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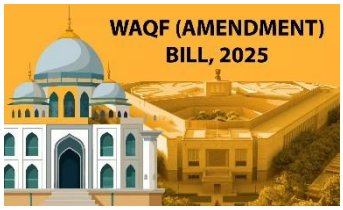
GS Paper 2 – Governance, Constitution, Polity, Social Justice

1 Lok Sabha Approves the UMEED Bill, 2025: A Milestone in Waqf Property Management



Context: The **Lok Sabha** has passed the **Waqf (Amendment) Bill, 2025**, now renamed as the **Unified Waqf Management, Empowerment, Efficiency, and Development (UMEED) Bill**. Alongside this, the **Mussalman Wakf (Repeal) Bill, 2024** has also been approved, leading to the repeal of the outdated **Mussalman Wakf Act, 1923**.

Background and Objective:

In 2024, two significant bills were introduced:

1. **Waqf (Amendment) Bill, 2024**
2. **Mussalman Wakf (Repeal) Bill, 2024**

The primary objective of the **Waqf (Amendment) Bill, 2025** is to **amend the Waqf Act, 1995**, addressing challenges related to **Waqf property management** while improving the **administration and efficiency** of Waqf boards.

The **Mussalman Wakf (Repeal) Bill, 2024** aims to repeal the outdated **Mussalman Wakf Act, 1923**, thereby enhancing **uniformity, transparency, and accountability** in Waqf property management under the **Waqf Act, 1995**.

Understanding Waqf:

- **Waqf** refers to **properties dedicated exclusively for religious or charitable purposes** as per **Islamic law**. Once designated as Waqf, the **property becomes irrevocable** and cannot be sold or used for other purposes. The person who dedicates the property is known as the **wakif**, and the property is managed by a **mutawalli**.

Historical Context:

The concept of Waqf in India dates back to the **Delhi Sultanate** when **Sultan Muizuddin Sam Ghaor** dedicated villages to the **Jama Masjid of Multan**. Over the centuries, Waqf properties expanded significantly, especially during the rise of Islamic dynasties.

The **Mussalman Waqf Validating Act of 1913** legally protected the institution of Waqf in India.

Constitutional and Governance Framework:

According to the Constitution, **charitable and religious institutions** fall under the **Concurrent List**, allowing both **Parliament and State Legislatures** to make laws on this subject.

Currently, Waqf properties are governed by the **Waqf Act, 1995**, which replaced earlier laws from **1913, 1923, and 1954**.

Key Amendments in the UMEED Bill:

1. Composition of the Central Waqf Council:

- The **Union Minister in charge of Waqf** becomes the **ex-officio chairperson**.
- The council includes:
  - **Members of Parliament (MPs)**
  - **Nationally eminent persons**
  - **Retired Supreme Court/High Court judges**

    - **Experts in Muslim law**
- The Bill **removes the Muslim requirement** for MPs, former judges, and eminent persons.
- **Mandates two non-Muslim members** in the council.

2. Composition of Waqf Boards:

- **State governments** are empowered to **nominate one person from each group**.
- **Non-Muslim members required: two.**
- **Inclusivity measures:**
    - At least one member each from **Shias, Sunnis, and Backward Muslim classes**.
    - **Two Muslim women members**.

3. Composition of Tribunals:

- **Removes the expert in Muslim law.**
- Comprises a **District Court judge (Chairman)** and a **Joint Secretary rank officer**.

4. Appeal Mechanism:

- Allows **appeals against Tribunal decisions** to the **High Court** within **90 days**, unlike the previous provision where decisions were **final**.

5. Survey and Property Management:

- The **Survey Commissioner** will be replaced by the **District Collector** or other senior officers to oversee the **survey of Waqf properties**.
- **Government properties identified as Waqf** will no longer be treated as such.

6. Financial Transparency:

- Waqf institutions earning over ₹**1 lakh** will undergo **state-sponsored audits**.
- Establishes a **centralized portal** for **Waqf property management**, ensuring **efficiency and transparency**.

7. Property Dedication and Women's Rights:

- Only **practicing Muslims (for at least five years)** can dedicate property, restoring **pre-2013 rules**.
- Women must **receive inheritance** before the Waqf declaration, with **special provisions for widows, divorced women, and orphans**.

Concerns Raised:

- **Non-Muslim Members in Waqf Boards:** Critics argue that including **non-Muslim members** could result in **non-Muslim dominance**, unlike boards for **Hindu and Sikh endowments**.
- **Expertise in Waqf Tribunals:** Removal of **Muslim law experts** may hinder effective resolution of **Waqf-related disputes**.
- **Five-Year Requirement:** The criterion for **creating Waqf** after practicing Islam for five years is seen as **arbitrary**.

Conclusion: The **UMEED Bill, 2025** is a significant move towards **modernizing Waqf property management**. By addressing **administrative challenges** and promoting **gender inclusion**, the bill aims to create a **more transparent and efficient Waqf management system**. However, the inclusion of **non-Muslim members** and removal of **Muslim law experts** have sparked debates regarding its potential **impact on community representation**.

GS Paper 3 – Economic Development

2 Domestically Manufactured Iron & Steel Products Policy (DMISP) – 2025

Context: The **Central Government** has introduced the **Domestically Manufactured Iron & Steel Products (DMISP) Policy – 2025**, focusing on **self-reliance and enhanced domestic value addition** in the Indian steel sector. This policy is a key component of the **"Atmanirbhar Bharat" (Self-Reliant India) vision**.

Objectives & Significance:

Promote Self-Reliance:

The policy aims to encourage **domestic production and consumption** of iron and steel, reducing dependency on imports.

Curb Imports:

Addressing the rising trend of steel imports, the policy seeks to safeguard the **Indian steel sector from foreign competition**.

Protect Domestic Industry:

By providing preference to **domestic manufacturers**, the policy aims to **shield local steel producers** from **unfair foreign competition**, especially in **government contracts and infrastructure projects**.

Enhance Domestic Value Addition:

The policy emphasizes **increasing local sourcing** of capital goods used in steel manufacturing, thereby **strengthening the domestic manufacturing ecosystem**.

Key Highlights of the DMISP Policy – 2025:

1. Preference for Domestic Steel:

- All **government ministries, departments, PSUs, trusts, and statutory bodies** are required to procure **locally manufactured iron and steel products**.
- Applies to all **procurement contracts exceeding ₹5 lakh**.
- Includes **infrastructure projects under centrally sponsored and central sector schemes**.

2. "Melt & Pour" Requirement:

- To ensure core production occurs within India, all products must be **melted and poured into solid form domestically**.
- Applicable to a wide range of products, including **flat-rolled products, bars, rods, and railway steel**.

3. No Global Tenders Under 200 Crore:

- **Global Tender Enquiries (GTE)** are **banned for contracts below ₹200 crore** unless explicitly approved by the **Department of Expenditure**.

- Promotes **domestic participation** in government projects by reducing competition from foreign players.

4. Reciprocal Clause:

- Suppliers from countries that **restrict Indian firms from participating in their public procurement** will be **barred from bidding in Indian government steel tenders**, unless permitted by the **Ministry of Steel**.
- This clause aims to ensure **fairness and reciprocity** in **international trade**, with **China** believed to be a primary target.

5. Emphasis on Domestic Value Addition:

- For **capital goods used in steel production** (e.g., **furnaces, rolling mills**), a **minimum of 50% domestic value addition** is mandatory.
- Bidders must **self-certify**, with false claims risking **blacklisting and forfeiture of earnest money deposits**.
- **Auditor certification** is required for capital goods to **verify value thresholds**.

Significance of the DMISP Policy – 2025:

1. **Boosts Self-Reliance:** Aligns with the **"Atmanirbhar Bharat" vision**, promoting indigenous manufacturing and consumption of steel.
2. **Strengthens Domestic Industry:** Provides a **level playing field** for Indian manufacturers by restricting foreign competition in government projects.
3. **Encourages Technological Upgradation:** The policy emphasizes **domestic value addition**, encouraging technological advancements within the country.
4. **Improves Trade Fairness:** The **reciprocal clause** ensures that **international trade practices remain equitable**.

Conclusion:

The **DMISP Policy – 2025** marks a bold step towards fostering **self-reliance in the Indian steel sector**. By prioritizing **domestic production, curbing imports, and enhancing local value addition**, the policy aims to **secure India's strategic interests and strengthen the indigenous steel industry**.

GS Paper 1 – Geography, Border Disputes

3 Katchatheevu Islands: Renewed Calls for Retrieval by Tamil Nadu Assembly

Context: The **Tamil Nadu Legislative Assembly** has **unanimously adopted a resolution** urging the **Union government** to **retrieve Katchatheevu from Sri Lanka**. The call reflects ongoing concerns over **fisheries rights, historical claims, and cultural significance**.

About Katchatheevu Islands:

Location:

- **Katchatheevu** is a **285-acre uninhabited island** located in the **Palk Strait** between **India and Sri Lanka**.
- Situated **33 km northeast of Rameswaram (India)** and **62 km southwest of Jaffna (Sri Lanka)**.

Strategic Importance:

- Serves as a **maritime boundary marker** between India and Sri Lanka.
- **Fisheries-rich zone**, crucial to **Tamil Nadu's fishing economy**.
- Houses **St. Anthony's Church**, a place of **religious significance for fishermen** from both nations.

Historical Ownership of Katchatheevu:

- The island emerged due to a **volcanic eruption in the 14th century**.
- Initially ruled by the **Jaffna Kingdom (Sri Lanka)**, later controlled by the **Ramnad Zamindari under the Nayak dynasty of Madurai**.
- During the **British colonial era**, both **British India and Sri Lanka** claimed the island.
- The dispute was resolved in Sri Lanka's favor under the **1974 Indo-Sri Lankan Maritime Boundary Agreement**.

International Maritime Boundary Line (IMBL):

- The **IMBL between India and Sri Lanka** was delineated in **1974** through the **Indo-Sri Lankan Maritime Boundary Agreement**.
- Established based on the **United Nations Convention on the Law of the Sea (UNCLOS)**.
- **Maritime boundaries** are often defined by the **equidistance principle**, ensuring a **medial line equidistant from both nations' coasts**.
- The IMBL determines zones such as:
    - **Exclusive Economic Zones (EEZs)**
    - **Territorial Waters**
    - **Other Maritime Zones**

- The **1974 agreement** adjusted the **equidistant line**, placing **Katchatheevu under Sri Lanka's sovereignty**.

Other Maritime Disputes Involving India:

1. Sir Creek Dispute (With Pakistan):

- Dispute over the **demarcation of a 96 km estuary** located in **Gujarat**.
- Remains unresolved with **contentious claims over territorial waters and maritime boundaries**.

2. New Moore Island Dispute (With Bangladesh):

- Known as the **South Talpatti dispute**.
- Permanently settled in **Bangladesh's favor** following a **2014 ruling by the Permanent Court of Arbitration**.

Conclusion:

The **Katchatheevu Islands issue** remains a **contentious topic**, particularly for **Tamil Nadu's fishing community**. While the **1974 agreement ceded the island to Sri Lanka**, the **Tamil Nadu government's repeated resolutions** highlight the **ongoing socio-economic and cultural concerns** associated with the island.

GS Paper 3 – Environment, Biodiversity, and Ecologygy

4 Euphaea wayanadensis: A Newly Discovered Jewel of the Western Ghats

Context: A new species of **damselfly**, named **Euphaea wayanadensis**, has been discovered in the **Wayanad region** of the **Western Ghats, Kerala**. This exciting discovery, published in the **peer-reviewed journal ENTOMON**, marks **Kerala's 191st recorded odonate species** and the **223rd documented species from the Western Ghats**.

Taxonomic Classification:

- **Family:** *Euphaeidae* (Commonly known as Gossamerwings)
- **Genus:** *Euphaea*
- **Species:** *Euphaea wayanadensis*

Historical Sightings & Identification:

- **First Sightings: 2013** at the **Kalindi River, Thirunelli** in **Wayanad district, Kerala**.
- **Further Sightings:**
  - **2013 to 2019:** Continued observations in Wayanad.
  - **2019 to 2023:** Additional sightings in **Aralam (Kannur, Kerala)** and the **western slopes of Coorg (Karnataka)**.

Identification Challenges

- Initially **misidentified as *Euphaea pseudodispar***, a species commonly found in **Maharashtra**.
- Later confirmed as a distinct species through **detailed morphological study and genetic analysis**.

Key Morphological Features:

1. Distinctive Hind Wing:

- Features a **longer black patch** compared to closely related species, making it a key identification marker.

2. Striking Colouration:

- **Males** exhibit **broader and uninterrupted humeral and antehumeral stripes**.
- The **brilliant metallic blue or green body** contrasts sharply with their dark wings, enhancing visibility.

3. Unique Genital Structure:

- The **male genital vesicle** displays structural traits that are **distinct from related species** in the *Euphaea* genus.

Habitat and Distribution:

Preferred Habitat:

- Thrives in **fast-flowing streams** with **rocky beds** and **abundant aquatic vegetation**.
- Commonly found in **evergreen and semi-evergreen forest regions** along stream banks.

Geographical Distribution:

- Highly restricted to the **Western Ghats**, primarily in the **Wayanad region (Kerala)**, **Aralam (Kannur, Kerala)**, and **western slopes of Coorg (Karnataka)**.

Seasonal Activity:

- Active throughout the year except during the **dry seasons of March and April**.

Conservation Concerns:

- **Highly Restricted Distribution:** Makes it particularly **vulnerable to habitat loss** and **climate change**.
- **Habitat Fragmentation:** Increasing **deforestation and human encroachment** threaten its natural habitat.
- **Water Pollution:** Contaminants from agricultural run-off and urbanization pose significant threats to its survival.

Additional Facts & Knowledge:

1. **Ecological Role:**
    - As a **predator of small insects**, *Euphaea wayanadensis* helps maintain **ecosystem balance** by controlling pest populations.
2. **Indicator Species:**
    - Damselflies and dragonflies are **excellent bioindicators** due to their **sensitivity to changes in water quality and habitat conditions**.
    - The presence of *Euphaea wayanadensis* signifies a **healthy freshwater ecosystem**.
3. **Western Ghats Biodiversity Hotspot:**
    - The **Western Ghats** is recognized as one of the **world's eight "hottest hotspots" of biological diversity**.
    - It harbors approximately **160 species of odonates (dragonflies and damselflies)**, with **many endemic to the region**.
4. **Conservation Status:**
    - While *Euphaea wayanadensis* is **newly discovered**, its **restricted distribution and specialized habitat preferences** could warrant a **"Vulnerable" or "Endangered" status** if formally assessed under **IUCN criteria**.

Conclusion:

The discovery of **Euphaea wayanadensis** not only enriches the biodiversity catalog of the **Western Ghats** but also highlights the urgent need for **conservation measures**. As a **bioindicator species**, its presence and health are vital signs of the region's **ecological well-being**.

5 Chandrayaan-3: Surface Thermophysical Experiment (ChaSTE)

Context: The **Surface Thermophysical Experiment (ChaSTE)**, part of **Chandrayaan-3's Vikram lander**, has become the **first instrument to measure in situ temperatures near the Moon's south pole**. This breakthrough is significant as it provides **unprecedented insights into the thermal properties of the lunar regolith**, especially in a region considered **crucial for future exploration and colonization**.

How ChaSTE Works:

- **Deployment:**
  - ChaSTE is integrated into the **Vikram lander**, which successfully touched down on the **lunar south pole on August 23, 2023**.
  - Utilizes a **rotation-based deployment mechanism** instead of traditional hammering devices, which has been a critical factor in its success.
- **Temperature Sensors:**
  - The thermal probe is equipped with **10 temperature sensors**, placed **1 cm apart** along its length.
  - These sensors are highly sensitive and capable of detecting minute temperature changes in the lunar regolith.
- **Penetration Process:**
  - The probe is gradually rotated downward by a motor, which ensures a **controlled and steady descent**.
  - **No hammering mechanism:** This prevents potential damage to the probe or alteration of the lunar surface during penetration.
  - Successfully **reached a depth of 10 cm** in the Moon's regolith.
- **Data Collection Period:**
  - Continuously monitored temperature variations from **August 23 to September 2, 2023**.
  - Provided critical data on **temperature gradients**, thermal conductivity, and heat capacity of lunar soil.

Comparisons with Previous Missions:

Mission	Year	Target Body	Instrument	Purpose	Outcome
Chandrayaan-3	2023	Moon (South Pole)	ChaSTE	Measure thermal properties	Successfully penetrated and measured temperature.
ESA's Philae	2014	Comet 67P	MUPUS	Surface & subsurface temperature	Failed due to awkward landing; probe not deployed properly.
NASA's InSight	2018	Mars	HP3 ("The Mole")	Heat flow measurement	Encountered low friction; unable to burrow deep enough.

Why ChaSTE's Success is Groundbreaking:

1. **New Measurement Techniques:** Unlike previous missions that relied on **hammering mechanisms** (which often failed due to unpredictable soil properties), ChaSTE uses a **rotation-based method** that **minimizes disturbance** to the regolith.
2. **Superior Sensor Arrangement:** With **10 sensors placed 1 cm apart**, ChaSTE provides **high-resolution temperature profiles**. This setup allows researchers to **understand thermal conductivity and heat capacity** more accurately.
3. **Crucial Data for Future Missions:** The temperature readings gathered by ChaSTE are essential for determining the **presence and stability of water ice deposits**, a key resource for future **lunar bases and exploration missions**.
4. **Significance of the Lunar South Pole:**
    - The **South Pole region** is of special interest due to its **permanently shadowed areas** where water ice may be preserved.
    - Understanding thermal properties is critical for **resource extraction and habitat construction**.

Additional Facts & Knowledge:

1. **Lunar Soil Composition:**
    - The **regolith** is composed of **fine dust and small fragments** from meteorite impacts.
    - Its thermal properties can vary dramatically with **depth, grain size, composition, and compaction**.
2. **Thermal Conductivity Challenges:**
    - Due to the Moon's lack of atmosphere, **heat transfer primarily occurs via conduction and radiation**, making accurate measurement challenging.
    - The **extreme temperature variations** between day and night (ranging from **+127°C during the day to -173°C at night**) make thermal studies critical.
3. **Importance of Water Ice Detection:**
    - Water ice can provide **drinking water, oxygen, and hydrogen for fuel**, making it essential for **sustainable lunar exploration**.
    - It could also serve as a **natural shield against cosmic radiation** for future lunar habitats.
4. **Comparison with Artemis Program:** NASA's **Artemis missions** also aim to study the lunar South Pole, but **Chandrayaan-3's ChaSTE experiment provides a head-start** in gathering in situ thermal data.
5. **Data Utilization:** ChaSTE's findings will assist in designing **thermal insulation and protective measures** for future **lunar bases, rovers, and human missions**.

Conclusion: ChaSTE's success is a monumental achievement for **ISRO's Chandrayaan-3 mission** and global lunar research. By providing valuable data on **lunar soil's thermal properties**, it offers critical insights for **future resource utilization and habitat design** on the Moon.

GS Paper 3 – Environment, Pollution, and Disaster Management

6 Fluoride Contamination in India: A Growing Concern

Context: The **Uttar Pradesh Jal Nigam** has reported **excessive fluoride levels** in the groundwater of **120 hamlets**, affecting nearly **2 lakh people**. Some villages recorded fluoride concentrations of **2 mg/L or more**, exceeding the **safe limit of 1-1.5 mg/L**.

What is Fluoride?

- **Fluoride** is a **naturally occurring element** commonly found in **groundwater** due to the **weathering of rocks and minerals**.
- It is beneficial for **dental health** in small amounts but becomes **toxic at higher concentrations**.

Safe Limit: 1-1.5 mg/L (as per the Bureau of Indian Standards - BIS). **Harmful Levels:** Above 1.5 mg/L can cause **serious health issues**.

Health Risks of Excessive Fluoride Consumption

1. **Skeletal Fluorosis:**
    - Weakening of bones and joints.
    - Stiffness, pain, and deformities in severe cases.
2. **Dental Fluorosis:**
    - Discoloration and pitting of teeth.
    - More harmful during the **developmental stages of children**.
3. **Neurological Damage:**
    - High exposure over time can affect **cognitive development in children**.
4. **Other Risks:**
    - Possible links to **thyroid problems, kidney damage, and reproductive issues**.

Other Groundwater Contaminants in India:

Contaminant	Affected States	Health Risks
Arsenic	West Bengal, Bihar, Jharkhand, Uttar Pradesh	Skin lesions, cancer, cardiovascular diseases
Uranium	Punjab, Haryana, Rajasthan, Gujarat (12 states)	Kidney damage, bone toxicity
Iron	Rajasthan, Jharkhand, Assam	Liver damage, heart diseases
Other Metals	Antimony, Cadmium, Copper, Barium	Toxicity, hypertension, liver & kidney damage

States with High Fluoride Contamination:

1. **Rajasthan:**
    - **Highest fluoride contamination in India.**
    - Particularly severe in **arid regions** with high rock mineral content.

2. **Telangana & Western Andhra Pradesh:**
    - Fluoride contamination due to **natural geological formations**.
3. **Eastern Karnataka:**
    - Dry climate contributes to the concentration of fluoride in groundwater.
4. **Uttar Pradesh (Newly Reported):**
    - Over **120 hamlets** affected with fluoride levels exceeding **2 mg/L**.

Why is Fluoride Contamination Increasing?

- **Over-extraction of groundwater** for agriculture and industrial use.
- **Lack of adequate rainwater recharge** in arid regions.
- **Deteriorating infrastructure** for water purification and management.

Seasonal Variations:

- Fluoride levels **spike during dry, pre-monsoon months**, especially in **arid regions of Western India**.
- Reduced water availability leads to **concentration of dissolved minerals**, including fluoride.

Mitigation Measures:

1. **Rainwater Harvesting:**
    - Promotes groundwater recharge, diluting fluoride concentration.
2. **Defluoridation Techniques:**
    - **Activated alumina filtration, Nalgonda technique, and Reverse Osmosis (RO)** are effective methods.
3. **Awareness Programs:**
    - Educating communities on **safe drinking water practices** and the **health impacts of fluoride**.
4. **Monitoring and Mapping:**
    - Continuous monitoring of groundwater quality, particularly in **high-risk areas**.

Key Takeaways:

- **Fluoride contamination is a serious issue** affecting millions across India.
- Addressing this problem requires a **multi-pronged approach**, involving **policy changes, community awareness, and technological interventions**.
- The **new reports from Uttar Pradesh** highlight the need for **urgent intervention and remediation efforts**.