examine the various obstacles to an energy-secure India. How can the government ensure energy security while honouring its net zero commitments? (15M)

Topics: Important Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc., geographical features and their location- changes in critical geographical features (including water-bodies and ice-caps) and in flora and fauna and the effects of such changes.

2. ADDRESSING COASTAL EROSION: CHALLENGES AND SOLUTIONS

Context:

Coastal erosion in Tamil Nadu is increasingly threatening livelihoods and infrastructure due to both natural processes and human interventions.

What is Coastal erosion?

It refers to the loss of coastal land due to the action of waves, currents, and human activities.

Examples:

1. **Tamil Nadu**, with **India's second-longest coastline**, faces significant erosion challenges exacerbated by construction projects like **groynes, ports, and desalination plants. Groynes**, intended to control erosion, often shift the problem to neighbouring areas rather than solving it.
2. Chengalpattu: Groynes at Soolerikattukuppam are causing erosion to neighbouring villages.
3. Puducherry: A port's construction led to severe beach erosion, though recent efforts to restore the beach have had mixed results.

Key Findings of the Study Regarding Tamil Nadu Coast:

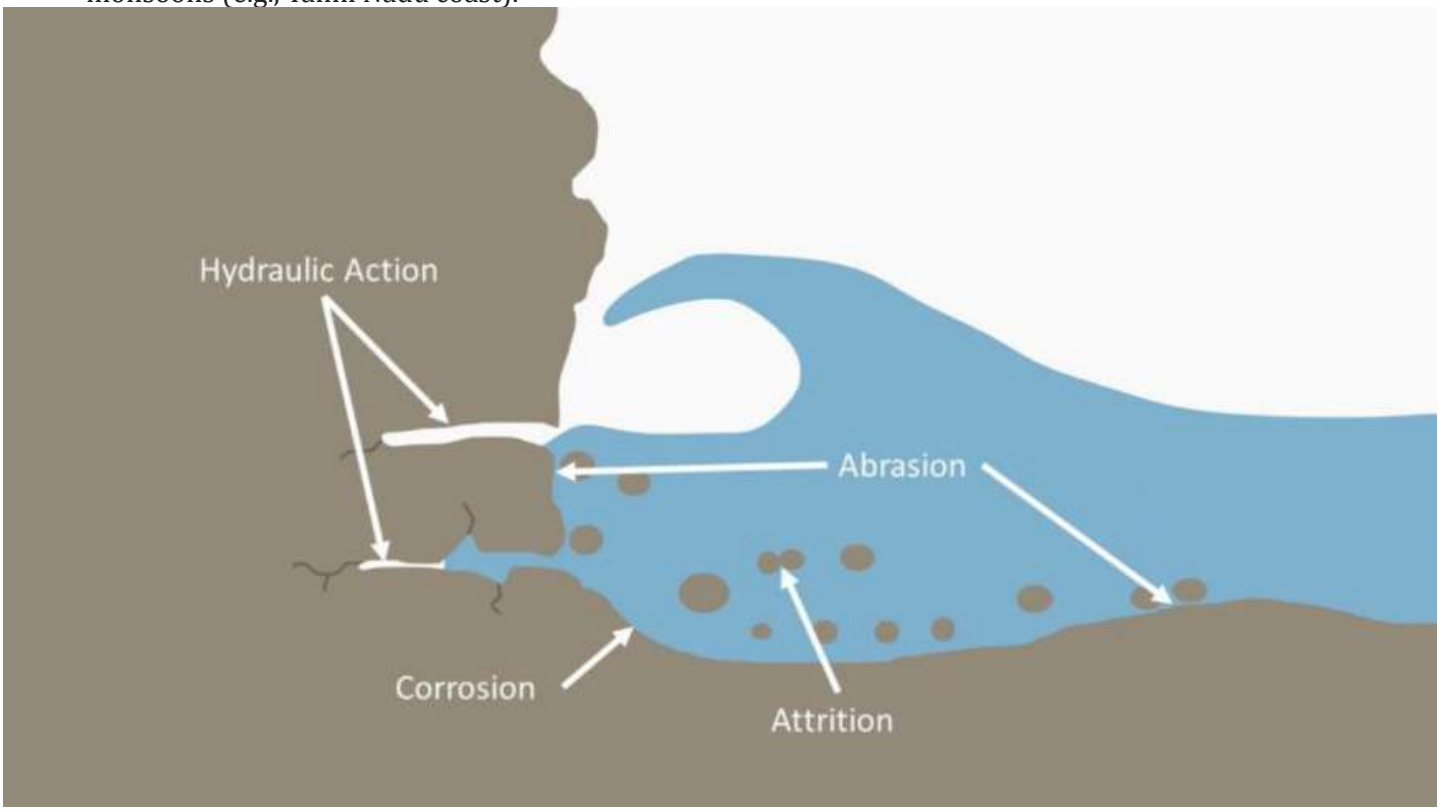
1. **Sand Movement:** For most of the year, sand is carried from south to north by wind and sea currents; during the northeast monsoon, this flow reverses.

2. **Impact of Structures:** Building ports, breakwaters, or groynes disrupts this natural sand movement.
3. **Erosion Effect:** Sand accumulates on one side of these structures, leading to increased erosion on the opposite side, with waves encroaching further inland and heightening coastal risks.

Causes of Coastal Erosion:

Natural Causes:

- Waves: Powerful waves erode coastlines through abrasion and hydraulic action (e.g., the cliffs of Dover).
- Tides: High and low tides can significantly impact erosion, especially in areas with large tidal ranges (e.g., Bay of Fundy).
- Wind and Sea Currents: Cause long-term erosion by moving sand along the coast; direction reverses during monsoons (e.g., Tamil Nadu coast).



Human Cause:

- Hard Structures: Ports and groynes disrupt sand movement, leading to erosion on the down-current side and accumulation on the up-current side.
- Development Projects: Infrastructure changes, such as land reclamation, worsen erosion by altering the shoreline (e.g., Mumbai).
- Port Expansion: Breakwaters and jetties from expanded ports block sand movement, increasing erosion on one side (e.g., Ennore and Adani Kattupalli Ports).

Impact of Coastal Erosion

- Pollution of beaches caused by broken sewer lines
- **Loss of income** those who are dependent
- **Disruption of communications** caused by the collapse of seafront bridge road and railway foundations
- Damage and destruction of jetties
- **Removal of small islands**
- **Destruction of habitats** of flora and fauna
- **Loss of agricultural lands**
- Silting and invasion of saline water
- **Scarcity of drinking water**

Challenges:

- Ineffectiveness of Groynes: Often shifts erosion rather than prevents it.
- Regulatory Issues: Lack of proper clearance and adherence to Coastal Regulation Zone rules.

Solution:

1. **Green belts and artificial reefs** help in the mitigation of coastal erosion.
2. **Coastal habitats such as Mangroves**, Coral Reefs, and lagoons are recognized as the best defence against sea storms and erosion, deflecting and absorbing much of the energy of sea storms.
3. Hybrid Approach: Combining hard and soft measures like bio-shields and nourishment to better manage erosion.

Government Initiatives to Tackle Coastal Erosion:

1. Shoreline Mapping System: NCCR identifies 33.6% of the coastline as vulnerable to erosion.
2. Hazard Line: Defined by MoEFCC for disaster management and adaptive planning.
3. Coastal Regulation Zone (CRZ) Notification 2019: Allows erosion control measures and sets up No Development Zones.
4. Coastal Zone Management Plans (CZMP): States must map erosion-prone areas and prepare Shoreline Management Plans.
5. National Strategy for Coastal Protection: Guidelines developed by MoEFCC for coastal states.
6. Flood Management Scheme: State and Union Governments plan anti-sea erosion projects.
7. Coastal Management Information System (CMIS): Collects coastal data for protection planning; and experimental setups in Kerala, Tamil Nadu, and Puducherry.
8. **State Initiatives:** Tamil Nadu's response includes building groynes and seawalls, though their effectiveness is debated.
9. **Using Geosynthetic tubes**: currently being used along the coast in Odisha.

Insta Links:

Coastal erosion and landforms thus formed

Mains Link:

The extent and severity of the coastal erosion problem are worsening with global sea level rise. It has both ecological and economic costs and needs to be addressed urgently. Analyse. (250 words)

GENERAL STUDIES – 2

Topics: Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

1. THE OILFIELDS (REGULATION AND DEVELOPMENT) AMENDMENT BILL, 2024

Context:

The Oilfields (Regulation and Development) Amendment Bill, 2024, introduced in the Rajya Sabha.

The Bill aims to:

1. **It aims to amend the Oilfields (Regulation and Development) Act, 1948**.
    - Originally, oilfields, mines, and minerals were **regulated under the** Mines and Minerals (Regulation and Development) Act, 1948, which was later **split in 1957 by the Mines and Minerals (Development and Regulation) Act.**
2. The Act regulates the **exploration and extraction of natural gas and petroleum**.
3. **Ensure Policy Stability**: Stabilizes terms of petroleum leases to protect lessees from unfavourable changes.
4. **Enable International Arbitration**: Allows dispute resolution through international arbitration.
5. Boost Investor Confidence: Creates an investor-friendly environment to attract investments.
6. Facilitate Efficient Development: Encourages joint development of connected fields and shared infrastructure.

Major Provisions of the Bill:

Aspect	Current Provisions	Amended Provisions
Definition of Mineral Oils	Includes **petroleum and natural gas.**	Expands to include: (i) **naturally occurring hydrocarbons, (ii) coal bed methane, (iii) shale gas/oil. Excludes coal, lignite, and helium.**

Petroleum Lease	Mining lease for exploration, prospecting, production, and disposal of mineral oils.	**Replaces mining lease with petroleum lease**, covering similar activities. Existing leases remain valid.
Rule-Making Powers	Regulates lease grant, terms, conservation, production methods, and royalty collection.	Adds rules for (i) **merger/combination of leases**, (ii) sharing facilities, (iii) environmental protection, and (iv) dispute resolution.
Decriminalisation of Offences	Violations are **punishable by up to six months imprisonment or a Rs 1,000 fine.**	**Penalties increased to Rs 25 lakh**; new offences include operating without a lease and non-payment of royalties. **Continued violations attract up to Rs 10 lakh per day.**
Adjudication of Penalties	Adjudication by an officer of **Joint Secretary rank**; appeals to Appellate Tribunal under the **Petroleum and Natural Gas Board Regulatory Board Act, 2006.**	Appeals to the **Appellate Tribunal for Electricity under the Electricity Act, 2003**.

Conclusion:

The amendment is significant as it **ensures energy access, security, and affordability, reduces import** dependence by boosting domestic oil and gas production, attracts investment for capital and technological advancement, supports energy transition to cleaner fuels, and establishes a robust enforcement mechanism for compliance.

2. UTTAR PRADESH'S ANTI-CONVERSION LAW MADE MORE STRINGENT

Context:

Recently, the Uttar Pradesh Legislative Assembly amended the 2021 anti-conversion law, making its provisions more stringent.

Aim of the amendments:

The amendment **strengthens the** 2021 anti-conversion law **to curb alleged "organized and well-planned"** activities by **"foreign and anti-national elements"** accused of influencing demographic changes through unlawful conversions. With **427 cases registered** under the original Act between January 2021 and April 2023, the goal is to more effectively address these concerns.

Key amendments Introduced:

Amendment Area	Previous Provisions	New Provisions
1. Increased Penalties	**a) Punishment**: 1 to 5 years in prison and a ₹15,000 fine.	**a) Punishment**: 5 to 10 years in prison and a ₹50,000 fine.
	b) Specific Cases: For conversions involving minors, women, or SC/ST,	**b) Specific Cases**: Penalty raised to 5 to 14 years in prison and a fine of ₹1 lakh.
2. New Offenses	**a) Not specified.**	**a) Foreign/Illegal Funds**: 7 to 14 years in prison and a ₹10 lakh fine for using illegal funds.
		b) Forced Conversion: 20 years to life imprisonment for conversion through threats, violence, or deceit.
3. Complaint Filing	**a) Complaint Filer**: Only the aggrieved person or close relatives could file complaints.	**a) Complaint Filer**: Now, any person can file a complaint.
4. Bail Provisions	**a) Cognizable and Non-Bailable**: Offenses were bailable.	**a) Cognizable and Non-Bailable**: All offences are now cognizable and non-bailable.
	b) Bail Conditions: Standard bail provisions.	**b) Bail Conditions**: Twin conditions of bail, requiring the prosecutor's input and the court's satisfaction.

Comparison of Anti-Conversion Laws Across States

1. States: Odisha, Madhya Pradesh, Arunachal Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Uttarakhand.
2. Notification Requirements:
    a. Madhya Pradesh: 60 days.
    b. Himachal Pradesh & Uttarakhand: 30 days.
    c. Uttar Pradesh: 60 days + police inquiry.
3. Complaint Filing:
    a. Other states: Aggrieved person or family.
    b. Uttar Pradesh: Any person can file an FIR.
4. Bail Conditions:
    a. Uttar Pradesh: Strict.
    b. Other states: Less stringent.
5. Penalties:
    a. Uttar Pradesh: 5 years to life.
    b. Other states: 2 to 10 years.

Key Constitutional Provisions related to religious conversions:

Provisions	Details
Article 25	**Guarantees freedom of conscience and the right to freely profess, practice, and propagate religion**, subject to public order, morality, and health. Allows regulation of secular activities associated with religion.
Article 26	**Entitles religious denominations** to manage their own religious affairs, subject to public order, morality, and health.
Articles 27-30	**Guarantee the freedom to manage religious affairs**, contribute monetarily to religion, and establish and administer educational institutions.

How Has the Supreme Court Interpreted Religious Conversions?

1. **Rev. Stainislaus vs. State of Madhya Pradesh (1977):** Article 25(1) allows the spreading of religion but not converting others.
2. **Sarla Mudgal vs. Union of India (1995) and Lilly Thomas vs. Union of India (2000):** Conversions for polygamy are invalid.
3. **M Chandra vs. M Thangamuthu & Another (2010):** Evidence of conversion and acceptance into the new community is required.
4. **Graham Staines Case (2011):** Conversion by force or incitement is unjustifiable.
5. **Right to Privacy Case (2017):** Upholds the right to freedom of religion, with state interference needing to be proportionate.
6. **Note:** No definitive ruling on "**propagate**" under Article 25 yet.

About Anti-Conversion Laws in India:

1. **About**: Aim to prevent forced, fraudulent, or induced religious conversions.
2. **Historical Context:** Pre-Independence laws restricted conversions; post-Independence central attempts failed.
3. **State-Level Laws**: Enacted in Odisha, Madhya Pradesh, Gujarat, and other states, often requiring notification or prohibiting forceful conversions.
4. **Centre's Stand:** Affirms the right to religion excludes coercive conversions; no special law proposed.
5. **Challenges**: Constitutional concerns, burden of proof on accused, impact on interfaith marriages, misuse and targeting of minorities.
6. **Way Forward:** Define key terms clearly, uphold innocence, standardize regulations, consider a national framework, and promote interfaith dialogue.

Insta-Links:

Prelims Link:

1. About Article 21.

2. Article 25.
3. What has the Allahabad High Court said in the Salamat Ansari-Priyanka Kharwar case?

Mains Link:
The right to choose a partner or live with a person of choice was part of a citizen's fundamental right to life and liberty. Discuss.

3. DRAFT WAQF (AMENDMENT) BILL 2024

Context:
The **proposed amendments to the Waqf Act 1995** aim to increase government control over Waqf properties, traditionally considered private assets of Muslims.

What is Waqf?
Waqf is the **permanent dedication of property by a Muslim for religious or charitable purposes.** Once designated as Waqf, the property is managed for the benefit of the community and cannot be sold or transferred.

It is managed under the **Waqf Act, 1995**. It funds institutions like **schools, mosques, and shelters**. Managed by a **mutawali and overseen by Waqf Boards**, Waqfs are **perpetual and non-transferable**. The Central Waqf Council supervises state boards. There are **8,72,292 Waqf properties** in India, generating Rs **200 crore in revenue**.

Composition of Waqf Board:
A Waqf Board, under the state government, manages **Waqf properties**, including **prominent mosques**. Many states have separate boards for **Shia and Sunni communities**.

A Waqf Board is headed by a chairperson and has **one or two nominees from the state government, Muslim legislators and parliamentarians**, Muslim members of the State Bar Council, recognised scholars of Islamic theology, and **mutawallis of Waqfs** with an annual income of Rs 1 lakh and above.

What is the Waqf Board Act?
The Waqf Board Act, **initially enacted in 1954 and replaced by the 1995 Waqf Act**, regulates **Waqf properties.** In 2013, the **Act was further amended to grant the Waqf Board extensive powers** to designate property as **'Waqf Property.'**

The amendment establishes a framework for managing these properties and overseeing them through a **Central Waqf Council**. The **Waqf Board Amendment Bill 2024** aims to address transparency issues and revise the composition of Waqf Boards to enhance their effectiveness.

Key Amendments in Waqf Act (Amendment Bill), 2024:

Amendments	Details
Name Change	Replacing the **Waqf Act, 1995** with the **Unified Waqf Management, Empowerment, Efficiency and Development Act, 1995**
Transparency	Approximately **40 amendments**, including mandatory verification for all property claims by Waqf Boards.
	Central Government Powers: Authority to audit Waqf properties
Gender Diversity	**Sections 9 and 14** will be amended to include **women representatives** in the Waqf Board's composition.
Revised Verification Procedures	Introduction of **new verification procedures to address disputes and prevent misuse**, with district magistrates potentially overseeing properties.

New Provisions	Section 3A: Requires lawful ownership for creating Waqf.
	Section 3C(1): Government property will not be deemed Waqf
	Section 3C(2): Government to decide if a property is Waqf or government land.
Limited Power	Response to **concerns about unchecked powers of Waqf Boards**, addressing issues of extensive land claims and disputes. Example: **Tamil Nadu Waqf Board's** claim over Thiruchendurai village in September 2022.
Removal of "Waqf by Use"	Properties **will need valid Waqfnama** to be considered Waqf.
Board Composition	**Allows non-Muslim CEOs** and members on state Waqf Boards.

Criticism of the Amendment:

1. **Reduced Powers**: Limits Waqf Boards' authority.
2. **Minority Rights Concerns**: May harm Muslim communities.
3. **Increased Government Control**: Excessive bureaucratic interference.
4. **Hampers Freedom of Religion:** Encroaches on religious autonomy.
5. **Potential Disputes**: New verification processes may cause complications.

Conclusion:

The **Waqf (Amendment) Bill, 2024** improves **management and transparency of waqf properties**, enhancing governance and accountability to benefit communities and promote social welfare. However, the fear around the amendment regarding the dilution of the power of the Waqf Board must be addressed.

Mains Link:

Q. How is the Indian concept of secularism different from the Western model of secularism? Discuss. (UPSC 2018)

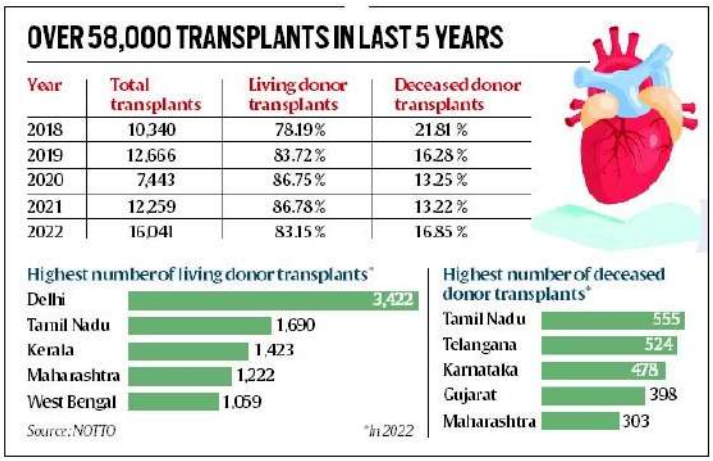
4. ORGAN DONATION IN INDIA

Context:

The **Ministry of Health and Family Welfare** have recently released data on Organ donation in India.

Major Findings:

1. **Women Lead in Living Donations**: 9,784 women donated organs, surpassing 5,651 male donors.
2. **Record High Transplants**: Total transplants in 2023 reached 18,378, the highest ever.
3. **Deceased Donations**: More deceased donors were men (844) than women (255).
4. **Kidney Transplants Dominant**: Most transplants were kidneys, followed by liver and heart transplants.
5. **State Rankings: Telangana** led in cadaver donations, followed by Tamil Nadu and Karnataka.
6. **Low Donation Rate:** The organ donation rate remains under one per million population.
7. **Need for Awareness**: Continued promotion of deceased organ donation is necessary.



What is Organ Donation?

Organ donation is the process of giving an organ or tissue to someone in need of a transplant. It can involve living donors, who can donate one kidney or part of their liver, or deceased donors, who can donate multiple organs like the heart, lungs, liver, kidneys, pancreas, and tissues after death. This act helps save or improve the lives of patients suffering from end-stage organ failure.

Laws regarding Organ donation in India:

The primary law governing organ transplants in India is the Transplantation of Human Organs Act (THOA), 1994. India ranks third globally in the number of transplants conducted. Overall, organ transplants, including both deceased and living donors, increased from 4,990 in 2013 to 15,561 in 2022.

The Delhi High Court in January 2024, recommended a **6–8-week timeframe for completing organ transplant processes** involving living donors. It also directed the government to set **specific timelines for all stages of organ donation applications**, in line with the **Transplantation of Human Organs and Tissues (THOT) Act, 1994, and THOT Rules, 2014**.

Eligibility:

1. Organ donation eligibility is primarily based on the donor's physical condition (and not age), with both living (above 18 years) and deceased individuals being eligible.
2. Consent from the family is required for deceased organ donation.
3. According to the latest guidelines, individuals above 65 years can receive organs for transplantation from deceased donors, and the requirement of state domicile for patient registration was removed.

Reforms Needed:

1. Compliance with THOTA: Authorities should ensure compliance with the Transplantation of Human Organs & Tissues Act (THOTA), 1994, investigating any breaches and taking appropriate action.
2. Unique ID: Health authorities must ensure the generation of a unique NOTTO-ID for both organ donors and recipients in all transplant cases to enhance transparency and traceability.
3. Data Sharing: Ensure regular collection and sharing of transplant data, including cases involving foreigners, with NOTTO to enhance transparency and accountability.

NOTTO (National Organ & Tissue Transplant Organization) is a national-level organization under the Ministry of Health and Family Welfare. It coordinates and networks for organ and tissue procurement and distribution nationwide. Additionally, it maintains a registry of organ and tissue donation and transplantation activities.

Ethical aspects of organ donation:

Ethical Aspect	Description
Autonomy	Respecting the donor's right to make informed decisions about organ donation, whether living or deceased.
Informed Consent	Ensuring donors or their families are fully informed and voluntarily consent to donation.
Beneficence	The principle of doing good by helping recipients improve their quality of life or save their lives.
Non-Maleficence	Ensuring that the donation process does not cause unnecessary harm to the donor.
Justice	Fair and equitable allocation of organs to recipients, regardless of their background or social status.
Confidentiality	Protecting the privacy and identity of both donors and recipients.
Altruism	Emphasizing the selfless nature of organ donation as an act of charity and goodwill.
Transparency	Maintaining clear, honest communication about the donation process and criteria for organ allocation.
Cultural Sensitivity	Respecting cultural, religious, and personal beliefs in the context of organ donation decisions.
Exploitation Prevention	Safeguarding against the exploitation of vulnerable individuals, especially in living donations.
Posthumous Rights	Considering the wishes and dignity of the deceased in the case of organ donation after death.

Insta Links:

Organ Donation to Foreigners in India

5. DRAFT BROADCAST SERVICES BILL 2024

Context:

The recently introduced **draft Broadcast Services Bill 2024** has raised concerns about freedom of speech. The draft is the revision of the previously proposed Broadcasting Services (Regulation) Bill, 2023, to replace the **Cable Television Networks (Regulation) Act of 1995.**

What are Broadcast Services?

Broadcast Services involve distributing audio, video, or multimedia content to a wide audience.

Examples:

1. TV Channels (e.g., CNN, BBC)
2. Radio Stations (e.g., NPR, BBC Radio)
3. Online Streaming (e.g., Netflix, YouTube)

4. Podcasts (e.g., "The Joe Rogan Experience")

These services offer news, entertainment, and educational content through various media channels.

Key Features of the Draft Bill:

Aspect	Details
Background	**Revision of the 2023 draft** bill to consolidate broadcasting regulations, extending to OTT and digital news.
Key Features	**Definition of Digital News Broadcasters:** Includes anyone publishing news/content via online platforms, excluding replica e-papers.
Code of Ethics	**Validates the IT Rules 2021** code of ethics, which is currently stayed by courts.
Content Evaluation Committee (CEC)	**Creators must form CECs**, register with a Self-Regulatory Organisation, and follow orders from the Broadcast Advisory Council.
	Creators must **ensure diversity**, and provide member details to the government.
	Non-compliance fines: Rs 50 lakh (first), Rs **2.5 crore** (subsequent).
OTT Platforms	Referred to as **'publishers of online curated content'**; not included under **'internet broadcasting services'** but aligned with IT Rules 2021.
Regulation of Social Media Creators	Extends to **independent news creators** on platforms like YouTube, Instagram, and X, classifying them as digital news broadcasters.
Mandatory Registration	Digital news broadcasters must **register with the Ministry of Information and Broadcasting (MIB)** and disclose details about their operations and CECs.
Intimation to Government	Creators must **inform MIB about their operations** and CECs within a month.
Social Media Intermediary Liability	Social media companies must exercise due diligence and can face criminal liability for failing to **provide necessary information about digital news broadcasters**.
Exemptions for Certain Players	Allows the government to **exempt certain stakeholders to avoid genuine hardship.**
Global Applicability	May include **foreign creators**, though enforcing these regulations on them could be challenging.

Why is the Scope of the Draft Broadcasting Services (Regulation) Bill 2024 Expanded?

The bill's scope is expanded **to address sensational content by independent creators** during the 2024 Lok Sabha polls and concerns about **tech algorithms amplifying certain narratives,** aiming to ensure accountability and a level playing field.

Concerns Regarding the Draft Broadcasting Services (Regulation) Bill 2024:

1. Threat to Freedom of Speech: Broad definitions and regulatory scope may lead to government overreach and censorship.
2. Vague Definitions: Terms like **"systematic activity"** and **"digital news broadcaster"** are poorly defined, risking arbitrary enforcement.
3. Onerous Compliance Requirements: Independent creators face financial and administrative challenges in complying with the bill's mandates.
4. Chilling Effect on Independent Media: Registration and adherence to government standards could stifle critical journalism.
5. High Penalties: Steep fines for non-compliance could disproportionately affect smaller creators.
6. Selective Enforcement Potential: Exemptions for certain players may result in uneven application of the law.
7. Impact on Social Media Platforms: Social media companies may face criminal liability, leading to increased content regulation.
8. Global Reach: Regulating foreign creators could be difficult and strain international relations.
9. Lack of Public Consultation: Limited stakeholder involvement raises concerns about transparency in the drafting process.

Case Study: Singapore's Broadcasting Law:

- Scope: Covers both traditional broadcasters and OTT content providers.

- Regulation: OTT platforms need a license under copyright law, with less stringent obligations compared to traditional TV services.

Addressing Concerns in the Draft Broadcast Services Bill 2024:

1. Refine Definitions: Clarify terms like "systematic activity" and "digital news broadcaster" to prevent broad interpretations.
2. Stakeholder Consultation: Expand consultations to include independent creators, civil society, and legal experts for diverse input.
3. Balance Regulation and Freedom: Safeguard freedom of speech while ensuring regulations are proportionate and transparent.
4. Simplify Compliance: Reduce compliance burdens for creators, possibly offering support for setting up content evaluation committees.
5. Review Penalties: Reassess penalties to ensure fairness, focusing on support and education rather than punishment.

Mains Link:

Q. Data security has assumed significant importance in the digitized world due to rising cyber crimes. The Justice B.N. Srikrishna Committee Report addresses issues related to data security. What, in your view, are the strengths and weaknesses of the Report relating to the protection of personal data in cyberspace? (UPSC 2018)

Prelims Link:

Q. In India, it is legally mandatory for which of the following to report on cyber security incidents? (UPSC 2017)

1. Service providers
2. Data centres
3. Body corporate

Select the correct answer using the code given below:

(a) 1 only
(b) 1 and 2 only
(c) 3 only
(d) 1, 2 and 3

Ans: D

Topics: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

6. COUNTING NUTRITIONAL DEFICIENCY AMONG THE POOR

Context:

The **Household Consumption Expenditure Survey (2022-23)** has highlighted significant nutritional deficiencies among India's poor.

Key Findings of the Report

- Expenditure Thresholds: Rural India needs ₹2,197 (₹1,569 for food, ₹628 for non-food); Urban India needs ₹3,077 (₹2,098 for food, ₹979 for non-food) for adequate nourishment.
- The proportion of Poor: **17.1%** in rural and 14% in urban areas are considered poor.
- Thresholds for Poorest 10%: Increase to ₹2,395 for rural and ₹3,416 for urban, raising deprivation to **23.2% (rural) and 19.4% (urban)**.
- Calorie Intake: The poorest 5% consume 1,564 kcal (rural) and 1,607 kcal (urban), below the required 2,172 kcal (rural) and 2,135 kcal (urban).

What is Nutritional Security?

Nutritional security ensures access to adequate, safe, and nutritious food for a healthy life, focusing on both the quality

and quantity of food.

Why is it Necessary?

1. Holistic Health: Goes beyond calorie intake to ensure a balanced nutrient supply.
2. Economic Impact: Improves productivity and reduces healthcare costs, with micronutrient deficiencies costing 0.8%-2.5% of GDP.
3. Cognitive Development: Enhances IQ and educational outcomes, breaking poverty cycles.
4. Disease Resilience: Strengthens immune response, reducing healthcare burdens.
5. Biodiversity: Promotes dietary diversity and supports agricultural biodiversity.

Key Challenges in Handling Nutrition in India

1. Economic Inequality: 74% can't afford a healthy diet.
2. Inadequate Dietary Intake: Shift to low-quality, processed foods lacking essential nutrients.
3. Poor Sanitation: Only 69% use improved sanitation facilities.
4. Lack of Health Infrastructure: Low doctor (0.73) and nurse (1.74) density per 1000 people.
5. Delayed/Inconsistent Delivery: Only 50.3% of children receive Anganwadi services.
6. Inadequate Monitoring: Poor assessment of program effectiveness.

Other reasons:

1. **Green Revolution**: Focus on staple crops has led to micronutrient deficiencies.
2. **Climate Change**: Affects crop yields and increases food prices.
3. **Knowledge Gap**: Low nutritional literacy impacts dietary choices.
4. **Urbanization**: Leads to food deserts and unhealthy lifestyles.
5. **Policy Implementation**: Inefficiencies and underutilization of funds hinder progress.
6. **Food Safety**: Issues like adulteration and contamination reduce food quality.
7. **Food Loss**: Significant waste and poor storage raise food prices.

Initiatives taken by India:

Initiative	Description
Mission Poshan 2.0	Focuses on improving maternal nutrition and child feeding norms, integrating multiple schemes.
Integrated Child Development Services (ICDS) Scheme	Provides food, preschool education, and primary healthcare to children under 6 and their mothers.
Pradhan Mantri Matru Vandana Yojana (PMMVY)	Offers financial incentives to pregnant and lactating mothers for health and nutrition.
Mid-Day Meal Scheme (PM Poshan)	Supplies nutritious meals to school children; introduces millets to enhance dietary diversity.
Scheme for Adolescent Girls (SAG)	Aims to improve the nutritional and health status of adolescent girls.
Mother's Absolute Affection (MAA)	Promotes breastfeeding to improve child health and nutrition.
Poshan Vatikas	Establishes nutrition gardens to provide locally grown nutritious food for children and mothers.

Recommendations of the Child Nutrition Report 2024:

1. Enhance data systems to assess Child Food Poverty severity.
2. Reform food systems to make nutritious foods accessible, affordable, and desirable.
3. Utilize health systems for essential nutrition services, including child feeding counselling.
4. Transform food, health, and social protection systems for children.

What more needs to be done:

1. **SBCC Plan:** Develop a targeted Social and Behavior Change Communication (SBCC) plan.
2. **Local Foods:** Promote consumption of nutritious, locally available foods.
3. **Communication**: Use local languages and various channels (radio, videos, outreach).
4. **Nutrition-Integrated Welfare:** Expand programs like PDS to include diverse, nutrient-rich foods and introduce nutrition education.

5. **Nutrition Coupons**: Provide customized food coupons for malnourished families to buy nutrient-rich foods.
6. **School Nutrition Hubs**: Revamp Mid-Day Meals with balanced diets, school gardens, and health check-ups.
7. **Nutri-Preneur Program**: Support businesses focusing on nutrition with funding and mentorship.
8. **Nutrition Surveillance**: Set up a system for real-time nutritional data and emergency responses.
9. **Nutri-Smart Agriculture**: Promote diverse, nutrient-rich crops with incentives for farmers.
10. **Community Champions:** Train local volunteers to educate and counsel on nutrition.

Insta Links:

1. Acute malnutrition risking 30 million children's lives

Mains Link:

Q. How far do you agree with the view that the focus on lack of availability of food as the main cause of hunger takes the attention away from ineffective human development policies in India? (UPSC 2018)

Prelims Link:

Q. Which of the following is/are the indicators/ indicators used by IFPRI to compute the Global Hunger Index Report? (UPSC 2016)

1. Undernourishment
2. Child stunting
3. Child mortality

Select the correct answer using the code given below:

(a) 1 only
(b) 2 and 3 only
(c) 1, 2 and 3
(d) 1 and 3 only

Ans: C

Topics: India and its neighbourhood- relations.

7. BANGLADESH CRISIS: OUSTER OF SHEIKH HASINA'S GOVERNMENT

Context:

Sheikh Hasina has **resigned as Bangladesh's Prime Minister amid violent protests**. The Bangladesh Army, **led by General Waker-Uz-Zaman**, has taken control and is in the process of forming an interim government.

What led to the protest and fall of the government?

Sheikh Hasina's government collapsed due to protests over **a job quota system** favouring descendants of **independence fighters, student dissatisfaction, crackdown on opposition, and alleged human rights abuses,** leading to her resignation.

What was the Army's role?

Bangladesh Army is said to have refused to intervene in the student's protest, thereby leaving no choice for the Government, but to resign.

Over the years, the Bangladesh Army has played a **significant role in the country's politics**, directly or indirectly controlling it for **15 years after the assassination of Sheikh Mujibur Rahman (the country's founding figure) in 1975**. The army's influence persisted until **Sheikh Hasina, Mujib's daughter, rose to power in 2008**. In 2024, following widespread protests, the army **once again intervened**, taking responsibility for forming an interim government after Hasina's resignation.

Impact of Sheikh Hasina's Exit on India:

1) **Loss of a Trusted Partner**: India lost a reliable ally in Sheikh Hasina, who was sensitive to India's security concerns and collaborated on counter-terrorism.
2) **China's Influence**: Hasina's exit may strengthen China's influence in Bangladesh, complicating India's regional strategy, especially with other challenging neighbours.
3) **Border Security Concerns**: The new government could be less friendly, increasing border security issues for India, especially given the existing tensions with Pakistan and China.
4) **Islamist Extremism:** Hasina's departure may lead to a resurgence of Islamist extremism in Bangladesh, which could threaten India's security.
5) **Transit and Connectivity**: India's logistical supply routes to its Northeast may be impacted if the new government revises transit agreements.
6) **Potential Anti-India Stance**: The Bangladesh Nationalist Party (BNP), if it comes to power, might adopt an anti-India stance, straining bilateral relations.

India's Stand During the Crisis:

1. India views the **Bangladesh protests as an internal matter**.
2. **Despite Hasina's undemocratic practices**, India has supported her, creating tensions with the West, which has criticized her authoritarian methods.

What should India do?

1. Supporting Allies: India must navigate distancing itself from Hasina while engaging her opponents to maintain regional influence.
2. Geopolitical Risks: With Hasina gone, India must be cautious of Pakistan and China's potential influence on Bangladesh, working with global partners to ensure stability.
3. Beyond 1971: India must move beyond the 1971 liberation narrative and engage with diverse political forces in Bangladesh based on mutual long-term interests.
4. Partition's Legacy: The crisis underscores unresolved tensions from Partition, reminding both nations of the ongoing impact on their relationship.
5. Regional Dynamics: India's strategy must recognize the independent agency of its neighbours, requiring patience and adaptability in its foreign policy approach.

Dimensions of India-Bangladesh Relations**:**

Dimensions	Description
Historical Ties	Initially forged during the 1971 Liberation War, bilateral relations have evolved positively under Sheikh Hasina's leadership since 1996, culminating in significant agreements such as the Ganga water-sharing treaty
Economic Cooperation	Bilateral trade growth, reaching USD 14 billion in 2023-24. Bangladesh is India's biggest trade partner in South Asia and India is the second biggest trade partner of Bangladesh in Asia. Joint feasibility study for Comprehensive Economic Partnership Agreement (CEPA)
Infrastructure	Resolved Land Boundary Agreement (LBA) and maritime disputes. Inauguration of Akhaura-Agartala Rail Link. BIMSTEC Master Plan for Transport Connectivity. Matarbari Port development connecting Dhaka and Northeast India.
Energy	Bangladesh's electricity imports from India. Cooperation in the Rooppur Nuclear Power Plant project.
	India-Bangladesh Friendship Pipeline **will transport** one million Metric Tonnes Per Annum (MMTPA) of High-Speed Diesel from Siliguri, West Bengal, to Parbatipur, Dinajpur district, Bangladesh.
Defence Cooperation	Shared border of 4096.7 km. Joint military exercises (Army – Exercise Sampriti, Navy – Exercise Bongo Sagar).
Multilateral Cooperation	Engagement in SAARC, BIMSTEC, and IORA forums.
	According to the India Tourism Statistics Report 2022 of the Ministry of Tourism, Bangladesh has been the second-largest tourist-generating market for India in the year 2021.

Other major challenges for India in its neighbourhood:

Country	Major Challenges for India
Pakistan	**Strained relations due to the Kashmir** conflict and cross-border terrorism.
	Economic crisis, political instability, and **China-Pakistan Economic Corridor (CPEC) ties.**
	Recent terrorist attacks, allegedly sponsored by Pakistan.
Nepal	**Political Instability Affecting Policy C**onsistency
	Growing economic ties with China, especially through the Belt and Road Initiative (BRI).
	Ongoing border disputes, including Kalapani.
Sri Lanka	**Economic recovery** with India's support.
	Ongoing issues like the **Katchatheevu island dispute**, Tamil minority treatment, and implementation of the 13th Amendment.
Maldives	Shift towards **Pro-China stance** after recent elections.
	Calls for reducing Indian military presence and the **"India-Out" campaign.**
Myanmar	**Military coups and civil unrest** led to instability.
	Challenges include the Rohingya refugee influx, increased Chinese influence, and balancing strategic interests with human rights concerns.
Bhutan	**Efforts to diversify foreign relations** and reduce economic dependence on India.
	Unresolved Doklam issue involving China.
	Need to **update India-Bhutan relations** to reflect Bhutan's evolving aspirations.
Afghanistan	**Taliban's return to power** reshaping regional geopolitics.
	India's investments in Afghan development are at risk.
	Maintaining strategic influence through humanitarian assistance.

Insta Links:

- India-Bangladesh relations

Mains Links:

Q. Analyse internal security threats and transborder crimes along Myanmar, Bangladesh and Pakistan borders including Line of Control (LoC). Also discuss the role played by various security forces in this regard. (USPC 2018)

Q. Project 'Mausam' is considered a unique foreign policy initiative of the Indian Government to improve relationships with its neighbours. Does the project have a strategic dimension? Discuss. (UPSC 2015)

Prelims Links:

With reference to river Teesta, consider the following statements: (UPSC 2017)

1. The source of river Teesta is the same as that of Brahmaputra but it flows through Sikkim.
2. River Rangeet originates in Sikkim and it is a tributary of river Teesta.
3. River Teesta flows into Bay of Bengal on the border of India and Bangladesh.

Which of the statements given above is/are correct?

(a) 1 and 3 only
(b) 2 only
(c) 2 and 3 only
(d) 1, 2 and 3

Ans: (b)

GENERAL STUDIES – 3

Topics: Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

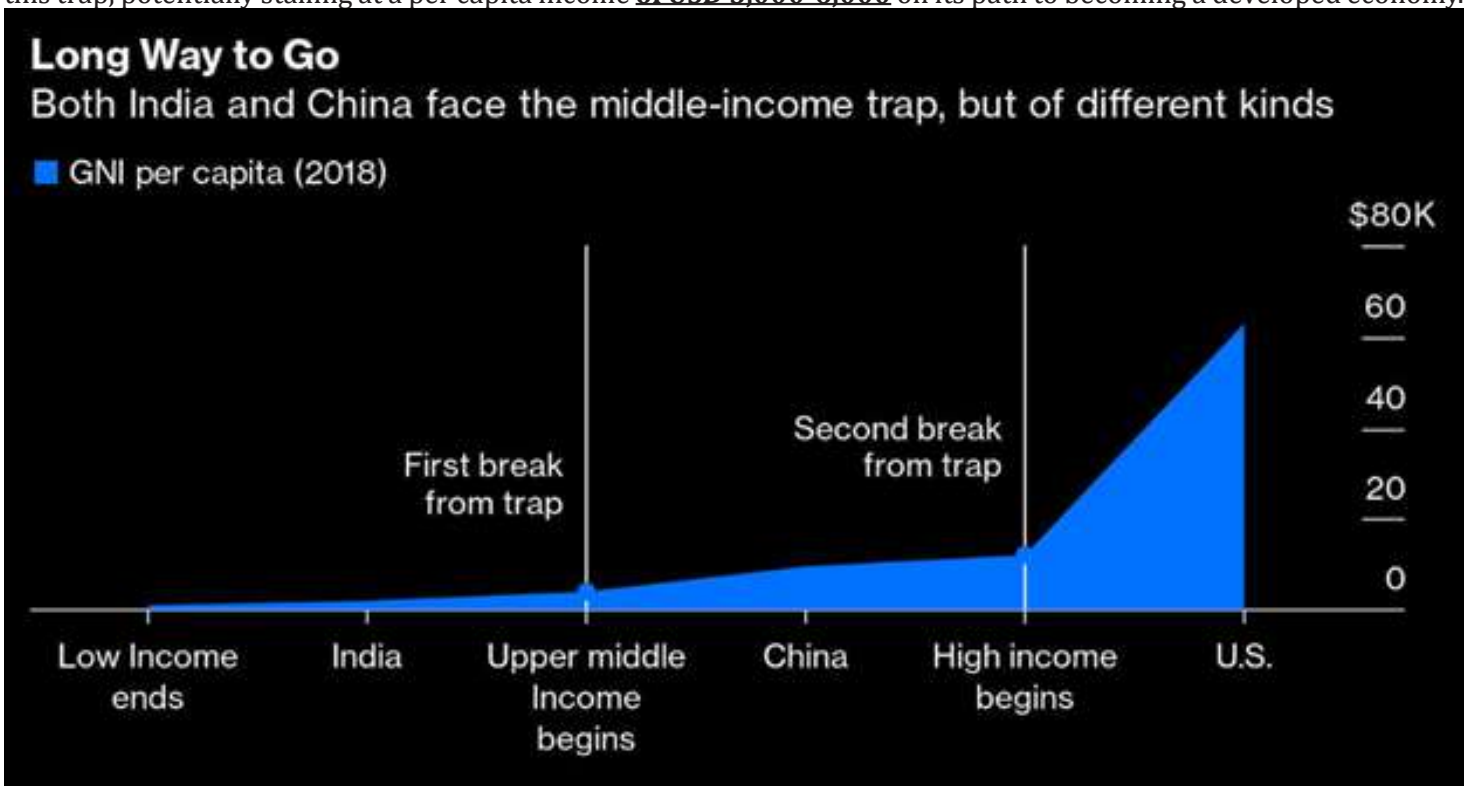
8. WORLD BANK REPORT 2024: MIDDLE-INCOME TRAP

Context:

The World Bank **Report 2024** report offers a roadmap to help developing countries **escape the Middle-Income Trap**, where countries with GDP per capita **between $1,136 and $13,845** face growth slowdowns and struggle to reach high-income levels.

What is a Middle-Income Trap?

The World Bank **defines the middle-income trap** as a situation where a middle-income country struggles to become a high-income economy due to rising costs and declining competitiveness. There are concerns that India may fall into this trap, potentially stalling at a per capita income **of USD 5,000-6,000** on its path to becoming a developed economy.



Key Highlights of the Report:

- **Wealthy countries often hit a growth slowdown** at around $8,000 per capita (10% of U.S. GDP per person).
- **Since 1990, only 34 middle-income countries (MICs)** have transitioned to high-income status.
- **As of end-2023, 108 MICs host 75%** of the global population and generate over 40% of global GDP.
- **Challenges for MICs include ageing populations**, rising protectionism, and the need for faster energy transitions.
- **India, a Lower MIC since 2007**, has a GNI per capita of **$2,540 and may take 75 years to reach one-quarter of U.S. income per capita** at current trends.

Why Countries Fall into the Middle Income Trap

1. Struggles of Developing Countries: Middle-income nations often lag due to competition with low-wage producers and lack of innovation, stalling growth.
2. Structural Shift: Transitioning sectors or growth drivers risk stagnation in per capita income, especially if innovation capabilities are lacking.
3. Rising Income Inequality: High-income inequality, exemplified by large wealth gaps, restricts consumer spending and economic progress.

Reasons for India's Susceptibility to Middle-Income Trap:

Reason	Description
Rising Protectionism	**Increasing global protectionism** may prevent India from benefiting from **hyper-globalization**, unlike China, South Korea, and Japan.
Structural Transformation	**India's high dependency on agriculture (45-50% of the population)** and **premature deindustrialization** hinder the shift from primary to secondary and tertiary sectors.
State Control	**Persistent state control**, including retrospective taxation and unstable policies, limits private sector growth and investment.
Human Capital Formation	The **quality of education and employability of graduates** is below international standards, with around 55% of graduates deemed unemployable.
Climate Change	**Frequent climate-related disasters** and reliance on monsoon-dependent agriculture pose significant risks, consuming resources and impacting productivity.

Key Recommendations of the Report:

- Adopt the **3I (Investment, Infusion, Innovation) strategy**.
- **Stimulate business dynamism** by rewarding value-adding firms.
- **Provide equal opportunities** to women, minorities, and disadvantaged groups.
- **Reflect environmental costs** in energy prices to enhance economic efficiency.

What more can be done?

Action Needed	Description
Greater Divestitures	**Privatize inefficient public enterprises** to raise funds, improve productivity, and attract foreign investment.
Boost Middle Class	**Cut taxes or replace income tax with a consumption tax** to increase disposable income and simplify the tax system.
Increase Labor Force Participation	**Invest in education and skill development**; support initiatives like the **New Education Policy and Skill India Mission**.
Accelerate Infrastructure Pipeline	**Invest in and speed up the execution of infrastructure projects**, such as roads and power, to enhance connectivity and quality of life.
Build on Manufacturing Momentum	**Enhance India's role as a global manufacturing hub** with initiatives like PLI; improve ease of doing business and labour laws.
Boost Private Investment	**Attract more foreign and domestic investment** through support for infrastructure and manufacturing projects.
Implement Structural Reforms	**Undertake targeted reforms** to improve productivity and competitiveness in sectors like finance, urban planning, and e-commerce.
Increase Capital Accumulation	**Boost investment to achieve the USD 30 trillion** economy goal, with government support for infrastructure and manufacturing.

Mains Links:

Q. Define potential GDP and explain its determinants. What are the factors that have been inhibiting India from realizing its potential GDP? (UPSC 2020)

Prelims Links:

Q. Which of the following gives the 'Global Gender Gap Index' ranking to the countries of the world? [UPSC 2017]

(a) World Economic Forum
(b) UN Human Rights Council
(c) UN Women
(d) World Health Organization

Answer: (a)

9. RBI KEEPS REPO RATE UNCHANGED

Context:

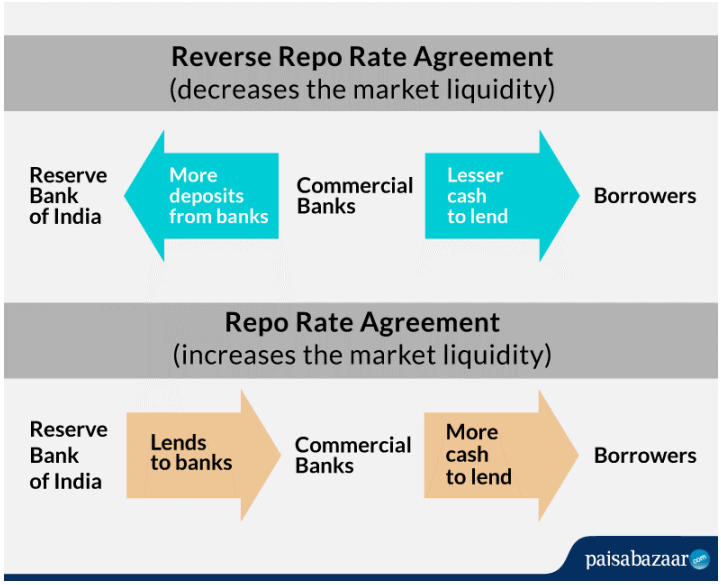
The Reserve Bank of India (RBI) has refrained from cutting the repo rate despite stable inflation rates. The repo rate, which influences loan EMIs, has remained unchanged since February 2023.

RBI Monetary Policy Meeting Summary:

1. **Repo Rate:** Held steady at **6.5%** for the ninth consecutive time.
2. **Inflation Drivers:** Core inflation is moderate, but food prices have pushed headline inflation to **5.1%.**
3. **Policy Stance:** MPC continues with a disinflationary approach while supporting growth.
4. **Rates**: Standing Deposit Facility at **6.25%,** Marginal Standing Facility and Bank Rate at **6.75%.**
5. **Growth Projections**: Real GDP growth for 2024-25 is projected at **7.2%,** with CPI inflation forecasted at **4.5%.**

What is the Repo Rate and who maintains it?

The repo rate is the interest rate at which the RBI lends money to commercial banks. It impacts economic activity: a lower rate stimulates borrowing and spending, while a higher rate discourages it. The RBI's monetary policy aims to maintain price stability, target a 4% inflation rate, and promote economic growth by adjusting the repo rate accordingly. Lowering the rate stimulates borrowing post-pandemic, while raising it curbs excessive spending during inflationary periods like the Russia-Ukraine conflict.



Other Tools for Controlling Interest rates

1. Open Market Operations (OMO): The RBI buys or sells government securities to adjust money supply and interest rates.
2. Cash Reserve Ratio (CRR): The percentage of deposits banks must hold with the RBI, influencing their lending capacity.
3. Statutory Liquidity Ratio (SLR): The percentage of deposits banks must invest in government securities, also affecting liquidity and interest rates.

Reasons for Not Cutting Interest Rates:

Reasons	Description
1) Sticky Inflation:	Despite a gradual decline, inflation hasn't reached the 4% target since January 2021, hovering around 5%
2) Commitment to Durable Inflation Targeting:	The RBI aims for sustained inflation around 4%, not just occasional dips below this level.
3) Strong Economic Growth:	India's GDP growth rate has been robust, with forecasts revised upwards to 7.2% for the current financial year, suggesting no urgent need for rate cuts to stimulate activity.
4) Fiscal Deficit Concerns:	The RBI's decision may be influenced by the forthcoming Union Budget and government borrowing plans, which could impact inflation or interest rates.

Understanding the Impact of High Interest Rates:

Positives:

1. Taming Inflation: High rates discourage borrowing and spending, reducing the money supply and easing inflationary pressures.
2. Financial Stability: Attract foreign investments, strengthening the rupee and foreign exchange reserves, boosting financial stability.
    1. E.g. India's foreign exchange reserves surged past $600 billion in 2023 amidst high interest rates, providing a cushion against global uncertainties.
3. Promoting Savings: Higher interest rates on deposits incentivize saving, increasing domestic capital availability for investment and growth.
    1. E.g. Fixed deposit rates above 7% in India have encouraged individuals to save more, leading to higher bank deposits.
4. Curbing Asset Bubbles: Discourage excessive speculation in assets like real estate and stocks, promoting financial market stability.
    1. Example: High interest rates during 2010-

11 helped cool down the overheating real estate market in India, preventing a potential bubble.

5. Encouraging Financial Discipline: High rates promote prudent borrowing and lending practices among businesses and individuals, reducing risk-taking and defaults.

Negatives:

1. Slower Economic Growth: Expensive borrowing can dampen investment and consumer spending, potentially slowing economic growth.
    1. E.g. High interest rates during 2019-20 contributed to a slowdown in India's GDP growth rate.
2. Increased Debt Burden: Existing borrowers face higher interest payments, straining finances and potentially leading to defaults.
3. Impact on Investment: High rates can discourage investments in key sectors like infrastructure and manufacturing, hindering long-term growth.
4. Pressure on Businesses: High borrowing costs can squeeze profit margins and hamper business expansion plans, potentially impacting job creation.
    1. E.g. Small and medium enterprises (SMEs) often face challenges in accessing credit at high interest rates.
5. Impact on Consumer Spending: High interest rates on credit cards and personal loans can reduce discretionary spending, impacting retail sales and overall consumption.
    1. E.g. High interest rates on auto loans have led to a slowdown in car sales in India.
6. Currency Appreciation: High interest rates can attract foreign capital, leading to currency appreciation, which can hurt export competitiveness.
    1. E.g. The Indian rupee's appreciation in 2023 due to high interest rates posed challenges for export-oriented sectors like textiles and IT.

Conclusion

The RBI's decision to maintain high interest rates reflects its efforts to balance inflation control with growth considerations. It will continue to monitor economic data and adjust rates as needed to achieve a harmonious outcome for the Indian economy.

Other steps announced by RBI in this MPC Meeting:

1. Rationalization of Export and Import regulations under the Foreign Exchange Management Act (1999) to boost ease of doing business.
2. Establishment of a Digital Payments Intelligence Platform (DPIP) using advanced technology to combat payment fraud.
3. Formation of a committee chaired by A.P. Hota to explore setting up a digital public infrastructure for DPIP.
4. Integration of UPI Lite into the e-mandate framework with an auto-replenishment feature for the UPI Lite wallet.
5. Revision of bulk deposit definition to include Single Rupee term deposits of ₹3 crore and above for Scheduled Commercial Banks (excluding Regional Rural Banks(RRBs)) and Small Finance Banks. For Local Area Banks, the threshold is ₹1 crore and above as applicable for RRBs.

About MPC:

The Monetary Policy Committee (MPC), established under the amended RBI Act of 1934, comprises six members: three from the RBI and three appointed by the government. It decides the policy repo rate aimed at meeting the inflation target. Each member holds one vote, with the Governor having a casting vote in case of a tie.

Insta Links:

- Variable Rate Repo (VRR)
- What is the RBI's MPC?

Mains Link:

Do you agree with the view that steady GDP growth and low inflation have left the Indian economy in good shape? Give reasons in support of your arguments. (UPSC 2019)

Prelims Link:

Which of the following statements is/are correct regarding the Monetary Policy Committee (MPC)? (UPSC 2017)

1. It decides the RBI's benchmark interest rates.
2. It is a 12-member body including the Governor of RBI and is reconstituted every year.
3. It functions under the chairmanship of the Union Finance Minister.

Select the correct answer using the code given below:
(a) 1 only
(b) 1 and 2 only
(c) 3 only
(d) 2 and 3 only
Ans: (a)

Q. If the RBI decides to adopt an expansionist monetary policy, which of the following would it not do? (UPSC 2020)

1. Cut and optimize the Statutory Liquidity Ratio
2. Increase the Marginal Standing Facility Rate
3. Cut the Bank Rate and Repo Rate

Select the correct answer using the code given below:
(a) 1 and 2 only
(b) 2 only
(c) 1 and 3 only
(d) 1, 2 and 3
Ans: (b)

Topics: Disaster and management.

10. REVIEW OF DAM DESIGN TO HANDLE GLACIAL LAKE OUTBURST FLOODS (GLOFS)

Context:

Following the **Teesta-III Hydroelectric dam collapse in October 2023**, the Central Water Commission (CWC) is reviewing the design flood of vulnerable dams to ensure they can handle **Glacial Lake Outburst Floods (GLOFs)**

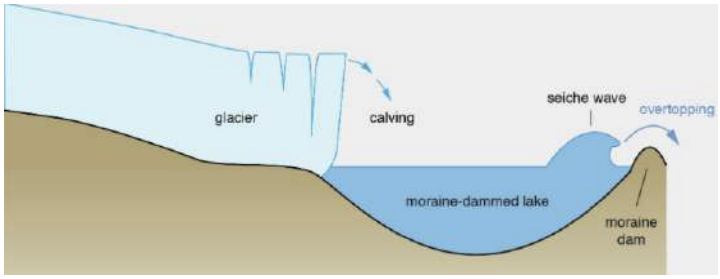
What are Glaciers?

Glaciers are **large masses of ice that form from the accumulation and compaction** of snow over long periods. They flow slowly downhill under their weight and gravity, shaping the landscape and playing a crucial role in Earth's climate and hydrology by storing and releasing freshwater.

Glaciers cover ~10% of the Earth's land surface, but they are shrinking rapidly across most parts of the world, leading to cascading impacts on downstream systems.

What is Glacial Lake Outbursts (GLO)?

A Glacial Lake Outburst (GLO) occurs when a **glacial lake, formed by melting ice and snow, suddenly releases a large volume of water**. This can happen due to the failure of natural ice or moraine dams holding the lake, often triggered by factors like **heavy rainfall, earthquakes, or the melting of surrounding ice**. The sudden release of water can lead to devastating floods downstream, causing significant damage to communities, infrastructure, and ecosystems.



Reasons for Glacial Lake Outburst Floods (GLOFs):

1. Geological: Earthquakes, breaches of moraine dams.
2. Morphological: Mass movements into glacial lakes, water seepage through glacial structures.
3. Physical: Excessive precipitation, cryoseism (non-tectonic seismic events in the glacial cryosphere).
4. Anthropogenic: Climate change and global warming.

Mounting GLOF Risks in the Himalayas:

1. **Glacial Retreat: Rising temperatures** lead to accelerated glacial melt, creating glacial lakes. The **increased volume of water** in these lakes raises the risk of GLOFs, threatening downstream communities.
2. **Glacial Lake Dynamics:** The formation of moraine-dammed lakes, often unstable, poses a significant risk. When the moraine dam weakens or breaches due to factors **like earthquakes or increased meltwater pressure, it can trigger a GLOF.**

India's Vulnerability to GLOFs:

1. ISRO's Atlas: Identified over 28,000 glacial lakes in the Himalayan basins.
2. Sikkim: 733 glacial lakes identified; 10 classified as vulnerable.
3. Uttarakhand: 13 out of 486 glacial lakes are vulnerable.
4. Jammu and Kashmir: Highest number of vulnerable lakes, with significant threats also in Arunachal Pradesh and Sikkim.

Urgent Call for heightened awareness and proactive measures:

1. **Preventing Catastrophic Floods:** GLO events can unleash massive floods downstream, causing loss of life, extensive damage to infrastructure, and economic devastation.
    a. For instance, the **1994 GLO in the Bhutanese Himalayas** resulted in a catastrophic flood disaster.
2. **Safeguarding Vulnerable Communities**: Many communities reside in downstream areas of glacial lakes, making them highly vulnerable to GLO events.
    a. Effective awareness measures are essential to protect these communities from harm.
3. **Threat to Livelihoods:** Many communities in the Himalayan region depend on agriculture and livestock farming. GLOFs can damage agricultural fields, threaten livestock, and disrupt livelihoods, leading to food insecurity.
4. **Preserving environmental integrity**: GLO events disrupt ecosystems downstream, leading to long-term environmental damage.
    a. Mitigation efforts aim to minimize such ecological impacts and maintain environmental balance.
5. **Infrastructure Resilience**: Designing infrastructure with resilience against GLOFs, such as building **protective barriers** and **establishing safe evacuation routes**, is essential to minimize the impact on vulnerable communities.
6. **Community Engagement**: Raising awareness and involving local communities in disaster preparedness and response strategies is pivotal. Communities need to be equipped with the knowledge and tools to protect themselves during GLOF events.

NDMA guidelines in mitigating the risks associated with GLOFs:

Guideline	Details
1. Identifying Potentially Dangerous Lakes	Use field observations, historical data, geomorphologic and geotechnical analysis.
2. Use of Technology	Promote synthetic-aperture radar imagery for detecting changes in water bodies and develop remote monitoring methods.
3. Channelling Potential Floods	Implement controlled breaching, pumping, siphoning, or creating tunnels through barriers.
4. Uniform Codes for Construction Activity	Develop frameworks for construction and land use planning in vulnerable zones.
5. Enhancing Early Warning Systems (EWS)	Increase the number of operational GLOF EWS; currently, only a few exist in the Himalayas.
6. Training Local Manpower	Train locals for search and rescue, shelter planning, and relief distribution.
7. Comprehensive Alarm Systems	Combine acoustic alarms with modern communication technologies like smartphones.

Measures to Mitigate GLOF Disasters:

- Monitoring: Intensify meteorological monitoring and real-time data collection at glacier lakes and downstream rivers.
- Technology: Use satellites and drones for regular monitoring of glacier lakes.
- Safety Standards: Revise and enforce strict safety standards for infrastructure in mountainous areas.
- Construction Regulation: Apply stringent quality control and regulations for construction near rivers.
- Scientific Research: Expand research on glacier behaviour and climate change impacts in the Himalayas.

Conclusion

By understanding these risks and implementing comprehensive mitigation strategies, we can reduce the potential devastation caused by GLO events, protect vulnerable communities, and preserve the environment, ultimately contributing to a more resilient and sustainable future.

Mains Links:

Q. Dam failures are always catastrophic, especially on the downstream side, resulting in a colossal loss of life and property. Analyze the various causes of dam failures. Give two examples of large dam failures. (UPSC 2023)

GENERAL STUDIES – 4

1. P.R. SREEJESH

Context:

PR Sreejesh's journey from **a small farmer's son in Kerala**, where his father **sold a cow to buy him a hockey kit**, to winning a **bronze medal for India at the Tokyo Olympics is truly inspiring.** His career highlights include leading India to victory in numerous tournaments and becoming a key player in the 2024 Paris Olympics.

Ethical Values from P.R. Sreejesh

- Embodying dedication, perseverance, humility.
- Reflecting commitment to excellence.
- Showing respect for sport.
- Expressing gratitude for support.
- Underscoring hard work, resilience, and integrity.

2. MOHANLAL PLEDGES RS 3 CRORE FOR WAYANAD REHABILITATION

Actor Mohanlal, in his role as a Lieutenant Colonel, visited **landslide-hit Wayanad and pledged Rs 3 crore** for rehabilitation efforts. He inspected affected areas, interacted with rescue teams, and emphasized the scale of the disaster. His **Vishwashanthi Foundation** will also aid in rebuilding local infrastructure.

Ethical Values of Actor Mohanlal:

1. Compassion: Demonstrates empathy by supporting disaster-stricken areas and pledging significant financial aid.
2. Responsibility: Takes an active role in disaster relief and recovery efforts.
3. Leadership: Leads by example through personal involvement and mobilizing resources for humanitarian causes.
4. Commitment: Shows dedication to both his professional duties and community service.

3. AI NEEDS CULTURAL POLICIES, NOT JUST REGULATION

Context:

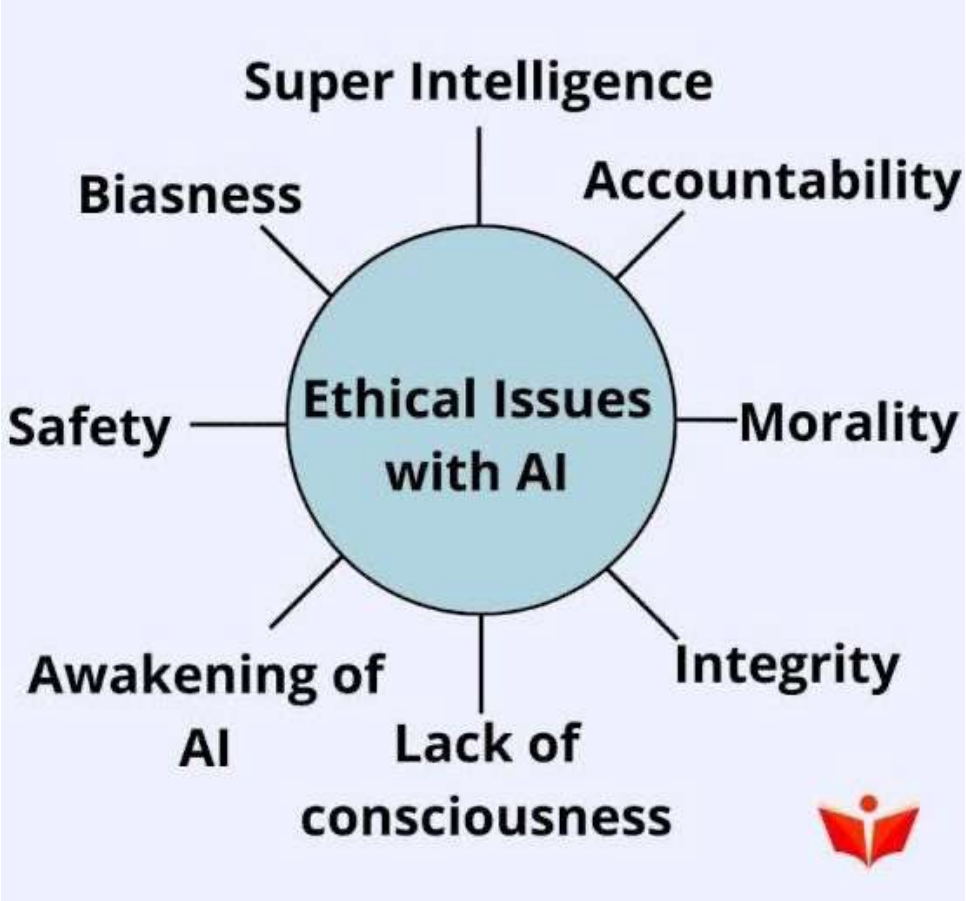
To **fully realize AI's potential and ensure its equitable benefits**, we need more than just regulation; we must promote high-quality data as a public good.

What is Artificial Intelligence (AI)?

Artificial Intelligence (AI) is the **ability of a computer or robot to perform tasks that typically require human intelligence**, such as reasoning, learning, and problem-solving. **Machine Learning (ML) and Deep Learning (DL)** allow AI to learn from large data sets.

What is Ethical AI?

Ethical AI involves **developing and using AI systems** in ways that align with **ethical principles, societal values, and human rights,** ensuring benefits while minimizing harms and biases.



AI's Potential for Ethical and Moral Behaviour:

Aspect	AI's Potential for Ethical and Moral Behaviour
Views	
Understanding Ethics and Morality	For e.g., AI systems can be trained to identify hate speech and offensive content to maintain a respectful online environment.
Bias Mitigation	AI can be programmed to **mitigate biases and avoid unfair discrimination.**
Decision-Making	AI can make ethical decisions based on predefined rules and data. (but lacks true moral understanding)
Counterview	
Learning from Data	AI learns from data, which might include biased or unethical information, leading to unintended consequences.
Ethics in AI: Kantian Perspective	**Applying Kantian ethics to AI decision-making** within governance raises concerns. Delegating decisions to algorithms could undermine human moral reasoning and responsibility. **Isaac Asimov's 'Three Laws of Robotics'** also highlights the challenges in translating ethics into AI rules.
Programming Ethics into AI: A Complex Task	Programming ethical AI **is more challenging** than programming AI for tasks like chess due to the intricate nature of ethical considerations.
Autonomy and Intent	**AI lacks consciousness and intent**, making its actions neither inherently moral nor immoral. **E.g.,** A robot that assists the elderly with daily tasks completes them efficiently but without genuine care or compassion.
Accountability and Liability	As AI assumes decision-making roles, accountability questions arise. If AI-based decisions turn out to be unethical, who bears responsibility? Punishing AI is problematic as it lacks emotions. Deciding who is accountable—AI developer, AI user, or AI itself—poses a significant challenge
Unintended Consequences	**E.g., Social media algorithms**, while aiming to show relevant content, might inadvertently create echo chambers and reinforce biases.
Continuous Learning	**AI's ability to learn and adapt** can lead to ethical shifts over time, requiring ongoing evaluation.
Human Oversight	The ethical behaviour of **AI often requires human oversight and intervention**. **E.g.,** Content moderation platforms use AI to flag potentially inappropriate content, but human moderators make final decisions.

Steps Taken for Ethical AI:

Steps	Description
International	**Global Alliance for Social Entrepreneurship**: Launched AI for Social Innovation initiative at WEF 2024 with Microsoft to promote positive AI impact and responsible guidelines. **Examples**: China, Canada, and Singapore have AI regulations
	EU AI Act: Comprehensive regulation for AI risk governance and citizen protection
	California: Bill for AI safety testing to prevent misuse.
	UK AI Safety Summit: The 2023 summit focused on AI safety and international cooperation.
	Tech Giants: Microsoft, Meta, Google, Amazon, and Twitter have responsible AI teams for ethical oversight
National	**Advisory on AI Models**: MeiTY issued guidance on AI models and deepfakes in 2024.
	IndiaAI Mission: Promotes AI innovation through public-private partnerships, improving data quality and ethical AI.
	Responsible AI for Youth: National program launched for youth.
	National Strategy on AI: NITI Aayog's 2018 strategy for safe, inclusive AI adoption across sectors with the "AI for All" mantra.

Conclusion:

Ethics integration into AI is intricate, and its implications must be approached with care. While AI can contribute to decision-making, ensuring its ethical behaviour requires addressing complex challenges and considering liability scenarios.

For Generative AI: What are the potential applications and ethical concerns? Click Here

Insta Links:

- A new global standard for AI ethics

CONTENT FOR MAINS ENRICHMENT

Topic in News	Usage in Answers
1. VINESH PHOGAT'S INSPIRING JOURNEY TO THE OLYMPICS	Indian wrestler **Vinesh Phogat's Olympic journey was marked by resilience** despite recent setbacks. Although disqualified from the Paris 2024 Olympics for exceeding the weight limit by 100 grams, Phogat's achievements remain remarkable. Just a day before, she defeated **Japan's Yui Susaki**, the reigning Olympic champion, to become the first Indian woman wrestler to reach an Olympic final. **Key ethical values from Vinesh Phogat's life:** 1. Resilience: Overcoming setbacks and criticism to continue pursuing her goals. 2. Determination: Persisted despite injuries, controversies, and disqualification. 3. Courage: Took a stand for justice and faced challenges head-on esp. during wrestler's protest 4. Commitment: Dedicated herself to wrestling and the future of young wrestlers. 5. Selflessness: Fought not only for her career but for the betterment of others in her sport.
2. ARUNACHAL PRADESH: FREE SCHOOL FOR ORPHANS	**Lama Thupten Phuntsok founded Manjushree Vidyapeeth in Tawang, Arunachal Pradesh**, in 1998 to support orphaned and underprivileged children. What began with just 17 students in a small shed has grown into a thriving school **housing over 300 children,** providing them with free education, shelter, and food. The school has helped many students become professionals and has received several awards and government support. **Ethical aspects of Lama Thupten Phuntsok's Manjushree Vidyapeeth:** 1. Child Welfare: Providing education, shelter, and food to orphaned and underprivileged children. 2. Community Support: Addressing local challenges and contributing to the community's well-being. 3. Equity: Offering opportunities and vocational training regardless of a child's background. 4. Sustainability: Reliance on diverse funding sources, including donations and sponsorships, for long-term support.

FACTS FOR PRELIMS

GS-1

History

1. HISTORY OF CLOCK

Context:

Throughout history, **timekeeping has evolved from basic sundials and water clocks to advanced atomic and nuclear clocks**.

Period	Clock Type	Description
Ancient Times	Sundials, Water Clocks, Hourglasses	Used sunlight to cast shadows, and the flow of water or sand to measure time.
Middle Ages	Mechanical Clocks	Introduced the verge escapement mechanism, followed by spring-driven and pendulum clocks, enhancing accuracy.
18th Century	Marine Chronometer	Invented by John Harrison, revolutionized navigation by providing precise timekeeping at sea for determining longitude.
19th Century	Electric Clocks	Emerged using batteries or motors, moving away from purely mechanical components.
20th Century	Quartz Clocks	Used quartz crystals oscillating at a fixed frequency for accurate time measurement.
Modern Times	Atomic Clocks	Use lasers to excite atoms, achieving extreme accuracy in time measurement.

Current advancements include **optical clocks, which use higher-frequency radiation for even greater precision, and researchers are working on nuclear clocks**, which could potentially offer even higher accuracy by using the nuclei of atoms as resonators.

Geography

2. COPPER

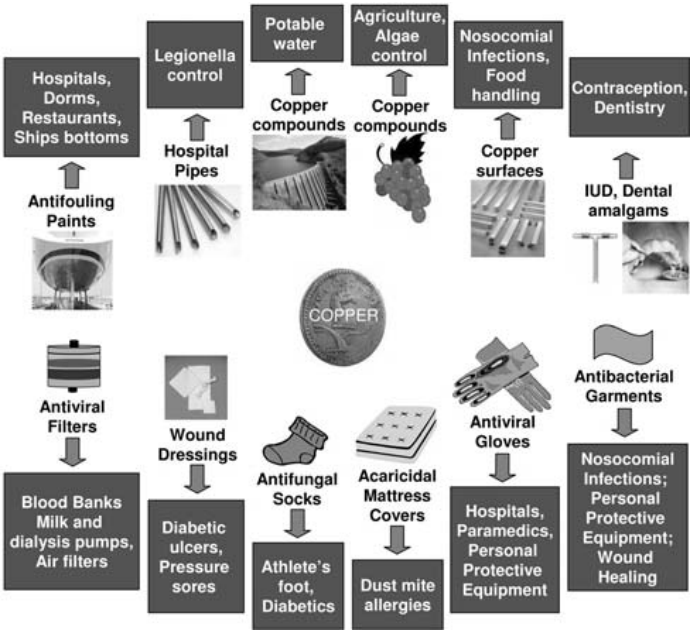
Context:

Many miners are seeking to **register copper from the Democratic Republic of Congo (DRC) for delivery against London Metal Exchange (LME) contracts.**

- This **move would provide financing opportunities for producers in an oversupplied market and generate fee income for the LME**, **which has not accepted new Russian metal**.

Copper is an **excellent conductor of electricity and heat, making it essential for electrical wiring and electronics.**

The top copper-producing countries include **Chile, Peru, China, the United States, and the Democratic Republic of the Congo (DRC).**



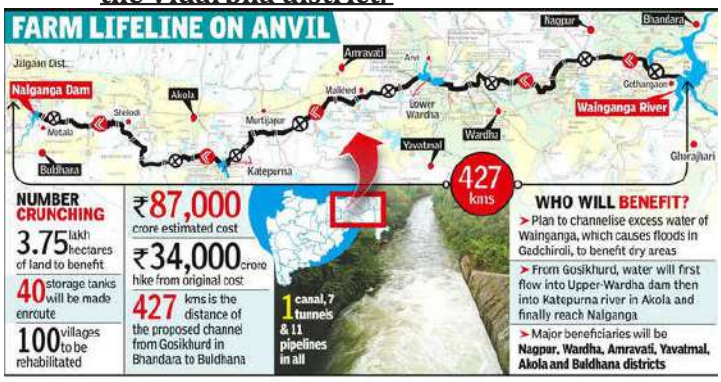
3. WAINGANGA-NALGANGA RIVER LINKING PROJECT

Context:

The **Maharashtra government** has approved an **irrigation project to address drought relief in the Marathwada region**.

- The **Wainganga-Nalganga** river linking project aims to **irrigate around four lakh hectares of land,** providing significant **relief to drought-affected farmers.**
- **The project will transfer water from the Godavari River to the Wainganga Project in Buldhana district**.
- The water will be used for **irrigation, drinking,**

and industrial purposes across 15 talukas in the Vidarbha district.

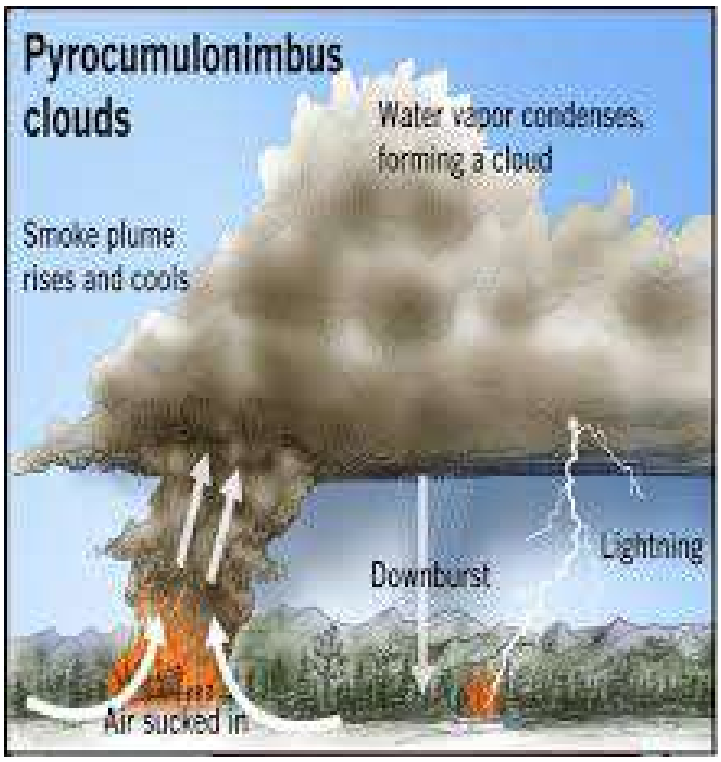


4. PYROCUMULONIMBUS CLOUDS

Context:

Pyrocumulonimbus clouds, formed during **extremely hot wildfires or volcanic eruptions**, **are becoming more common due to rising global temperatures.**

- These clouds develop when **intense heat from a fire causes surrounding air, carrying water vapor, smoke, and ash, to rise rapidly into the atmosphere.**
- As the air cools and condenses, a **pyrocumulus cloud forms, which can evolve into a pyrocumulonimbus cloud if conditions are right.**
- These towering **clouds, which can reach heights of 50,000 feet, generate thunderstorms but little rain,** potentially sparking new wildfires and spreading existing ones.



5. VERTICAL RISE OF STABLE LAND-FORMS

Context:

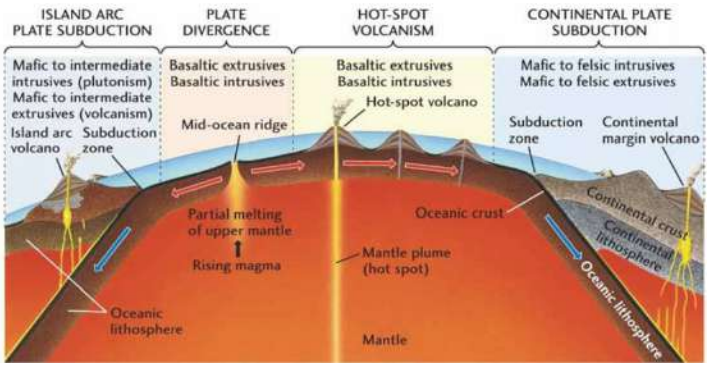
A recent study has **uncovered the reasons behind the vertical rise of stable landforms like the Western Ghats, the Guiana Shield, and the Drakensberg Mountains.**

- The **study links these topological features to the breakup of continental plates.**

The process of Vertical rise:

- When **continents split, the Earth's crust and upper mantle, known as the lithosphere, thins out, leading to the formation of steep coastal escarpments at rift margins.**
- This **process triggers "deep mantle waves,"** which **move along the continent's base and remove layers of rock, causing the land to rise—a process called isostasy**.
- The study explains that this **mechanism not only forms escarpments but also causes stable, distant regions (cratons) to rise vertically.**
- This process is also **linked to the rapid rise of diamonds from deep within the Earth**.

Additionally, the study highlights that such land uplift **can influence climate by increasing erosion, which draws down carbon dioxide from the atmosphere, and can create physical barriers that drive the evolution of new species** by forcing organisms to adapt to different environments.



6. TANTALUM

Context:

The Central Government has **notified 24 critical and strategic minerals**, including Tantalum, under the **MMDR Act, 1957**.

The Geological Survey of India (GSI) is prioritizing the exploration of these minerals, with six projects initiated between 2021 and 2025 across various states. These projects focus on Tantalum **and associated minerals**

like Tin, Niobium, and Lithium. Additionally, the government has **eliminated customs duty on Tantalum ores** and concentrates in the Union Budget 2024-25 to strengthen the supply chain.

About Tantalum:

What is Tantalum?	It is a grey, heavy, and **highly corrosion-resistant element** with the **atomic number 73**
Discovery	Tantalum is a **rare metal** which was first discovered in **1802 by Swedish chemist Anders Gustaf Ekenberg.**
Properties	Grey, heavy, highly corrosion-resistant
	Forms an **oxide layer when exposed** to air
	Ductile, allowing stretching into thin wires
	Extremely **resistant to chemical attack** at temperatures **below 150°C**
	High melting point, exceeded only by tungsten and rhenium.
Uses of Tantalum	**Capacitors** in the electronic sector for compact energy storage.
	Component in **chemical plants, nuclear power plants**, aircraft, and missiles.
	Substitute for platinum due to its high melting point.
	Used in medical applications for **surgical equipment and implants**.
	Composite with **tantalum carbide (TaC)** used in **high-speed machine tool cutting edges.**
Significance of Discovery	The discovery in the Sutlej River sand suggests a **potential domestic source, reducing import dependence** and benefiting India's electronics and semiconductor industry.
	India imports almost all of its Tantalum, mainly from the United States, the United Kingdom, and Germany. **Democratic Republic of the Congo** is the largest producer in the world.
Reserve in India	Tantalum ore is available in India in the form of **tantalite-columbite ore** in mines in **Bihar, Rajasthan, and Karnataka**.

GS-2

Governance

7. QCI SURAJYA RECOGNITION & RANKING FRAMEWORK

Context:

The Quality Council of India (QCI) has launched the **QCI Surajya Recognition & Ranking Framework** to **promote excellence among states, enhancing citizens' quality of life towards a developed India (Viksit Bharat).**

The framework evaluates performance across four pillars: **Shiksha (Education), Swasthya (Health), Samriddhi (Prosperity), and Sushasan (Governance).**

Key highlights:

- **Shiksha**: Uttar Pradesh leads in education, with Delhi also performing well.
- **Swasthya**: Chhattisgarh, Karnataka, Kerala, Rajasthan, Mizoram, and Manipur excel in health certifications under the Ayushman Arogya Yojana, while Tamil Nadu and Maharashtra top the Medical Entry Level Testing Labs rankings.
- **Samriddhi**: Gujarat, Karnataka, and Rajasthan lead in economic prosperity through ZED certifications, with Maharashtra and Bihar excelling in the MSME Competitive LEAN Scheme.

8. E-SANKHYIKI PORTAL

Context:

The **e-Sankhyiki Portal, launched by India's Ministry of Statistics and Programme Implementation (MoSPI)** on National Statistics Day 2024, is a **comprehensive data platform designed to provide easy access to reliable statistical data.**

- The portal offers two main modules: the Data Catalogue Module, which **catalogues over 2,300 datasets** including key indicators like the **Consumer Price Index and National Accounts Statistics**, and the Macro Indicators Module, which provides time **series data on major macroeconomic indicators**.
- Users can **filter, visualize, and download customized datasets**, making the data highly reusable.
- The **government has implemented robust data security measures, including cloud storage, security audits, and SSL technology, to ensure safe data dissemination.**
- The **portal supports data-driven decision-making, fostering effective policies and socio-economic development in India.**

9. NAMAMI GANGE MISSION 2.0

Context:
Four projects under the Namami Gange Mission 2.0 have been completed and are now operational. These projects aim to enhance the sewage treatment capacity of the Ganga River.

Key projects include:

1. Munger Project: Rs 366 crore, 175 km sewerage network, and a 30 MLD capacity STP.
2. Mirzapur Project: Rs 129 crore, 31 MLD STP to prevent untreated sewage from entering the river.
3. Ghazipur Project: Rs 153 crore, **1.3 km** I&D network, and 21 MLD STP.
4. Bareilly Project: Rs 271 crore, targeting pollution abatement with drain interception and diversion work.

About Namami Gange Mission 2.0 (NGM 2.0):
It is an extension of the **original Namami Gange Programme**, an integrated conservation mission launched in 2014 and **extended until March 2026.** The mission aims to **effectively abate pollution and rejuvenate** the River Ganga. It focuses on various key areas, including:

1. Sewage treatment
2. Riverfront development
3. River surface cleaning
4. Afforestation
5. Biodiversity conservation
6. Public awareness

Managed by the National Mission for Clean Ganga (NMCG) **under the Ministry of Jal Shakti**, **NGM 2.0** is fully funded by the central government. The mission has initiated 457 projects, with 280 completed as of February 2024, and has formed **139 District Ganga Committees** to oversee local implementation. The initiative also includes the development of **Common Effluent Treatment Plants (CETPs)** to manage industrial waste, reflecting its comprehensive approach to restoring and preserving the Ganga's ecological and cultural significance.

10. NANDINI SAHAKAR YOJANA

Context:
The Ministry of Cooperation recently informed about Nandini Sahakar Yojana in the Parliament.

About:

Aspect	Details
About Nandini Sahakar Yojana	Aims to **assist women cooperatives** in business model-based activities under the **National Cooperative Development Corporation (NCDC)**. Focuses on financial assistance, project formulation, hand-holding, and capacity development.
Funding	**No minimum or maximum limit** on financial assistance. Offers **2% interest subvention** on new and innovative activities, and **1% subvention** on other activities to reduce borrowing costs.
Eligibility	Open to cooperative societies with **at least three months of operation**. Eligible women cooperatives must be registered under State/Central Acts or have **a minimum of 50% women as primary members.**
Significance	Improves the **socio-economic status of women** by supporting entrepreneurial dynamism through women's cooperatives. Integrates business plan formulation, capacity development, credit, and subsidy, along with interest subvention from other schemes.
	As of March 2024, the NCDC has disbursed **over Rs. 6,426 crore** for women-led cooperatives across India.

GS-3

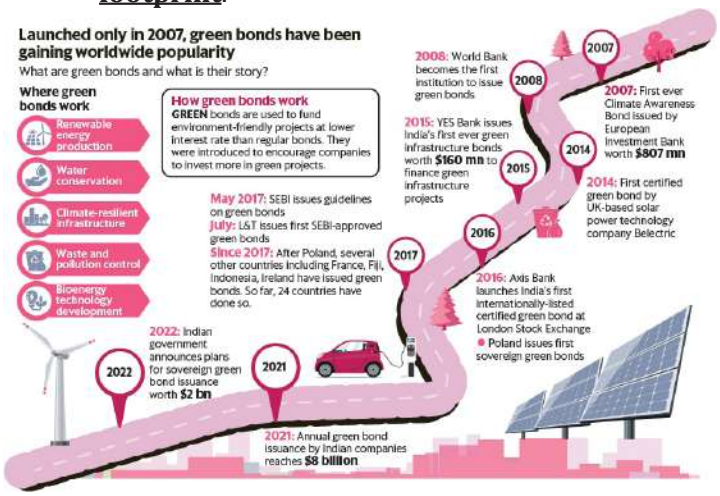
Indian Economy

1. SOVEREIGN GREEN BOND

Context:

The **second** sovereign green bond **auction of FY25 received a muted response**, with the **Reserve Bank of India (RBI) selling only ₹1,697 crore worth of 10-year green bonds** at a cut-off rate **of 6.90%, against a notified amount of ₹6,000 crore.**

- Traders were **unwilling to pay a premium (**greenium**) for the bonds,** which signifies the **additional value placed on green bonds for their environmental impact.**
- The funds from these bonds are **intended for public sector projects to reduce the carbon footprint**.



2. YEN CARRY TRADES

Context:

The yen carry trade has recently gained attention due to the **sharp appreciation of the yen following the Bank of Japan's (BoJ) interest rate hike and reduction in bond purchases**.

- This **prompted investors to unwind their positions to avoid losses**, leading to a **selloff in US tech stocks and impacting global markets, including Asia.**

What is a Carry Trade?

- A trading strategy where **investors borrow in a country with low interest rates and reinvest in assets of another country with higher returns.**
- It is a significant **source of flows in the global currency market.**

Yen Carry Trade:

- The **Japanese yen is a popular currency for carrying trades due to Japan's prolonged zero-interest rate policy.**
- Investors borrow yen at **low interest rates and invest in higher-yielding foreign assets, such as US equities.**

Current Focus on Yen Carry Trade:

- The **yen appreciated by over 3% against the dollar after the BoJ raised interest rates to 0.25% and reduced bond purchases**.
- This **move is seen as a shift towards normalizing monetary policy, prompting investors to unwind and carry trades to avoid losses.**

Impact of Unwinding Yen Carry Trades:

- **Unwinding has led to a severe selloff in US tech stocks**, spilling over to Asian markets, including India.

Impact on Indian Equities:

- Unclear how much yen carry **trade money has flowed into India, but it's likely some has**.
- Japanese foreign portfolio **investors hold significant assets in Indian equities.**
- A **stronger yen could worry Indian companies with unhedged yen borrowings**.

3. DEBT FOR DEVELOPMENT SWAPS (DEBT SWAP)

Context:

IMF recently released, the **"Debt for Development Swaps" framework** that aims to guide stakeholders on effectively using **debt swaps to achieve development goals**.

What are Debt Swaps?

Debt swaps are financial agreements where a country exchanges its existing debt for new obligations, typically linked to funding specific development projects or goals.

Types of Swaps:

1. **Bilateral Swaps:** Involves the writing off of official bilateral debt.
2. **Commercial Debt Swaps:** Targets debt held by private creditors.

Examples:

1. Debt-for-Nature Swap**:** For example, in 1987, the U.S. and Bolivia reached a deal where Bolivia's debt was reduced in exchange for funding environmental conservation projects.
2. **Debt-for-Education Swap:** For instance, in 2002,

Germany and Indonesia entered into an agreement where Indonesia's debt was reduced to fund educational programs.

3. **Debt-for-Health Swap:** Debt relief is provided in exchange for investments in public health initiatives, such as building hospitals or funding disease prevention programs.

These swaps help reduce the debt burden while also promoting social or environmental development.

Agriculture

4. KASTURI COTTON BHARAT

Context:

The **Ministry of Textiles in India** has launched the Kasturi Cotton Bharat **programme** to **enhance the traceability, certification, and branding of Indian cotton.**

- The **programme employs QR-based certification technology and blockchain for end-to-end traceability of Kasturi Cotton Bharat** tagged bales.
- A **microsite with QR code verification and a blockchain platform has been developed for this purpose**. The programme is **promoted both nationally and internationally**.

Kasturi Cotton Bharat:

A collaborative effort by the **Ministry of Textiles, the Cotton Corporation of India, trade bodies, and industry.**

Enhance the global competitiveness of **Indian cotton through self-regulation, branding, traceability, and certification, creating a sustainable ecosystem for stakeholders.**

Implementing Agency: The Cotton Textiles Export Promotion Council (**TEXPROCIL**) is designated as the apex body for implementing traceability, certification, and branding.

Infrastructure

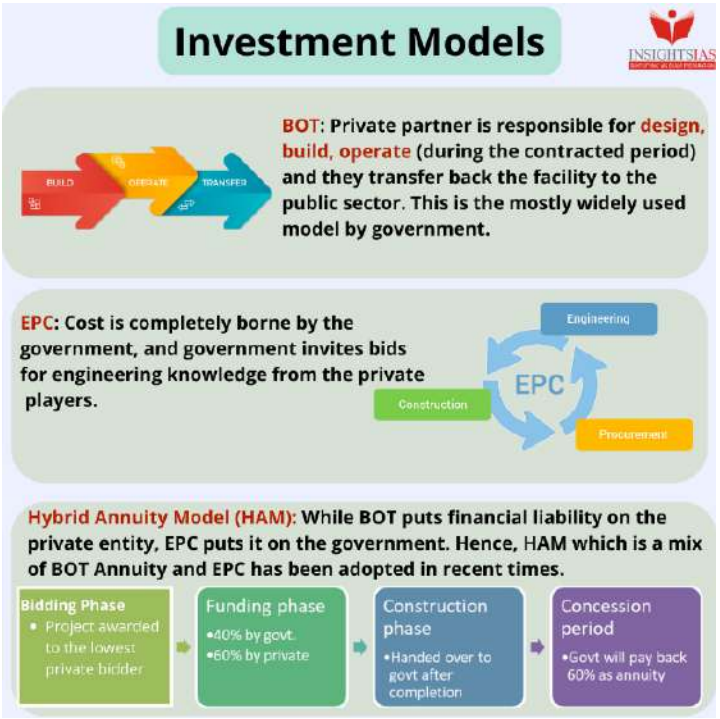
5. HIGH-SPEED ROAD CORRIDOR PROJECTS

Context:

The Indian government has **approved eight high-speed road corridor projects**, spanning 936 km, to **enhance logistics efficiency and connectivity across the country.**

Key projects include:

- **Agra-Gwalior National High-Speed Corridor:** An **88 km, 6-lane**, access-controlled corridor to be developed on **a** build-operate-transfer **(BOT) mode.**
- **Kharagpur-Moregram National High-Speed Corridor:** A **231 km, 4-lane corridor** c to be developed **in** Hybrid Annuity Mode **(HAM).**
- **Tharad-Deesa-Mehsana-Ahmedabad National High-Speed Corridor**: A **214 km, 6-lane** corridor on BOT mode.
- **Ayodhya Ring Road**: A 68 km, access-controlled ring road on HAM.
- **Pathalgaon-Gumla Section of Raipur-Ranchi National High-Speed Corridor**: A 137 km section on HAM.
- **Kanpur Ring Road**: A 47 km, 6-lane road in Engineering, Procurement, and Construction (EPC) mode.
- **Northern Guwahati Bypass**: A 121 km corridor on BOT mode, including a major bridge over the Brahmaputra.
- **Nashik Phata-Khed Corridor**: A 30 km elevated corridor near Pune **on BOT mode**.



Science & Technology

6. FASTAGS

Context:

New rules for FASTags, effective from August 1**, mandate that** FASTags **older than five years must be replaced, and KYC updates are required every three years.**

- The rules aim to **improve toll payment processes and reduce congestion**.
- Key updates include **linking vehicle details (registration and chassis numbers) with FASTags, verifying databases, and uploading clear photos of the car's front and side.**
- Additionally, **FASTags must be linked to a mobile number.**

How it works?

- FASTag is a pan India interoperable ETC system rolled out by Government of India for National Highways under the **National Electronic Toll Collection programme.**
- Simple to use and **reloadable tag employing radio-frequency identification technology** enabling **automatic deduction of toll charges** so that there is smooth passage through toll plaza without stopping for cash transaction.
- Tag is affixed on vehicle's windscreen after the tag account is active and is operational at many toll plazas across national and State highways in the country.
- It is linked to a prepaid account from which the applicable toll amount is deducted.

7. AXIOM-4 MISSION

Context:

India has selected two Indian Air Force Group Captains, for the **Axiom-4 mission to the International Space Station (ISS).**

- This mission marks the **fourth private astronaut mission to the ISS and is part of a joint ISRO-NASA effort envisioned** during the Prime Minister's **state visit to the U.S. in June 2023.**
- The **Indian crew members will undergo training in the U.S. starting the first week of August,** preparing to **undertake scientific research, technology demonstrations, and space outreach activities aboard the ISS.**
- This mission aims to **enhance India's human space program and strengthen ISRO-NASA collaboration.**

8. DARK PATTERNS

Context:

A study revealed that **52 out of the top 53 Indian apps use deceptive design practices called** dark patterns, affecting **user autonomy and informed decision-making.**

- These apps, **including popular ones like Netflix, Ola, and Swiggy, employ tactics such as privacy deception, interface interference, drip pricing, and false urgency.**
- The study **highlighted that these problematic apps have been downloaded 21 billion times.**
- The most **prevalent deceptive pattern is privacy deception, found in 79% of the apps.**
- **Health-tech apps show the highest incidence of deceptive patterns**, followed by travel booking and e-commerce.

Examples of dark patterns:

- **Forced continuity**- ex – free trial
- **Deliberate Misdirection** – Focusing the users' attention on more expensive option, hiding the cheaper one.
- **Bait and Switch** – Use a convention or pattern in which the user falsely assumes something.
- **Hidden Costs** – added during the check out
- **Roach Hotel** – easy to sign up, difficult to sign out
- **Obscured Pricing**- Making it hard to compare prices
- **Roadblock** – a pop-up window interrupting the intended action.
- **Check box treachery**

9. ANALOGUE RESEARCH STATION

Context:

Scientists have **proposed Ladakh as the ideal location for India's first analogue research station to simulate conditions on the Moon and Mars.**

- This **proposal aligns with ISRO's ambitious space program goals, such as the Gaganyaan mission and plans for lunar and interplanetary exploration.**

Ladakh's dry, cold, and arid desert, along with its rocky **terrain, makes it geomorphologically similar to the lunar and Martian landscapes.**

The **region's features include rocky ground, loose rock, flat land, ground ice, permafrost, rock glaciers, dunes, and drainage networks, mirroring early Mars and the Moon.**

10. VAMPIRE STAR

Context:

Researchers from **the Indian Institute of Astrophysics (IIA) have discovered a "vampire star" in the star cluster M67 in the constellation Cancer.**

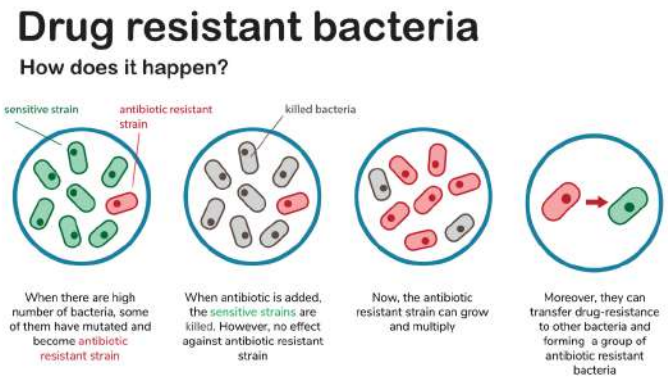
- These vampire stars, **known as blue straggler stars (BSS), defy standard stellar evolution models and appear younger than they are.**
- The star, **named WOCS 9005, rejuvenates by siphoning material from a companion star.**
- This detection was made possible using data from **the UltraViolet Imaging Telescope on AstroSat, India's first space observatory.**
- Spectroscopic analysis revealed the **star's atmosphere is rich in heavy elements like barium, yttrium, and lanthanum**, indicating it has been **polluted by material from its binary companion, which has since become a white dwarf.**
- This discovery provides significant insight into the **complex mass transfer process in binary star systems.**

11. ANTIBIOTIC RESISTANT BACTERIA

Context:

A **recent study in Nigeria** has **found colistin-resistant bacteria** in **newborn babies and their mothers, even though neither had been treated with colistin.**

- Colistin **is a critical antibiotic** used as a **last resort for severe infections**, and its resistance is a **growing concern due to its limited use in healthcare settings**.
- This resistance likely emerged from the **widespread use of colistin in agriculture, particularly in livestock feed.**
- The **use of antibiotics in farming, especially for growth promotion rather than treatment, contributes significantly to antimicrobial resistance.**



12. SUB-ZERO TEMPERATURE BATTERIES

Context:

The **Council of Scientific and Industrial Research (CSIR)** has developed a **new battery designed to function effectively in sub-zero temperatures**, which is particularly beneficial for **defence forces and civilians in high-altitude regions**.

- The **innovative battery features a durable cathode catalyst and an anti-freezing electrolyte**, making it suitable for **extreme cold conditions where conventional batteries fail.**
- Researchers at CSIR-Central Mechanical Engineering Research Institute **created a hybrid cathode material combining cobalt and iron alloys with nanoparticles.**
- This enhancement **improves the battery's durability and performance in both liquid and solid-state zinc-air batteries**, even in very low temperatures.
- The new battery's **portability, flexibility, and lightweight nature make it a versatile energy solution for various users**, including military personnel and remote communities.

The technology is part of a **broader effort to develop efficient energy storage systems,** addressing limitations of **traditional lithium-ion batteries and exploring alternatives like metal-air batteries and electro-catalytic techniques** for low carbon footprint solutions.

13. ANAEMIA MUKT BHARAT

Context:

The Indian government is **implementing the** Anaemia Mukt Bharat **(AMB) strategy** to **reduce anaemia among six key groups**: children aged 6-59 months, children 5-9 years, adolescents 10-19 years, women of reproductive age, pregnant women, and lactating women.

- The strategy includes **six interventions such as iron-folic acid supplementation, deworming, behaviour change communication campaigns, anaemia testing and treatment, fortified food provision**, and **addressing non-nutritional causes of anaemia.**

6 Beneficiaries –

1. **Children (6-59 months)**
2. **Children (5-9 years)**
3. **Adolescent boys (10-19 years)**
4. **Adolescent girls (10-19 years)**
5. **Pregnant and lactating women**
6. **In women of reproductive age group (15-49 years)**

6 Interventions:

1. **Prophylactic Iron Folic Acid supplementation**
2. **Deworming**
3. **Intensified year-round behaviour Change Communication Campaign (Solid Body, Smart Mind) including delayed cord clamping.**
4. **Testing of anaemia using digital methods and point of care treatment**
5. **Mandatory provision of Iron Folic Acid fortified foods in public health programmes**
6. **Intensifying awareness, screening and treatment of non-nutritional causes of anemia in endemic pockets, with special focus on malaria, haemoglobinopathies**

6 Institutional Mechanism:

1. **National Anaemia Mukht Bharat initiative**
2. **Intra Ministerial Coordination**
3. **Strengthen Supply chain logistics**
4. **Convergence with other ministries**
5. **National Centre of Excellence and Advance research on Anaemia Control**
6. **Anaemia Mukht Bharath dashboard and Digital Portal One Stop Shop for Anaemia**

14. SUCRALOSE

Context:

A **recent Indian study highlights** the benefits of **replacing sucrose with sucralose, a non-nutritive sweetener, in beverages for adults with Type 2 diabetes.**

- A randomized controlled trial showed **no adverse effects on glucose or HbA1c levels and indicated slight improvements in body weight, waist circumference, and BMI.**

About Sucralose:

Sucralose, a substituted disaccharide, is a **non-nutritive sweetener that is synthesized by selective chlorination of sucrose at three of the primary hydroxyl groups**, involving inversion of configuration at carbon-4, from the gluco- to the galactoanalogue.

Name of LCS	Source
1. Sucralose	• Made from adding chlorine to sugar molecules.
2. Saccharin	• The oldest artificial sweetener. • Made from benzoic sulfonimine and is up to 700 times sweeter than table sugar.
3. Acesulfame	• Made from acesulfame potassium.
4. Aspartame	• Made from the amino acids phenylalanine and aspartic acid. Also includes methanol.
5. Neotame	• Similar to aspartame and made from phenylalanine and aspartic acid.
6. Stevia	• Extracted from the leaves of the stevia plant. • The extracts are processed before they're packaged and sold, putting them in the same category as an artificial sweetener.
7. Sugar alcohols	• Sugar molecules with an alcohol attached. Naturally occur in some fruits.

15. TRIBO-ELECTRIC NANOGENERATOR (TENG) TECHNOLOGY

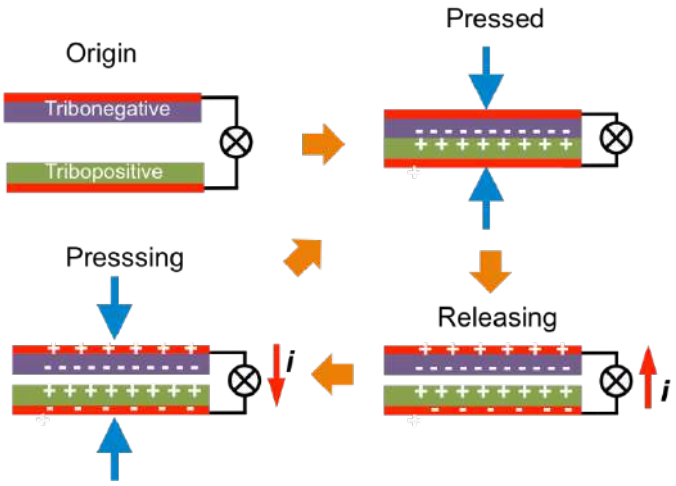
Context:

IIT Indore has developed **advanced footwear for the armed forces**, integrating **Tribo-Electric Nanogenerator (TENG) technology that generates electricity from human motion.**

- This innovation **powers small electronic devices and features GPS and RFID technology for real-time tracking of soldiers,** enhancing safety and operational efficiency.
- Beyond military use, these shoes **have potential applications in civilian, industrial, and athletic sectors, offering benefits like location tracking and performance analysis.**

About Triboelectric nanogenerators (TENGs):

Triboelectric nanogenerators (TENGs) are devices **capable of converting mechanical movement into electrical energy**. These devices are composed of **active materials that generate electric charges and conductive electrodes** responsible for collecting and transferring the charges.



16. HYPERVIRULENT SUPERBUG

Context:

A dangerous strain of the superbug Klebsiella pneumoniae (hvKp), which is **highly virulent and drug-resistant,** has been detected in 16 countries, including the United States, according to a recent **World Health Organization (WHO) report.**

- This **superbug can cause severe and rapidly progressing infections even in healthy individuals, leading to high rates of complications and death.**
- Initially discovered in Asia in the 1980s**, hvKp was once vulnerable to antibiotics**, but it has **now developed resistance to many, including carbapenems, a last-resort class of antibiotics**.
- It causes **pneumonia, urinary tract infections, bloodstream infections, and the nervous-system infection meningitis.**

17. BIO-BITUMEN

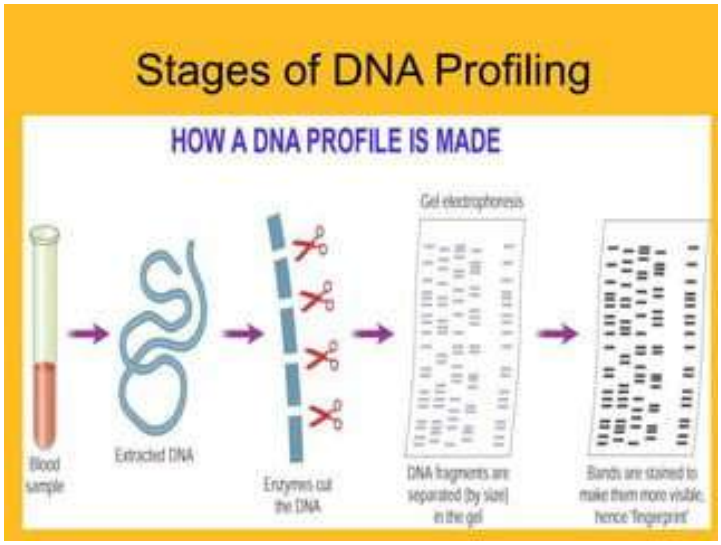
Context:
The Indian government, plans to allow up to **35% bio-bitumen mixing with petroleum-based bitumen** to reduce **foreign exchange outflows.**

- **Bio-bitumen, derived from paddy straw (parali),** can also produce **bio-gas and biochar.**
- This initiative **aims to decrease bitumen imports, reduce air pollution from stubble burning, and create economic opportunities for farmers and MSMEs**.
- **Bio-bitumen, costing less than petroleum-based bitumen**, offers eco-friendly benefits like **reduced greenhouse gas emissions and supports projects across India** for its implementation in road construction.

18. DNA PROFILING

Context:
Recently **the Madras High Court overturned a conviction based on DNA evidence**, highlighting the need for corroborative evidence.

- DNA profiling, **though increasingly accurate, is not infallible and should not be the sole basis for establishing guilt or innocence in the justice system.**
- **DNA profiling involves analyzing specific locations in the 0.1% of human DNA** that varies between individuals.
- However, **issues such as sample contamination and the probabilistic nature of DNA analysis can affect reliability.**

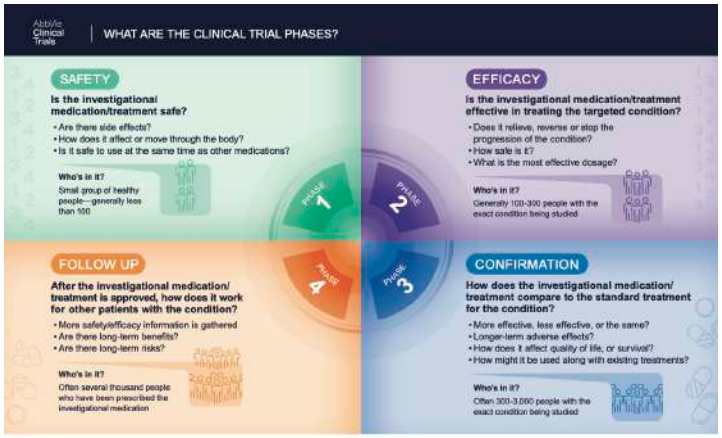


19. CLINICAL TRIAL

Context: **The Central Government of India** has announced that **it will waive the requirement for local** clinical trials **for certain new drugs** if they have **already been approved in select countries,** including the United States, United Kingdom, Japan, Australia, Canada, and the European Union.

- This decision **aims to make foreign-manufactured drugs more accessible and affordable in India.**

The **waiver applies to five categories of drugs**: **orphan drugs for rare diseases, gene and cellular therapy products, drugs used in pandemic situations, drugs for special defense purposes, and drugs that offer significant therapeutic advancements over existing treatments.**



20. DIGITAL WATERMARKING

Context:
OpenAI is reportedly developing a new method for detecting AI-generated content, including text and images, using a technique known as **"AI watermarking."**

- This process involves **embedding a unique, recognizable signal or watermark into the output of an AI model.**
- The **watermark is subtle and often invisible to the human eye but can be detected by specialized algorithms.**
- **OpenAI's "anti-cheating" technology** aims to modify the way AI models, like ChatGPT, generate content by **embedding these watermarks.**
- This will help **identify AI-generated materials and prevent misuse, such as fraudulent activities.**

Although the technology promises up to 99.9% effectiveness, OpenAI has not yet released it publicly due to its complexity and potential broader implications.

Environment & Ecology

21. FOUR-RINGED BUTTERFLY

Context:
A **four-ringed butterfly, the great four-ring (Ypthima cantliei),** has been rediscovered in **India after 61 years,** according to a study published by the **Bombay Natural**

History Society (BNHS).

- The butterfly was recorded in 2018 in Namdapha National Park, Arunachal Pradesh.

The great four-ring, part of the Satyrinae subfamily, was last reported in 1957 from Margherita, Assam.

This butterfly features dull brown-grey wings with distinctive yellow-ringed eye spots and is larger than other Ypthima species, which are mostly found in China.

22. METHANE MITIGATOR

Context:

India has discovered and isolated indigenous methanotrophs, bacteria that naturally mitigate methane, a potent greenhouse gas.

- Researchers have identified novel methanotrophs from rice fields and wetlands in Western India, including a new genus and species named Methylocucumis oryzae.
- These bacteria are efficient in oxidizing methane, converting it to CO_2 and water.
- Methylocucumis oryzae is notable for its large size, unique oval shape, and strict temperature requirements, as it cannot grow above 37°C.

This methanotroph has also been found to enhance rice plant growth, promoting earlier flowering and increased grain yield.

23. MIOMBO FOREST

Context:

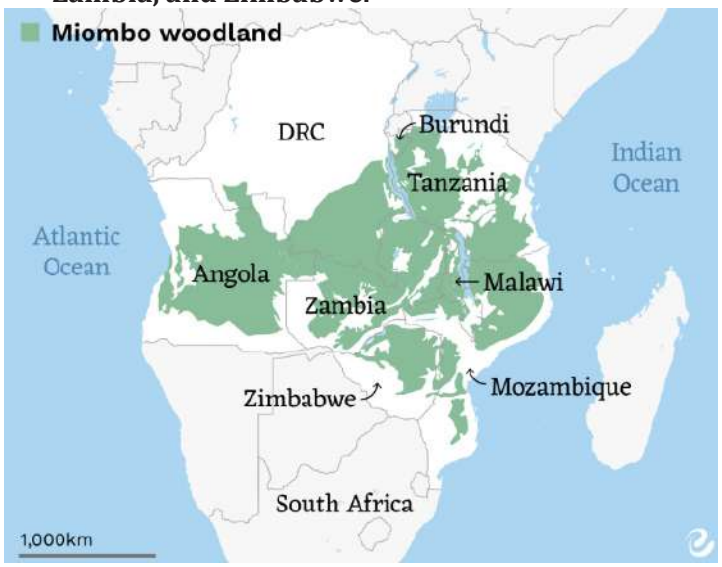
The United Nations Food and Agriculture Organization (FAO) and the Italian Agency for Development Cooperation (AICS) have launched two significant projects to protect the Miombo forest and enhance food security in Mozambique and Zimbabwe.

- **Miombo Forest Project**: This project focuses on sustainable management, biodiversity conservation, and community-based practices in the Miombo forest, benefiting 5,000 families.
- **Zim-Moza Agriculture Value Chain & Trade Development Project (Zim-Moza ATDP)**: This project aims to improve agricultural value chains and trade between Mozambique and Zimbabwe.

Both projects **align with Sustainable Development Goals (SDGs)** and aim to promote resilience against environmental and economic challenges.

Miombo Biome:

- **Type**: Tropical and subtropical grasslands, bushlands, and savannahs.
- **Distribution**: Found in **Angola, the Democratic Republic of Congo, Malawi, Mozambique, Tanzania, Zambia, and Zimbabwe.**



24. INDIAN SIRIS

Context:

The century-old Indian Siris tree in East Godavari district, Andhra Pradesh, recently collapsed during the Godavari floods.

- Known for featuring in over a hundred movies, the tree's fall became viral online as people shared their memories of it.
- The Andhra Pradesh State Forest Department is now working to revive the tree through a 45-day chemical treatment, given the soil fertility and root system.

Indian Siris (Albizia lebbeck):

- **Native Range**: India and Southeast Asia.
- **Family**: Fabaceae.
- **Characteristics**: Deciduous tropical tree.
- **Climate and Soil**: Thrives in warm, humid climates and can grow in clay, loam, and sandy soils.

25. ANTARCTICA'S DEEP-WINTER HEATWAVE

Context:

Antarctica is experiencing a record-breaking deep-winter heatwave, with temperatures **up to 28°C higher than normal.**

- This unusual event is mainly **due to the weakening of the polar vortex, which typically traps cold air over the continent.**
- The **weakened vortex has allowed warmer air to enter, raising temperatures.**
- Reduced Antarctic Sea ice, **which usually helps maintain lower temperatures, may also be contributing to this heatwave.**
- The **potential fallout includes further loss of the Antarctic Ice Sheet, which could significantly raise global sea levels, potentially submerging coastal cities.**
- The **heatwave might also disrupt the global ocean circulation system, which regulates climate by transporting heat and carbon.**

Internal Security

26. VILLAGE DEFENCE GUARDS

Context:

Union Minister announced that the **Village Defence Guards (VDGs) in Jammu** have been **equipped with sophisticated weapons to combat rising terror incidents in the region.**

About Village Defence Guards:

- **Formation:** Set up in the **mid-1990s as a force multiplier against militant attacks.**
- **Purpose: Provide weapons and arms training** to residents of remote hilly villages to defend themselves.

Need to Setup Village Defence Guards:

- **Context:** Militancy spread from **Kashmir to Doda district by the mid-1990s**.
- **Trigger:** Demand **arose after the 1993 massacre of 13 people in Kishtwar**.
- **Implementation:** The **Home Ministry initiated VDCs in 1995,** later expanding to other areas in the Jammu division as militancy spread to Udhampur, Reasi, Rajouri, Poonch, Kathua, and Samba districts.

Contribution:

- **Role in Combat:** Played a significant role in combating **militancy during its peak, particularly in Chenab Valley, Pir Panjal regions, and the hills of Udhampur, Reasi, and Kathua districts**.

Defence

27. DIRECTED ENERGY WEAPONS

Context:

The article **discusses the advancements and current state of Directed Energy Weapons (DEWs),** highlighting **their growing importance as countermeasures against autonomous and hypersonic weapons.**

Directed energy weapons (DEWs) are defined as **electromagnetic systems capable of converting chemical or electrical energy** to **radiated energy and focusing it on a target**, resulting in **physical damage that degrades, neutralizes, defeats, or destroys an adversarial capability.**

- The United States has significantly invested in DEWs, **developing systems like high-energy lasers (HEL) and high-powered microwaves (HPM),** with **various applications ranging from missile defence to disabling drones.**
- Countries like **China, Russia, and others are also advancing their DEW capabilities.**
- India has been investing in DEWs through organizations like DRDO and BEL, **working on projects like Tri-Netra and KALI.**

Reports in News

Niti Aayog: Strategy for the development of Seaweed **Value Chain**	Recommendations: Form a **National Steering Committee** **• Include seaweed in Priority sector lending** **• Provide crop insurance.** **• Mobilize farmers through SHGs.** **• Establish seed banks, processing, marketing centers.**
	Seaweeds are various types of **marine plants and macroalgae** found in water bodies like rivers and lakes. **Seaweed cultivation** is part of aquaculture, with the fishing and aquaculture sector contributing **1.5% to India's GDP**.
World Trade Statistics 2023	The WTO's **"World Trade Statistics 2023"** highlights the top five agricultural exporters as the EU, the US, Brazil, China, and Canada. The top ten exporters accounted for **71.9% of global agricultural exports**. India ranked 8th, with exports worth **$51 billion**, making up **2.24%** of the total agricultural exports in 2023.
	The World Trade Organization, established in 1995, is an intergovernmental organization that regulates and facilitates international trade, working with governments to establish, revise, and enforce rules.

MAPPING

INTERNATIONAL

Place	Why in News?
1. LAKE TURKANA	**Context:** A **comprehensive survey of Lake Turkana**, **Africa's fourth-largest lake**, has been conducted **for the first time in 50 years**, revealing high fish potential. • Led by UNESCO and the World Food Programme, and funded by the Dutch Government, the **10-year project aims to enhance the economic well-being and food security of the region's population.** Lake Turkana is **the largest desert lake in the world** and is **known for its unique greenish-blue colour**. It is part of the **Omo-Turkana basin**, which stretches into **four countries: Ethiopia, Kenya, South Sudan and Uganda.** 

INDIAN

Place	Why in News?
2. OMKARESHWAR FLOATING SOLAR PARK, MADHYA PRADESH	**Context:** **SJVN Green Energy Limited (SGEL),** a subsidiary of SJVN Limited, has commissioned the 90 MW **Omkareshwar Floating Solar Project in Khandwa, Madhya Pradesh**. The project, **one of the largest floating solar initiatives in Central and North India**, is expected to **generate 196.5 million units of energy in its first year.**