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INDEX

Polity	3-7	Dal Lake	
Sambhal Mosque Dispute		Culture	53-57
PRAGATI system for fast-tracking projects Completion		Mahim Bora	
Pardon Power		Hornbill Festival 2024	
International Relations	8-11	Ajmer Sharif Dargah and Khwaja Moinuddin Chishti	
India – Bangladesh		History	58-63
The High Seas Treaty		Lothal: A Gateway to India's Maritime Past	
Environment	12-31	Notre-Dame Cathedral	
Biomedical Waste		Great Stupa at Sanchi	
Greenwashing		Mapping	
Fleet Emission Levels and CAFE Norms		At a Glance	64-78
Nayakkarpatti Tungsten Block		Exercise	
Sikhna Jwhlao National Park		Exercise CINBAX	
Environment and Wildlife		Important Days	
Ratapani Wildlife Sanctuary		Jyotirao Phule and Savitribai Phule	
Green Steel		International Day for the Elimination of Violence Against Women	
Rubber Plantation Development in Northeast India under Project INROAD		Significant Observances	
India and Global Plastic Treaty		Nandalal Bose (नंदलाल बोस)	
Indian Initiatives against plastic pollution		Scheme	
Economy	32-38	‘One Nation One Subscription’ (ONOS) Scheme	
‘Rhino Food Xpress’ Inaugurated as Part of ASTC’s Innovative Business Initiative		Design Linked Incentive (DLI) Scheme	
Mission Arun Himveer		RESET Programme (Retired Sportsperson	
Kisan Pehchaan Patra (Farmer ID)		Empowerment Training)	
UPI: Revolutionizing Digital Payments in India		Miscellaneous	
MGNREGA Job Card Deletion		Context	
Science and Tech	39-48	ISKCON	
European Solar Mission: Proba-3		New Pamban Bridge:	
Storm Shadow and Oreshnik: Shaping the Ukraine- Russia War		Animal Quarantine and Certification Services (AQCS)	
India’s First Indigenous Antibiotic, Nafithromycin, to Combat Drug Resistance		UNSC Resolution 1701	
What is AMR?		National Initiatives and Achievements	
LISA (Linen Inspection and Sorting Assistant) System		Global Innovation Index (GII) 2024	
Notifiable Diseases		Defence	
High Risk Foods		SAREX-24	
Nano Bubble Technology		Rafale-Marine (Rafale-M)	
Geography	49-52	Sports	
Cyclone Fengal and Landfall		Syed Modi International Badminton 2024	
Phlegraean Fields and Supervolcanoes		District at a Glance	

Sambhal Mosque Dispute

Why in News?

Recently, violence broke out in Uttar Pradesh's Sambhal after a trial court allowed the survey of the Shahi Jama Masjid of Sambhal.

About the Sambhal Mosque

- It is known to be the **oldest surviving Mughal Mosque** in the country.
- The mosque was **built** in around 1528 by **Hindu Beg**, an **official** under **Babur**.
 - Only **three mosques built** during **Babur's reign** i.e the **Jama Masjid** in **Sambhal**, the **Kabuli Bagh Mosque** in **Panipat** , and the **Babri Masjid of Ayodhya** (1529), which was demolished in 1992.
- It is a "**protected monument**", having been notified on December 22, 1920, under the **Ancient Monuments Preservation Act, 1904**.
- It has also been **declared** as a **Monument of National importance**, and **figures** on the **Archaeological Survey of India's** list of **centrally protected monuments**.

About the Sambhal Mosque Dispute

- A **petition** was **filed** in the **Sambhal district court** **alleged** that the **16th Century Jama Masjid** in **Sambhal** was **built** at the **site** of an **ancient Hari Har Mandir**.
- The **petitioners demanded** a **survey** of the **mosque site** to ascertain its historical and religious character.
 - **Similar claim** was also made in the case of Uttar Pradesh's **Gyanvapi mosque** in **Varanasi**, **Eidgah Masjid Mathura** in and **Kamal-Maula Masjid** of **Madhya Pradesh**.
- Following which the **district court ordered surveys** which **resulted** in the **unrest**.
- The **Sambhal dispute** has **once again** cast fresh spotlight on the **Places of Worship Act 1991**.

About the Places of Worship Act, 1991

- The Places of Worship Act **states** that the **religious character** of any **place of worship** as it **existed** on **August 15, 1947**, must be **maintained**.
- The Act was **enacted following** the **disputes**, regarding the **Gyanvapi mosque** and the **Shahi Idgah mosque**, in addition to the **Babri Masjid dispute**.
- The main **objective** of the Act is to **prevent future conflicts over religious sites** and **preserve India's secular fabric**.
- **Section 3** of the Act **bars** the **conversion**, in full or part, of a **place of worship** of any religious denomination into a place of worship of a different religious denomination — or even a different segment of the same religious denomination.
- All **pending legal proceedings** regarding the conversion of a place of worship, **initiated before August 15, 1947**, were to be **terminated** and **no new proceedings** to be **initiated**.
 - **Legal proceedings** related to place of worship can only **continue** if they **concern changes** to the status **after** the **cut-off date** of August 15, 1947.
- This law has an **overriding effect** over any **other law** in force.
- **Ancient and historical monuments** covered by the **Ancient Monuments and Archaeological Sites and Remains Act, 1958** and **disputes** that were **settled before the commencement** of the **Act** are **beyond** the **preview** of the **act**.

- The Act also **does not apply** to the **Ram Janmabhoomi in Ayodhya**.
- The act states that **anyone attempting to change the religious character of a place of worship**, will **face imprisonment** of up to 3 years and a **fine**.
 - Also those **abetting or participating** in such actions are also **liable for punishment**.

Criticism/Challenges to the Act

- **Judicial review:** The Act limits judicial review, which some say infringes on the right to access justice.
- **Retrospective cutoff date:** The Act's cutoff date of August 15, 1947, is considered arbitrary and irrational by some.
- **Exemption for certain disputes:** The Act exempts the Ram Janmabhoomi-Babri Masjid case, which some say raises concerns about selective legal treatment.
- **Communal tensions:** Critics say that challenges to the Act may increase communal tensions, especially at sensitive sites.
- **Secularism:** Some say the Act goes against the fundamental values of secularism and religious freedom in the Indian Constitution.
- **Equality before the law:** Some say the Act discriminates against other religious communities and violates the principle of equality before the law.
- **Disputes Contradicting the Act:** Disputes in Varanasi, Mathura, Dhar, and Sambhal challenge the provisions of the Places of Worship (Special Provisions) Act, 1991.
- **Constitutionality of the Act:** The judiciary from time and again entertains fresh writ petitions related to changing the status of place of worship which challenged the constitutionality of the Act.

Supreme Court's View Regarding the Act

- The **Supreme Court** in 2022, stated that **ascertaining the religious character of a place of worship was not barred** under the Places of Worship (Special Provisions) Act.
 - This means is that **though one can't change the nature of a religious place**, there is **no restriction in carrying an inquiry** into what was the nature of the place of worship on August 15, 1947.

The recent sambhal case will serve as stets to judiciary's capacity to balance constitutional principles, protect India's secular fabric, and maintain harmony among diverse communities. The Court's interpretation and rulings will play a critical role in addressing these disputes while ensuring justice and preserving historical integrity.

PRAGATI system for fast-tracking projects Completion

Context: An Oxford study praises the PRAGATI system for speeding up project completion.

Introduction:

A recent report by Oxford University's Saïd Business School and the Gates Foundation highlights how the PRAGATI platform has revolutionized the delivery of infrastructure projects in India.

- PRAGATI (Pro Active Governance and Timely Implementation as the name suggests, is **aimed at starting a culture of Pro-Active Governance and Timely Implementation**.
- It is also a robust system for **bringing e-transparency and e-accountability** with real-time presence and exchange among the key stakeholders.
- The platform was launched on March 25, 2015.

About PRAGATI

Objective of PRAGATI:

To overcome bureaucratic hurdles, promote a collaborative "Team India" mindset, and foster accountability and efficiency in governance.

Purpose:

- PRAGATI is a multi-purpose platform for addressing public grievances.
- It monitors and reviews key government programmes and projects flagged by Central and State Governments.

Technology:

- Combines three advanced tools: digital data management, video-conferencing, and geo-spatial technology.

Cooperative Federalism:

- Brings together Government of India Secretaries and State Chief Secretaries on a single platform.

Prime Minister's Role:

- Enables the Prime Minister to discuss issues with officials using detailed information and real-time visuals of ground-level conditions.
- PRAGATI was designed by the PMO in coordination with the National Informatics Centre.

PRAGATI Features

The major features of this platform are discussed below

- **Three-Tier System:**
- PRAGATI involves the PMO, Union Government Secretaries, and State Chief Secretaries.
- **Monthly Interaction:**
- The Prime Minister interacts with officials via video conferencing every fourth Wednesday at 3:30 PM, called *PRAGATI Day*.
- **Focus Areas:**
- Public grievances, ongoing programmes, and pending projects are flagged for discussion using the CPGRAMS, PMG, and Statistics Ministry databases.
- **Preparation Timeline:**
- Issues are uploaded a week before *PRAGATI Day* (third Wednesday).
- Union Secretaries and Chief Secretaries view and update flagged issues by the following Monday.
- PMO reviews the updates on Tuesday before the meeting.
- **Access and Updates:**
- User IDs and passwords are provided to Secretaries for accessing the system.
- Secretaries input comments and updates related to their department or state.
- **PM's Review:**

- During the meeting, the PM sees the flagged issues along with the latest updates and visuals for informed decision-making.

In conclusion, the PRAGATI platform fosters collaboration between Central and State governments, effectively addressing challenges like land acquisition and inter-ministerial coordination, while promoting efficiency and a culture of teamwork in infrastructure development.

Pardon Power

Source: <https://economictimes.indiatimes.com/news/india/power-of-pardon-india-keeps-it-rare-the-us-does-it-more/articleshow/115930561.cms?from=mdr>

Aspect	US	India
Constitutional Basis	Article II, Section 2, Clause 1	Article 72
Scope	Federal crimes only	Union and state offenses, including military and death penalties.
Independence	Fully independent	Based on advice from the Council of Ministers.
Death Sentences	State governors may pardon death sentences for state crimes.	The President can pardon death sentences.
Governors' Role	Can pardon state crimes	Limited to state crimes, excluding death sentences (Article 161).
Process	President exercises authority unilaterally.	President acts on ministerial advice under Article 74.

Context: President Joe Biden recently made history by becoming the first US president to pardon his son, sparking debates about the use of clemency powers.

Comparison of Pardon Powers: US vs. India

Key Differences

1.Scope of Jurisdiction:

- The US President's power is limited to **federal offenses**.
- The Indian President can exercise pardon powers for **both Union and state offenses**, as well as military cases and **death sentences**.

2.Independence in Decision-Making:

- The US President operates **independently** in granting pardons, without the need for formal advice.
- The Indian President acts **on the advice of the Council of Ministers** as per **Article 74** of the Constitution.

3.Governors' Authority:

- In the US, **state governors** can pardon crimes under state jurisdiction, including **death sentences**.
- In India, governors can pardon crimes under state laws but **cannot pardon death sentences**, which is exclusively within the **President's authority**.

4. Process and Nature of Powers:

- The US President exercises **unilateral discretion** without parliamentary or ministerial constraints.
- In India, the President's decision is **bindingly influenced** by the advice of the executive branch.

Practice Question:

Q. Compare and contrast the pardoning powers of the President of India and the President of the United States. Highlight their constitutional implications. (150 words)

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India – Bangladesh

Source: <https://indianexpress.com/article/india/bangladesh-chinmoy-krishna-das-arrest-mea-reaction-9691221/>

Context: A day after Bangladesh police arrested Hindu monk on sedition charges and a court on Tuesday denied him bail, India expressed “deep concern” and urged authorities “to ensure the safety and security of Hindus and all minorities” in the neighbouring country.



History between India and Bangladesh:

- **Pre-Partition Bond:** Cultural and linguistic ties were disrupted by the Partition of 1947, leading to large-scale family separations and migration.
- **1971 Liberation War:** India’s military and moral support were instrumental in Bangladesh’s independence from Pakistan, marking the foundation of strong bilateral relations.
- **Post-Independence Cooperation:** India was the first country to recognize Bangladesh and continues to share deep people-to-people connections.
- **Shared Sacrifices:** Historical and cultural links have been reinforced through mutual respect for shared histories, such as the commemoration of Vijay Diwas.

Areas of Cooperation:

- **Economic Partnership:** Bangladesh is India’s largest trade partner in South Asia, with bilateral trade reaching \$18.2 billion in 2021-22.
- **Connectivity:** Restoration of rail links, inland waterways like the Protocol on Inland Water Transit and Trade (PIWTT), and Agartala-Akhaura rail link.

- **Development Assistance:** India extended \$8 billion in Lines of Credit (LoCs) to Bangladesh for infrastructure development.
- **Cultural Exchange:** Institutions like the Indira Gandhi Cultural Centre (IGCC) foster shared cultural heritage.
- **Defence Collaboration:** Joint exercises like CORPAT and the Bangosagar naval drills enhance security ties.

Way Ahead:

- **Resolve Water Disputes:** Prioritize agreements on Teesta and other rivers through mutual dialogue and time-bound solutions.
- **Enhance Connectivity:** Develop coastal, road, and rail networks to boost economic and cultural ties.
- **Energy Collaboration:** Strengthen cooperation in clean energy and finalize initiatives like the India-Bangladesh Friendship Pipeline.
- **Counter China's Influence:** Provide technological, financial, and strategic support to Bangladesh to balance regional geopolitics.
- **Address Refugee Issues:** Collaborate on a regional framework for managing refugee crises through SAARC initiatives.

Conclusion:

India and Bangladesh's relationship is marked by shared histories and future potential. By addressing challenges and fostering cooperation, both nations can strengthen their partnership, benefiting not just themselves but the region as a whole.

The High Seas Treaty

What are the High Seas?

1. Definition:

- The **high seas** are areas of the ocean that fall outside any nation's jurisdiction. They begin **200 nautical miles** from a country's coastline, beyond its **Exclusive Economic Zone (EEZ)**.

2. Global Importance:

- **64% of the ocean surface** and **43% of Earth's surface** are high seas.
- Home to **2.2 million marine species** and up to a **trillion microorganisms**.
- These waters are essential for climate regulation, biodiversity, and human activities like trade and scientific research.

Significance of the High Seas Treaty

1. Global Challenges:

- Lack of governance has led to **overfishing**, biodiversity loss, pollution (e.g., **17 million tonnes of plastics dumped in 2021**), and climate change impacts.

2. Treaty Objectives:

- **Marine Protected Areas (MPAs):** Designate zones where biodiversity conservation efforts are prioritized.
- **Marine Genetic Resources:** Equitably share benefits from genetic material extracted from marine organisms.
- **Environmental Impact Assessments (EIAs):** Mandate prior assessments for activities potentially harmful to marine ecosystems.
- **Capacity Building and Technology Transfer:** Support smaller or resource-constrained nations in meeting treaty obligations.

3. Implementation under UNCLOS:

- UNCLOS provides the legal framework for ocean governance, including defining EEZs and territorial waters.
- The High Seas Treaty acts as an **implementation agreement** under UNCLOS, akin to the Paris Agreement under the UNFCCC.

Key Features of the Treaty

1. Marine Protected Areas (MPAs):

- MPAs act as "national parks" for the ocean, with strict regulations on human activities to protect biodiversity.
- Only **1.44% of high seas** are currently protected.

2. Marine Genetic Resources (MGRs):

- Oceans harbor organisms with potential applications in **medicine**, biotechnology, and industry.
- The treaty ensures benefits, including profits, are shared equitably and are not monopolized through strong **intellectual property rights**.

3. Environmental Impact Assessments (EIAs):

- Activities in both national jurisdictions and international waters require EIAs if they affect the high seas.
- Transparency: EIAs are made public.

4. Capacity Building:

- Emphasis on assisting **developing countries**, small island states, and landlocked nations with resources and technology.

Difference Between Signing and Ratification

1. Signing:

- Indicates agreement in principle but is **not legally binding**.

2. Ratification:

- A country formally commits to be **legally bound** by the treaty's provisions.

UNCLOS

1.UNCLOS Overview:

- A comprehensive international treaty regulating maritime rights and responsibilities.
- Defines **territorial waters (12 nautical miles)** and **EEZs (200 nautical miles)**.

2.Role in the High Seas Treaty:

- Sets general principles for equitable usage and conservation of marine resources.
- The High Seas Treaty provides specific mechanisms to implement these principles.

Conclusion

The **High Seas Treaty** marks a historic step in ocean conservation and sustainable resource management. It complements **UNCLOS** by operationalizing biodiversity protection beyond national jurisdictions, addressing global challenges like pollution, overfishing, and equitable access to marine resources.

Practice Question:

Q. The High Seas Treaty is a critical step toward sustainable governance of the global commons. Discuss the treaty's objectives, its linkage with the UN Convention on the Law of the Sea (UNCLOS), and its significance in addressing the challenges of biodiversity loss and marine resource exploitation. (250 words)

Biomedical Waste

Source: https://epaper.thehindu.com/ccidist-ws/th/th_international/issues/109452/OPS/GPHDK5LER.1+GCODL9RSH.1.html

Context: HIV epidemic and incidents like the “Syringe Tide” highlighted the hazards of improper biomedical waste disposal, prompting global and national reforms to safeguard public health and the environment.

Historical Background

- 1.HIV Epidemic (1983):** Identification of HIV by Luc Montagnier and Robert Gallo triggered global fear and stigma, emphasizing the risks of medical waste.
- 2.Syringe Tide (1987):** Beaches in the U.S. were polluted with medical waste, sparking public outrage and highlighting the need for regulatory action.
- 3.India’s Scenario:** The first HIV case in India (1986) and lack of biomedical waste legislation exposed gaps in waste management.

Outcomes of Global and National Responses:

United States:

- 1.Medical Waste Tracking Act (1988):** Categorized hospital waste as hazardous, enforcing systematic handling and disposal protocols.
- 2.Transparency and Accountability:** Benchmarked regulatory frameworks for other nations.

India:

- 1.Judicial Interventions:** Supreme Court in **Dr. B.L. Wadehra vs. Union of India (1996)** criticized Delhi’s waste mismanagement, prompting nationwide action.
- 2.Biomedical Waste (Management and Handling) Rules (1998):** First regulation recognizing biomedical waste as hazardous, empowering pollution control boards.
- 3.Amendments and Updates:** Strengthened protocols in **2016** and integrated technology advancements in **2020**.

Key Features of India’s Biomedical Waste Management:

1.Waste Segregation and Color-Coding:

- Mandated segregation of waste at the source into distinct categories.
- Use of color-coded containers (**yellow, red, blue, white**) for easy identification and handling.

2.Treatment and Disposal Technologies:

- Implementation of advanced waste treatment methods:
 - Incineration:** For infectious and pathological waste.
 - Autoclaving and Microwaving:** For disinfection of sharps and other categories.

▪**Chemical Disinfection:** For liquid waste like blood and contaminated fluids.

- Adoption of **deep burial** in rural and resource-limited areas where incineration is not feasible.

3.Occupational Safety for Healthcare Workers:

- Provision of personal protective equipment (PPE) for handling hazardous waste.
- Regular training programs to ensure adherence to safety protocols.
- Immunization against diseases like Hepatitis B for workers handling infectious waste.

4.Monitoring and Compliance Mechanisms:

- Empowerment of **Central and State Pollution Control Boards** to monitor waste generation and disposal.
- Requirement for healthcare facilities to obtain authorization and submit annual reports on waste management practices.
- Surprise inspections and audits to ensure compliance with the rules.

5.Mandatory Reporting and Record-Keeping:

- Healthcare facilities must maintain records of waste generated, treated, and disposed of.
- Use of **barcode tracking systems** in some states to enhance accountability.

6.Common Biomedical Waste Treatment Facilities (CBWTFs):

- Establishment of shared facilities to treat biomedical waste from smaller healthcare units, reducing individual facility costs.

Limitations in Biomedical Waste Management in India:

- 1. Inadequate Infrastructure:** Limited number of biomedical waste treatment facilities, especially in rural and remote areas, leading to unsafe disposal practices.
- 2. Weak Enforcement and Compliance:** Poor adherence to segregation and disposal protocols, coupled with lax monitoring and enforcement by authorities.
- 3. Occupational Hazards:** Insufficient training and lack of personal protective equipment (PPE) expose healthcare workers and waste handlers to health risks.
- 4. Low Public Awareness:** Limited knowledge among the public and informal waste handlers about the dangers of biomedical waste leads to unsafe handling practices.
- 5. Inefficiency in Common Treatment Facilities:** Uneven distribution and overburdening of CBWTFs hinder effective waste management in certain regions.

Way Ahead:

1.Strengthen Infrastructure in Rural Areas: Establish additional Common Biomedical Waste Treatment Facilities (CBWTFs) in underserved regions to reduce unsafe disposal practices.

Eg: **Tamil Nadu's model of CBWTFs** catering to multiple smaller healthcare units can be replicated nationwide.

1.Enhance Monitoring and Accountability: Implement real-time tracking systems using barcoding and GPS to ensure compliance.

Eg: **Kerala's Integrated Biomedical Waste Management Monitoring System (IBMWMS)** effectively tracks waste from generation to disposal.

1.Improve Capacity Building and Occupational Safety: Regular training for healthcare workers, mandatory use of PPE, and immunization for waste handlers to reduce exposure risks.

Eg: **Mumbai's municipal hospitals incorporate safety training and PPE provision** into their biomedical waste protocols.

1.Promote Technological Innovations: Encourage eco-friendly technologies like plasma pyrolysis and waste-to-energy plants for treating non-recyclable waste.

Eg: **AIIMS, New Delhi, employs advanced autoclaving and disinfection** methods to minimize environmental impact.

1.Raise Public Awareness and Community Participation: Conduct campaigns to educate the public and informal waste handlers on biomedical waste risks and proper disposal.

Eg: **Expand the Swachh Bharat Abhiyan** to include biomedical waste awareness drives, building on its sanitation success.

Conclusion:

The HIV epidemic and incidents like the Syringe Tide marked a turning point in biomedical waste management globally. **India's legislative and policy reforms since the 1990s highlight the potential to address challenges** through sustained effort. While gaps persist, the progress reflects the criticality of leveraging crises for long-term solutions.

Quote: "A crisis often serves as the foundation for transformative reform."

Greenwashing

Relevance: In 2022, UN Secretary-General Antonio Guterres emphasized "zero tolerance for net-zero greenwashing," making it a critical issue for global climate action.

Why in the News?

- The **Central Consumer Protection Authority (CCPA)** under the **Ministry of Consumer Affairs** issued **Guidelines for the Prevention and Regulation of Greenwashing and Misleading Environmental Claims**.

- Aimed at addressing deceptive environmental advertising and boosting accountability in the climate action narrative.

1. Understanding Greenwashing

- **Definition:** The act of falsely portraying products, services, or activities as environmentally friendly.
- **Impact:**
 - Misleads consumers and policymakers on real progress in addressing climate change.
 - Encourages irresponsible practices while rewarding deceptive behavior.
- **Examples:**
 - **Volkswagen Emissions Scandal (2015):** Manipulated tests to falsely claim vehicles were eco-friendly.
 - **Global Corporations:** Companies like BP, Shell, and Coca-Cola have faced accusations of overstating their sustainability measures.
 - **Countries:** Often exaggerate the effectiveness of carbon absorption (e.g., forests) or regulations.

2. Why Regulate Greenwashing?

- **Consumer Trust:** Misinformation erodes trust in green claims.
- **Environmental Goals:** Misleading narratives hinder genuine progress toward climate action.
- **Lack of Standardization:** Insufficient regulation of emission reduction processes, certifications, and reporting mechanisms.
- **Examples of Unregulated Spaces:** Carbon trading, sustainability certifications, and product labeling often lack stringent oversight.

3. Guidelines to Prevent Greenwashing

- **Substantiation of Claims:**
 - Terms like “eco-friendly,” “natural,” or “sustainable” must be backed by evidence.
 - Generic claims require qualifiers (e.g., “50% biodegradable”).
- **Clarity in Technical Terms:**
 - Definitions of terms like “carbon footprint” or “greenhouse gas emissions” must be explained in simple, consumer-friendly language.
- **Scope of Applicability:**
 - Applies to manufacturers, service providers, advertising agencies, and endorsers.
 - Covers environmental claims in advertisements, product labels, and promotions.

•Misleading Statements:

- Broad claims like “100% sustainable products” are subject to scrutiny.
- Avoid downplaying negative environmental impacts or using ambiguous imagery.

4. Types of Greenwashing

1.Greenhushing: Underreporting or withholding information on sustainability goals to avoid scrutiny.

2.Green-crowding: Leveraging collective anonymity to hide unsustainable practices.

3.Greenshifting: Shifting sustainability responsibility onto consumers.

4.Greenlighting: Highlighting small sustainable actions to distract from major environmental harm.

5.Greenlabelling: Misusing eco-labels to falsely depict products as sustainable.

5. Carbon Credit**•Definition:**

- One carbon credit equals one tonne of CO₂ or equivalent greenhouse gases reduced, sequestered, or avoided.

•Mechanism:

- Companies exceeding emission standards earn credits.
- Struggling companies buy credits to meet compliance obligations.

•Significance:

- Encourages emission reduction through economic incentives.

•Concerns:

- Greenwashing risks arise if carbon credits are based on unverifiable or scientifically weak processes.

Fleet Emission Levels and CAFE Norms

Context: <https://indianexpress.com/article/business/hyundai-mm-6-others-likely-to-face-emission-penalties-of-rs-7300-crore-9694105/>

Relevance: Vehicular emissions are a critical component of climate change discussions, and regulatory measures like CAFE norms play a pivotal role in mitigating their impact.

What Are Fleet Emission Levels?**•Definition:**

- The average amount of pollutants, particularly **carbon dioxide (CO₂)**, emitted by all vehicles in a manufacturer’s fleet over a specific period.

- Reflects the environmental impact of a manufacturer's vehicles and ensures adherence to emission reduction standards.

CAFE Norms in India

- **Corporate Average Fuel Efficiency (CAFE)** norms were introduced in **2017** to regulate fleet fuel consumption and CO₂ emissions.
- **Key Features:**
 - Applicable to passenger vehicles under **3,500 kg**.
 - Covers vehicles running on **petrol, diesel, LPG, CNG**, hybrids, and **electric vehicles (EVs)**.
 - Compliance monitored by the **Bureau of Energy Efficiency (BEE)** under the **Energy Conservation Act, 2001**.

Compliance Mechanism

- **Data Submission:** Automakers must report compliance data to the **International Centre for Automotive Technology (ICAT)** by **May 31** each year.
- **Review Process:** ICAT compiles the data and forwards it to the **Ministry of Road Transport and Highways (MoRTH)** and the **Ministry of Power** by **August 31**.

Tightening of CAFE Norms

1. Timeline:

- Stricter norms were introduced from **FY 2022-23** and further tightened in **January 2023**.
- The quantum of penalties for non-compliance was increased through amendments to the Energy Conservation Act in **December 2022**.

2. Non-Compliance Penalties:

- Previously: Up to **₹10 lakh** plus the cost of the excess metric ton of oil equivalent energy reported.
- Post-2022: Stricter penalties with greater financial implications.

Challenges Faced by the Auto Industry

• Contestation Over Penalties:

- Automakers argue that penalties should apply only from **January 2023**, when the stricter rules were enforced, not retroactively for the entire fiscal year.

• Increased Costs:

- Tightened norms and penalties significantly raise compliance costs for manufacturers.

Significance of CAFE Norms

• Environmental Impact:

- Reduces **vehicular CO₂ emissions**, contributing to climate change mitigation.

•Energy Efficiency:

- Decreases **oil dependency**, aligning with national energy security goals.

•Incentivizing Green Tech:

- Promotes the adoption of **EVs, hybrids, and CNG vehicles**, which are less carbon-intensive than conventional fossil-fuel cars.

Way Forward

- Clear guidelines on penalties and assessment timelines to ensure transparency.
- Stronger incentives for automakers to accelerate the transition to **low-carbon technologies**.
- Public awareness campaigns to highlight the importance of compliance with fleet emission standards.

Nayakkarpatti Tungsten Block

Source: <https://www.newindianexpress.com/states/tamil-nadu/2024/Nov/29/tamil-nadu-will-never-allow-tungsten-mining-in-arittapatti-surrounding-areas-cm-stalin-to-union-govt>

Syllabus GS Paper III: Technology, Economic Development, Bio-diversity, Environment, Security and Disaster Management.

1. Ecological Concerns:

- The block overlaps with the Arittapatti Biodiversity Heritage Site in Tamil Nadu, raising environmental concerns and opposition from conservationists.

2. Strategic Importance of Tungsten:

- Tungsten is classified as a **critical and strategic mineral**, essential for industrial and national defense development.

3. Mining Clearances:

- Mining activities require environmental and forest clearances.
- Sensitive areas like biodiversity heritage sites are excluded from mining activities.

4. Properties of Tungsten:

- Known for its **high melting point, exceptional strength**, and resistance to **corrosion and thermal expansion**.
- These properties make it ideal for industrial and defense applications.

5. Global Supply and Market:

- China** dominates global tungsten production, contributing over 80% of the world's supply.
- Due to its strategic importance, tungsten is classified as a critical mineral.

6. Indian Reserves:

o Major reserves are found in **Karnataka** (42%), **Rajasthan** (27%), **Andhra Pradesh** (17%), and **Maharashtra** (9%).

o Smaller deposits exist in **Tamil Nadu**, **Haryana**, **Uttarakhand**, and **West Bengal**.

7. Recent Auctions in India:

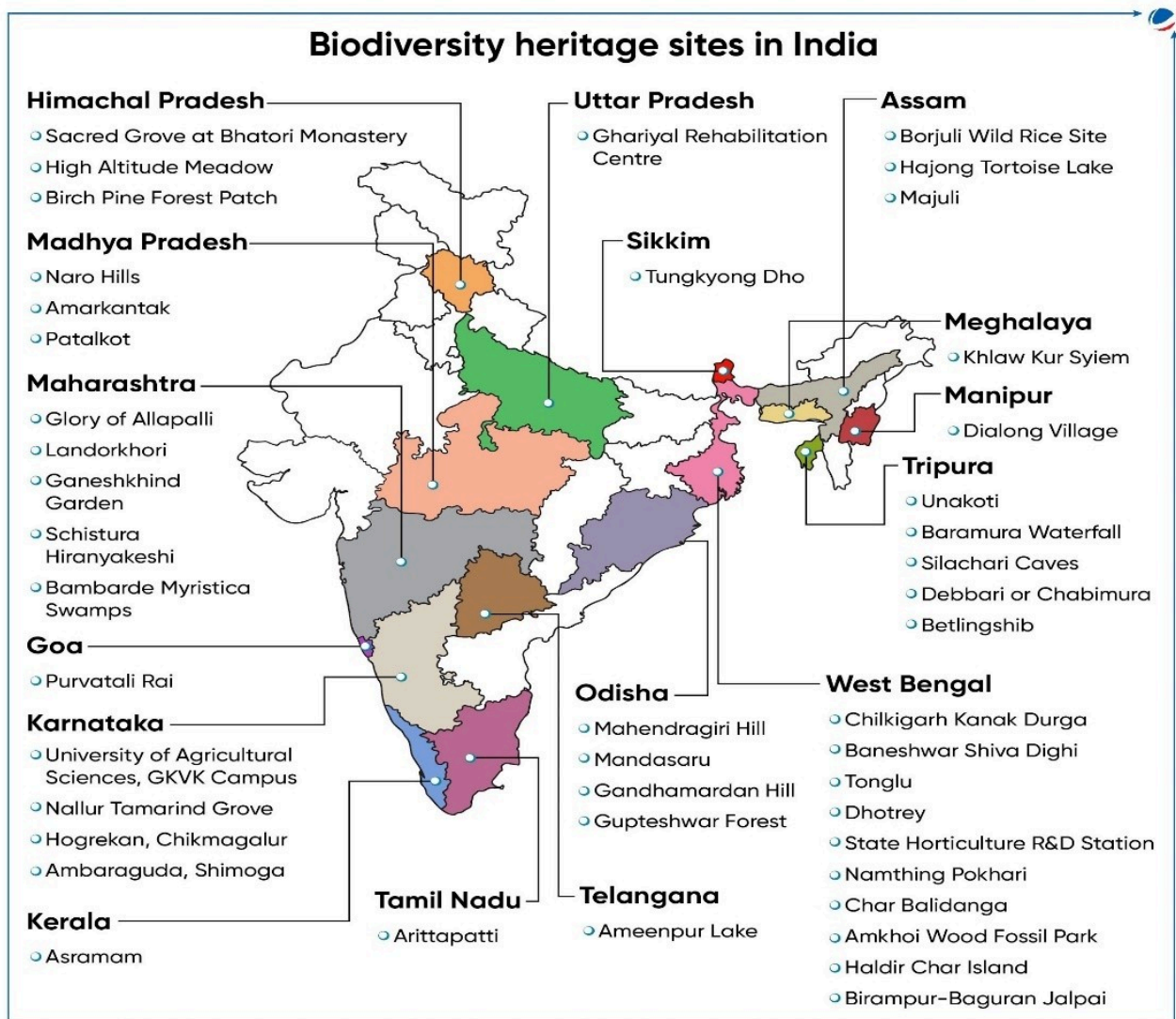
o In 2024, **Nayakkarpatti** and **Balepalyam** blocks were successfully auctioned, marking a significant step in India's **critical mineral strategy**.

o **Hindustan Zinc Ltd.** won the mining rights for the Nayakkarpatti Tungsten Block.

8. Controversy and Opposition:

o The overlap of the mining block with the **Arittappatti Biodiversity Heritage Site** has led to concerns over ecological degradation and cultural impact.

o Environmentalists and local communities are calling for a reevaluation of the mining decision to preserve biodiversity.



Sikhna Jwhlwao National Park

Move to evict encroachers in new national park in Chirang



The newly-declared Sikhna Jwhlwao National Park, located in between Kokrajhar and Chirang district, under encroachment. – Photo: Correspondent

Sikhna Jwhlwao National Park

- On August 15, 2024, Assam's Chief Minister, Dr. Himanta Biswa Sharma, announced the recognition of a 321.90 sq. km area of the Chirang-Ripu Reserve Forest as the **Sikhna Jwhlwao National Park**.
- This park is situated on the Indo-Bhutan border in Assam's **Chirang** and **Kokrajhar** districts, and is part of the **Bodoland Territorial Region (BTR)**.

Key Features:

- **Location and Proximity:** The park is located 222 km from Guwahati, 45 km from Bongaigaon, and 40 km from Kokrajhar.
- **Adjacent to Other Parks:** It is adjacent to the eastern part of **Raimona National Park** and across the **Saralbhanga River** from Bhutan.
- **Biodiversity:** The park is home to unique wildlife, including the **golden langur**, the mascot of the BTR, and features a variety of species such as the **Great Indian Hornbill**, **Red Junglefowl**, and **elephant herds**.

Significance:

- **Historical Context:** The park is named after the legendary **Bodo hero Sikhna Jwhlwao**, who fought during the **Duwar War** (1864-66) between Bhutan and the East India Company. His capital was located at **Ultapani**, which is now within the park.
- **Cultural Importance:** The area is considered sacred, and the Bodo people perform **Bhathau Kherai Puja** to honor their ancestral heroes.

Ecological Importance:

- **Biodiversity Hotspot:** The park is known for its rich flora and fauna, particularly butterflies. A study in 2009 recorded 7,431 butterfly deaths across 81 species over one year in a 25 km stretch of the park.
- **Conservation Status:** It forms part of the **Chirang-Ripu Elephant Reserve**, a crucial corridor for elephants and other wildlife, with significant ecological and conservation value.

Infrastructure and Connectivity:

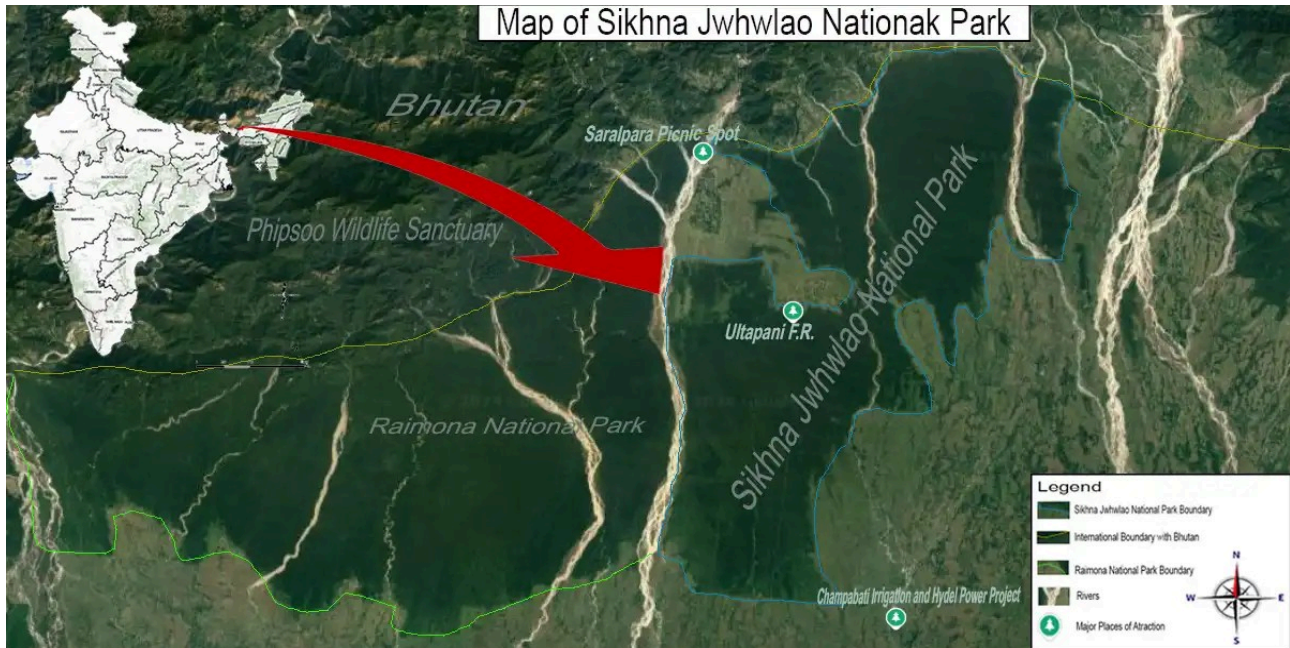
- **Road Access:** The park is accessible via **Saralpara**, a popular destination located at the western-northern corner of the park. It also shares an international border with Bhutan, facilitating cross-border trade and tourism.
- **Strategic Importance:** The park is part of a transboundary conservation initiative, with a boundary shared with **Buxa Tiger Reserve** in West Bengal and **Phipsoo Wildlife Sanctuary** in Bhutan.

Major Attractions:

1. **Ultapani:** A hotspot for butterflies and an area for wildlife viewing.
2. **Saralpara:** A scenic picnic destination known for its waterfalls, creeks, and refreshing cold baths.

Challenges:

- **Deforestation:** Illegal deforestation and conversion of forest land for agriculture have been significant challenges in the past, exacerbating **elephant-human conflicts**.



Boundary Description:

- **North:** Bordering the **Sarpang District** of Bhutan, with the road entry point at **Saralpara**.
- **East:** Bound by the **Champabati River**, serving as a natural divider between **Kokrajhar** and **Chirang** districts.
- **West:** Shares a boundary with **Raimona National Park** along the **Saralbhanga River**.
- **South:** Close to **National Highway 27**, which is about 7 km from the park's southern edge.

Champabati Irrigation and Champamati Hydel Power Project:



- Situated in the southern part of **Chirang district**, it marks the **southeasternmost boundary** of the **Sikhna Jwhlwao National Park** and separates **Kokrajhar** from **Chirang** districts.

The establishment of the **Sikhna Jwhlwao National Park** is a step forward in enhancing Assam's conservation efforts while preserving the rich cultural and ecological heritage of the **Bodoland Territorial Region**.

Environment and Wildlife

Project Cheetah

- Relocation of **African cheetahs** to Kuno National Park (M.P.) for ecological balance and conservation.
- Asiatic cheetah, native to India, classified as **Critically Endangered (IUCN)**, survives only in **Iran**.

Golden Tabby Tiger



- Rare Bengal tiger variant with fewer than **30 individuals worldwide**.
- In 2020, one was spotted in **Kaziranga National Park, Assam**.

Ratapani Wildlife Sanctuary

Madhya Pradesh gets its eighth tiger reserve in Ratapani

ANAND MOHAN J
BHOPAL, DECEMBER 2

THE RATAPANI Wildlife Sanctuary in Madhya Pradesh was on Monday declared a tiger reserve following in-principle approval from the Ministry of Environment, Forest, and Climate Change through the National Tiger Conservation Authority.

Officials said this will bring significant benefits. "Local communities will see economic opportunities grow with the promotion of ecotourism, which is expected to generate employment and improve livelihoods," said an official.

Officials said the tiger reserve designation enables the state to receive funding from the NTCA, which will "ensure better management and conservation efforts for wildlife".

"Eco-development programs are also set to provide further support to the region's inhabitants," said an official.

The notification delineates the core and buffer areas, making this the eighth tiger reserve in the state. The core area spans 763.8 square kilometers, while the buffer area covers 507.6 square kilometers, making the total area of the Ratapani Tiger Reserve 1,271.4 square kilometers.

Sitting in the lap of the Vindhya hills, the sanctuary en-

compasses a World Heritage Site – the Bhimbetka Rock Shelters – and many historical and religious destinations. It is located in the Raisen district with a substantial cover of teak forests and is less than 50 kilometres away from Bhopal.

The notification was issued under Section 38V of the Wildlife (Protection) Act, 1972, acknowledging the core area as a critical tiger habitat. This will cover nine revenue villages covering 26.947 square kilometers. "These villages have been integrated into the buffer zone. This decision ensures that the rights of local villagers within the sanctuary's boundaries will remain unaffected," said a wildlife officer.

Location:

- Situated in Raisen and Sehore districts, Madhya Pradesh.
- Lies on the **Vindhya Hills**, parallel to the **Narmada River**.
- Western boundary formed by the **Kolar River**.

Historical and Cultural Significance:

- **Bhimbetka Rock Shelters:** A **UNESCO World Heritage Site**, known for ancient rock paintings.
- Other notable sites:
 - **Ginnourgarh Fort, Keri Mahadeo, Ratapani Dam and Jholiyapur Dam**

Landscape:

- Rugged terrain with a mix of **hills, valleys, plateaus, and plains**.

Flora:

- Forest type: **Dry deciduous and moist deciduous**.
- Dominated by **teak**, which covers **55% of the area**.

Fauna:

- Apex predator: **Tiger**
- Other species:
 - **Chinkara** (endangered)
 - Panther, hyena, jackal, Indian fox, wild dog, jungle cat, small Indian civet.
 - Herbivores: Blackbuck, chausingha, spotted deer, barking deer, blue bull.

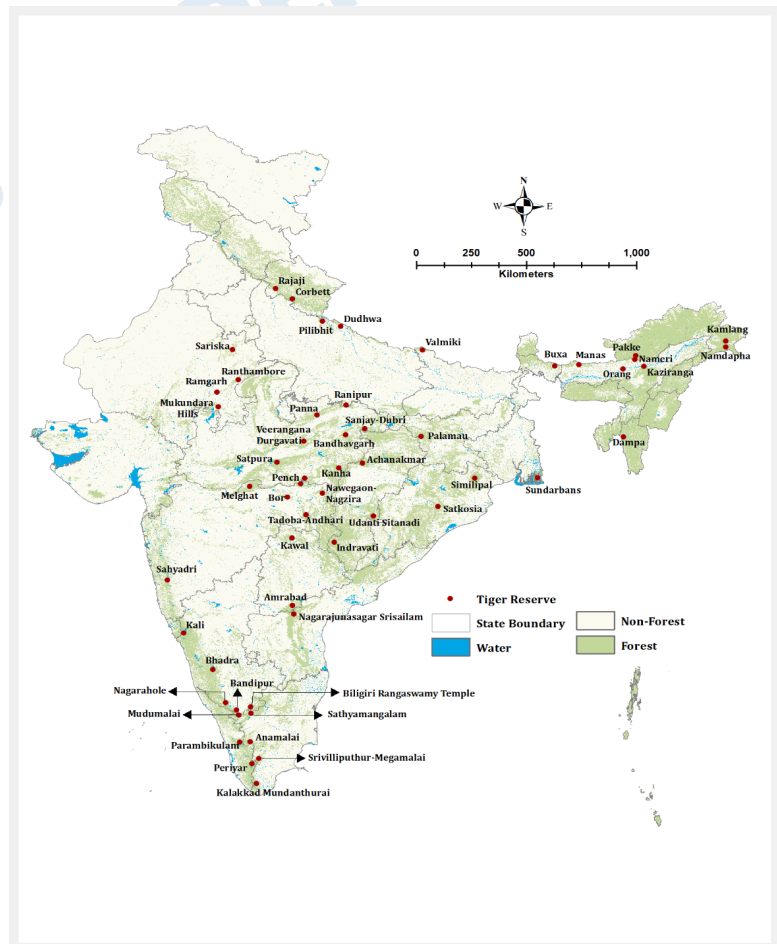


Image as per <https://ntca.gov.in/tiger-reserves/#tiger-reserves-2>

Green Steel

Source: https://epaper.thehindu.com/ccidist-ws/th/th_international/issues/109899/OPS/GL0DLKCNR.1+GVIDLL5RM.1.html

Green Steel and Its Role in Decarbonization:

1. Green Steel

- **Definition:**

Green steel refers to **steel produced using renewable energy and sustainable processes** to minimize **carbon emissions**.

- **Contribution to CO2 Emissions:**

The steel industry is responsible for **8% of global CO2 emissions**, making decarbonization critical.

2. Methods of Green Steel Production

- **Electric Arc Furnaces (EAF):**

Use **renewable electricity** to melt **scrap metal**, significantly lowering CO2 emissions.

- **Green Hydrogen-Based Reduction:**

Replaces **coal** with **green hydrogen** to process **iron ore**, reducing carbon footprint.

- **Direct Electrolysis:**

Similar to aluminum production, it uses **renewable electricity** to extract **iron from ore** (e.g., **Boston Metal's** innovation).

- **Ship Dismantling:**

Ferrous scrap from dismantled ships is used, ensuring a **reduction in carbon emissions**.

3. Significance of Green Steel

- **Environmental Impact:**

Can reduce **up to 75%** of CO2 emissions, contributing to a **sustainable steel industry**.

- **Circular Economy:**

Promotes the recycling of **ferrous scrap** from end-of-life products like ships and vehicles, reducing waste and emissions.

- **Economic Potential:**

Drives **demand for renewable energy** and **green hydrogen**, spurring **innovation** and **job creation** in decarbonization technologies.

- **Alignment with Climate Goals:**

Supports initiatives like **SteelZero**, aiming for **zero-emission steel by 2050**.

- 1. **Hong Kong Convention:** The **Hong Kong International Convention** (2009) regulates **ship dismantling practices**, ensuring **environmentally sound recycling**.

- **Objective:**

Protects **worker health** and ensures **safe recycling practices** in the ship dismantling industry.

- **Global Implementation:**

The convention will take effect globally by **June 2025**, with **India ratifying** the agreement.

- **India's Progress:**

50% of **Alang shipyards** are compliant with the convention's standards.

- **Limitations:**

The convention allows **beaching** methods and primarily focuses on **safety**, rather than eliminating harmful practices.

Practice Question:

Q. Explain the concept of green steel and its potential role in reducing global CO2 emissions. How does it contribute to sustainable practices in the steel industry? Discuss the relevance of the Hong Kong Convention in promoting environmentally sound ship recycling. (250 words)

Rubber Plantation Development in Northeast India under Project INROAD

1.25 lakh hectares of rubber plantation completed in NE

STAFF REPORTER

GUWAHATI, Dec 2: Under the project INROAD (Indian Natural Rubber Operations for Assisted Development) funded by four top tyre companies, an area of 1,25,272 hectares have been covered under new rubber plantation across 94 districts in North-east and parts of West Bengal, in what is said to be one of the highest natural rubber plantations ever achieved in the country in four years.

Of the total target of 43,000 hectares in Assam, 37,000 hectares have been achieved.

The current rubber production in the Northeast is around 1.2 lakh metric tonnes

and the project INROAD aims to double it in the next eight to ten years.

Project INROAD entails the development of 200,000 hectares of rubber plantation in the Northeastern states and West Bengal. It is being financially supported by four members of the Automotive Tyre Manufacturers Association (ATMA) including Apollo, Ceat, JK and MRF and implemented by the Rubber Board of India.

The tyre companies are pumping in Rs 1,100 crore for the project, of which Rs 1,000 crore will be for plantation and the rest for skill development of farmers and building modern smokehouses. INROAD

- 37,000 hectares planted in Assam
- Bid to double rubber output in region



is a landmark initiative and the first of its kind in the world where the tyre industry is contributing directly towards the development of rubber plantations.

"We are targeting around 2.5 lakh farmers in the region. The share of North East in India's area under rubber plantation before the launch of the INROAD project was 23 per cent. Once the objective of developing plantations in an additional 2 lakh hectares under the INROAD project is achieved, it is estimated that the share of NE states will increase to 38 per cent. Similarly, the share of North East in India's natural rubber production will go up from 16 per

cent currently to 32 per cent," an official told The Assam Tribune.

"Notwithstanding challenges, nearly 90 per cent of the plantation target for the first four years under project INROAD has been achieved. Beyond expanding planting areas, the project has seen significant progress in strengthening local nurseries, and building grower capacities, a testament to the collaborative efforts among tyre companies and the Rubber Board of India", said Rajiv Budhbraja, Director General, Automotive Tyre Manufacturers Association.

» SEE PAGE 2

1. Project INROAD Overview:

- **Objective:** To expand rubber plantation in Northeast India and parts of West Bengal, aiming to double the region's rubber production in the next 8–10 years.
- **Total Plantation Area:** 1.25 lakh hectares of rubber plantation completed in 94 districts.
- **Financial Support:** Rs 1,100 crore funded by four major tyre companies—Apollo, Ceat, JK, and MRF.
- **Implementation Agency:** The project is implemented by the **Rubber Board of India** (Hq: Kerala).

1. Contribution of North East States:

- With a production of around 25,000 tonnes, **Assam is the fourth largest producer** in the country after Kerala, Tripura and Karnataka
- **Current Share:** North East accounts for **16%** of India's rubber production.
- **Future Target:** The project aims to increase the Northeast's share in India's rubber production to **32%**, with its plantation area rising from **23% to 38%**.

1. Geography and Climate for Rubber Cultivation:

Rubber trees thrive in tropical climates, primarily in regions near the equator. The key factors required for successful rubber cultivation are:

- **Temperature:** Rubber trees grow best in regions with an average annual temperature of **25°C to 28°C**.
- **Rainfall:** A high level of rainfall (around **2000 mm to 3000 mm per year**) is essential, spread evenly throughout the year.

- Soil:** The soil should be **deep, well-drained, and rich in organic matter**, with a slightly acidic pH (5.5 to 6.5).
- Altitude:** Rubber trees are grown at altitudes up to **1,000 meters** above sea level.
- Regions:** Major rubber-growing regions include **Southeast Asia** (Thailand, Indonesia, Malaysia), **West Africa**, and parts of **South America**. India, particularly the **Northeast**, is an emerging region for rubber cultivation.

Practice Questions:

1. **Evaluate the role of rubber cultivation in the socio-economic development of Northeast India. What are the key challenges faced by the region in expanding rubber plantations? (150 words)**

India and Global Plastic Treaty

Context: Recently, negotiations to ratify a legally binding pact to curb plastic pollution failed in Busan after the chair of the talks said that critical and unresolved issues, which needed additional time for consensus, prevented an agreement.

Extent of Plastic Pollution:

Plastic pollution is ubiquitous in the natural environment and affects ecosystems around the world, from ocean to mountains.

Oceans:

An estimated 14 million metric tons of plastic enters the ocean annually, with estimates of over 170 trillion plastic particles afloat in the world's oceans, wreaking havoc on livelihoods and ecosystems, and this number is expected to triple in the next twenty years (UNEP, 2021).

Atmospheric Plastic Pollution

Microplastic pollution is not limited to the ocean; indeed, these particles have been detected in the atmosphere of urban, suburban, and even in remote areas such as in high-altitude glaciers, the Arctic and Antarctic.

Plastics at the Poles:

Plastic debris and particles are traveling to the Arctic and Antarctic through marine and atmospheric pathways. Recorded evidence of plastic particles have been found in sea ice, surface water, sea floor and fresh snow in these regions.

Plastics in Mountains:

Mountain regions are not exempt from the impacts of plastic pollution. Plastic is the most common type of waste found in mountains, a trend driven largely by tourism.

About Global Plastic Treaty

The Global Plastic Treaty is a legally binding treaty aimed to prevent plastic pollution and govern plastic production and its disposal.

It is mandated by United Nations Environment Agency Resolution passed in 2022 to end plastic pollution.

In 2022, the UN Environmental Assembly convened in Nairobi, to debate the global plastic pollution

- 175 nations voted to adopt a Global Treaty for Plastic pollution—agreeing on an accelerated timeline so that the treaty could be implemented as soon as 2025.
- Established Intergovernmental Negotiations Committee to develop a legally binding global framework for addressing plastic pollution.
- Goal: To end plastic pollution by 2024 by recycling plastic waste.

Need for the Global Plastic Treaty

Rising plastic production: The world has produced much more plastic in recent decades.

- The annual global production of plastic doubled from 234 million tonnes (mt) in 2000 to 460 mt in 2019.
- Nearly half of this was produced in Asia, followed by North America (19%) and Europe (15%).
- Plastic production is expected to touch 700 mt by 2040, as per the Organization for Economic Co-operation and Development (OECD).

Slow Decomposition: Plastic waste takes a long time to break down and takes anywhere from 20 to 500 years to decompose but only less than 10% of global plastic has been recycled.

Micro plastic accumulation

Much of the plastic waste leaks into the environment, especially into rivers and oceans, where it breaks down into smaller particles (microplastic or nano plastic) This has severely impacted the environment and health of living beings.

Impact on climate change

Plastic contributes to climate change. In 2020, it was responsible for 3.6% of global GHG emissions. Most emissions (90%) came from plastic production. This process uses fossil fuels as raw materials. The remaining 10% of emissions come from waste management and treatment.

Impact on human health

Exposure to chemicals in plastic can harm human health. They can cause endocrine disruption and diseases like cancer, diabetes, and reproductive disorders. Plastic can also impair brain development.

What is India's position?

- India does not support restrictions on polymer production.
- India believes such restrictions go beyond the UNEA's 2022 resolution adopted in Nairobi.
- India wants financial and technical assistance included in any final treaty.
- India also seeks technology transfer to be part of the treaty provisions.
- India says decisions on harmful chemicals in plastic production should be based on scientific studies.

- The regulation of these chemicals should be handled domestically by each country.
- India calls for an assessment of the financial resources needed for waste management.
- It also stresses the need for adequate, timely, and predictable financial resources for waste management.

Plastic waste by India

- **India's plastic waste contribution:** India is the largest contributor to plastic pollution globally.
- **Amount of plastic waste:** India releases 9.3 million tonnes of plastic waste annually.
- **Global impact:** This accounts for almost 20% of the world's total plastic waste generation.

Indian Initiatives against plastic pollution

India's Plastic Waste Management Policies:

Key Points

- Ban on Single-Use Plastics:**
 - India has banned the production, use, and sale of single-use plastics like bags, cups, plates, cutlery, and straws in many states.
- Extended Producer Responsibility (EPR):**
 - The government has made plastic manufacturers responsible for managing and disposing of waste generated by their products.
- Plastic Waste Management Rules (2016):**
 - Introduced a framework for managing plastic waste, including recycling and waste-to-energy initiatives.
- Plastic Waste Management (Amendment) Rules, 2022:**
 - Prohibited the manufacture, import, stocking, distribution, sale, and use of carry bags made from plastic less than 75 micrometers.
 - Strengthened EPR guidelines along with the ban on identified single-use plastic items.
- Plastic Waste Management (Amendment) Rules, 2024:**
 - Defined biodegradable plastics as those capable of degradation without leaving microplastics in the environment.
 - Allow labeling of disposable plastic ware as biodegradable only if they do not leave any microplastics behind.
- Project Replan:** Reducing plastic from nature This is the first of its kind project in India, where plastic waste is de-structured, degraded, diluted and used with paper pulp while making handmade paper and thus reduces plastic waste from nature.
- India is a signatory to **MARPOL** (International Convention for the Prevention of Marine Pollution), which aims to reduce marine pollution, including from plastics.

Way Forward

- Finalize Global Treaty:**
 - Complete the global treaty by negotiating with all countries in the **5th INC session** (Intergovernmental Negotiating Committee).
- Agree on Production Limits:**

- a. Reach a common agreement on setting **production caps** for plastics and other related issues.
- 3. Ensure Inclusive Participation:**
 - a. Ensure that all nations, especially developing countries, have an equal voice and participation in the process.
- 4. Create Strong Monitoring and Enforcement:**
 - a. Set up effective systems to **monitor and enforce** the rules of the global treaty.
- 5. Mobilize Resources:**
 - a. Raise funds and resources for effective **implementation**, focusing on supporting developing countries.

AJMAL IAS ACADEMY, HOJAI

‘Rhino Food Xpress’ Inaugurated as Part of ASTC’s Innovative Business Initiative

Rhino Food Xpress inaugurated

This initiative provides Assamese youths with the chance to establish their own ventures by repurposing shut-down buses. It's a step towards fostering economic growth and improving transport services

STAFF REPORTER

GUWAHATI, Nov 29: As part of ASTC's 'Alternative Business on Shut Down Buses' initiative, ASTC chairman Pallab Lochan Das today inaugurated the restaurant 'Rhino Food Xpress' at ISBT, Betkuchi.

The project aims to convert decommissioned buses into small business spaces, providing opportunities for Assamese youths and enhancing ASTC's financial sustainability.

According to ASTC, the initiative seeks to transform unused buses into spaces for small-scale businesses, creating entrepreneurial opportunities for Assamese youth while boosting ASTC's financial stability.

Speaking at the inaugura-

tion, Chairman Das highlighted the financial challenges faced by ASTC due to the unviable operations of certain buses.

"This initiative provides Assamese youth with the chance to establish their own ventures by repurposing shut-down buses. It's a step towards fostering economic growth and improving transport services," he said.

Das expressed the hope that the project would not only enhance ASTC's image but also provide economic opportunities for individuals while supporting the corporation's revenue growth.

Under this initiative, over 60 buses located in Guwahati, Jorhat, and other places of the State will be leased for five years at a minimum

monthly rent.

ASTC Managing Director Chinmoy Phukan elaborated on the initiative, saying that the buses, measuring between 11 feet and 40 feet in length, could be transformed into restaurant, pharmacies, salons, parlours, or other small businesses.

"ASTC will provide the buses and space for the businesses, while the business owners will customize the buses according to their needs," he said.

He further said that the buses could be stationed at ASTC premises or at locations chosen by the lessees.

"ASTC has already received several proposals for creative uses of the buses, signalling a major shift in the corporation's revenue-generation strategy," he said.

As part of the Assam State Transport Corporation's (ASTC) 'Alternative Business on Shut Down Buses' initiative, 'Rhino Food Xpress' was inaugurated at the ISBT, Betkuchi by ASTC Chairman Pallab Lochan Das.

Objective of the Initiative

The initiative repurposes decommissioned buses into small business spaces, offering entrepreneurial opportunities for Assamese youth while bolstering ASTC's financial stability. Over 60 buses across Assam, including locations like Guwahati and Jorhat, will be leased to businesses at a minimum monthly rent for a period of five years.

Mission Arun Himveer

Mission Arun Himveer launched



CM Pema Khandu and other dignitaries during signing of an MoU between the ITBP and the Arunachal Pradesh Agriculture Marketing Board, in Itanagar on Friday. – Photo: Correspondent

- **Mission Arun Himveer** launched to boost market access for agri-horti produce in Arunachal Pradesh.
- **MoU signed** between Arunachal Pradesh Agriculture Marketing Board (APAMB) and ITBP to supply local produce.
- Aims to create **market opportunities**, enhance local economy, and **increase employment**.
- **Encourages farming** by addressing market access issues and promoting **reverse migration**.
- ITBP will **procure directly** from farmers, with payments routed through APAMB.
- The initiative will help **double farmers' income** and improve **relations** with border forces.

Kisan Pehchaan Patra (Farmer ID)

What is Farmer ID?

- **Kisan Pehchaan Patra (Farmer ID)** is a unique, **Aadhaar-linked digital identity** dynamically linked to **land records**. It includes key details such as **demographics, crops sown, and ownership information**.
- It forms the core of the **Farmers' Registry**, part of the **Agri Stack** under the **Digital Agriculture Mission** for building a **digital public infrastructure** in agriculture.

1. Implementation Targets:

- The goal is to issue **11 crore Farmer IDs** by **2026-27**:
 - **FY 2024-25**: 6 crore farmers
 - **FY 2025-26**: 3 crore farmers
 - **FY 2026-27**: 2 crore farmers
- States are adopting a **camp-mode approach** for rapid enrollment.

Significance

1. Streamlined Benefits:

- Ensures **targeted delivery** of subsidies, crop insurance, and welfare benefits via **Direct Benefit Transfers (DBT)**, eliminating leakages.

2. Data-Driven Governance:

- Provides reliable data for planning, **policy-making**, and monitoring of agricultural schemes.
- Improves tracking of crop patterns and climate resilience.

3. Integration with Agri Stack:

- Creates a unified platform for integrating various components like land records and credit data, enhancing **e-governance**.

Challenges

1. Data Issues:

- Discrepancies in land records or Aadhaar could exclude genuine farmers.

2. Infrastructure Gaps:

- Digital connectivity and expertise in rural areas remain inadequate.

3. Privacy Concerns:

- Farmers are wary of **data misuse** and lack awareness of safeguards.

4. Coordination Challenges:

- Uniform implementation across states requires strong collaboration.

Global Comparisons and Lessons

1. Brazil's Cadastro Ambiental Rural (CAR)

- A digital registry for rural landowners to track environmental compliance.
- **Lesson:** India's Farmer ID can integrate environmental and climate metrics for sustainable farming.

2. United States' Farm Service Agency (FSA) Database

- Comprehensive farmer registry linked with subsidies and insurance.
- **Lesson:** Prioritize user-friendly digital platforms and regular updates for reliability.

3. China's Agricultural Information Network

- Focuses on real-time monitoring of crop yields and prices.
- **Lesson:** India can adopt similar mechanisms for dynamic pricing and resource allocation.

Way Forward

1. Phased Rollout:

- Start with pilot projects to address initial challenges effectively.

2. Farmer Awareness:

- Build trust through transparent communication and education campaigns.

3. Robust Data Security:

- Ensure **cybersecurity measures** to protect sensitive information.

4. Capacity Building:

- Train local officials for efficient implementation.

The **Kisan Pehchaan Patra** has the potential to transform **agriculture governance** by enabling targeted interventions, improving transparency, and supporting farmers more effectively.

Practice Question:

What are the challenges in the implementation of agricultural subsidies in India and how can technology help in addressing these challenges? (250 words)

UPI: Revolutionizing Digital Payments in India

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=2079544>

Introduction

Launched in 2016 by the **National Payments Corporation of India (NPCI)**, the Unified Payments Interface (UPI) has transformed the digital payment landscape, making India a leader in real-time financial technology.

Features That Set UPI Apart

- 1.24/7 Availability:** Seamless fund transfers round the clock, including holidays.
- 2.Integrated Interface:** Supports multiple bank accounts via a single mobile application.
- 3.Enhanced Security:** Single-click **two-factor authentication** ensures secure transactions.
- 4.Privacy-First Design:** Virtual payment addresses eliminate the need to share sensitive bank details.
- 5.Versatile Functionality:** Covers payments for merchants, in-app purchases, donations, and more.
- 6.Cost Efficiency for Merchants:** Zero Merchant Discount Rate (MDR) incentivizes adoption.
- 7.Real-time Alerts:** Voice-enabled notifications aid small vendors and informal businesses.
- 8.QR Code Integration:** Enables instant payments through QR scanning.

Impact of UPI on India

1.Driving Financial Inclusion:

- Empowered rural populations, small businesses, and street vendors.
- Enhanced access to secure and reliable digital transactions.

2.Accelerating the Cashless Economy:

- Boosted during the pandemic as a safe alternative to cash.
- Improves transparency and reduces dependency on physical currency.

3.Consumer Empowerment:

- Flexible and user-friendly, offering multiple modes of payment.

4.Universal Acceptance:

- Adopted across sectors, from street-side vendors to large corporates.

Global Success and Expansion

1.Cross-Border Reach:

- Operational in **7 countries** (e.g., UAE, Singapore, France).

- Enables seamless transactions for Indians abroad.

2. Global Recognition:

- Accounts for **49% of global real-time payment transactions (2023)**.
- Advocates expansion to **BRICS nations** to facilitate remittances and financial inclusion.

Challenges and Limitations

1. Cybersecurity Concerns:

- Rising threats like phishing and identity theft cost ₹129 crore in 2022.
- Users' negligence accounts for **40% of fraud cases (RBI)**.

2. Infrastructure Gaps:

- Limited smartphone penetration and broadband access leave **45% of rural India** excluded.

3. Transaction Limits:

- Capped at ₹2 lakh, constraining high-value transfers.

4. Digital Divide:

- Excludes **20% of adults lacking digital literacy** (NSSO, 2022).

5. Operational Issues:

- Downtime during peak hours with a **5% failure rate** (NPCI, 2023).

Way Forward

1. Enhance Security Measures:

- Use advanced fraud detection systems.
- Conduct educational campaigns on safe usage practices.

2. Expand Rural Connectivity:

- Boost smartphone and broadband penetration, focusing on underconnected regions.

3. Innovative Solutions:

- Introduce offline UPI and QR-based solutions for non-smartphone users.

4. Global Collaboration:

- Strengthen ties with nations already using UPI (e.g., UAE, France, Singapore).

5. Public Awareness Campaigns:

- Emphasize user responsibility in preventing fraud.

Conclusion

UPI exemplifies how technology can drive **financial inclusion**, **economic efficiency**, and **digital empowerment**. By addressing challenges like cybersecurity risks and infrastructure deficits, UPI can further strengthen its role in India's journey towards a **cashless, digitally empowered economy** while continuing to influence global financial systems.

Practice Question:

Q. UPI is considered a game-changer for financial inclusion in India. Critically analyze its effectiveness in reaching marginalized and rural populations, and suggest measures to overcome existing barriers. (250 words)

MGNREGA Job Card Deletion

Source: https://epaper.thehindu.com/ccidist-ws/th/th_international/issues/110187/OPS/GOLDKRIBF.1+G0KDLVDTR.1.html

Context

The **deletion of job cards** under the **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)** has raised concerns over transparency, right to work, and accountability in its implementation.

Legal and Procedural Framework

1. Law Governing:

- Governed under **Schedule II, Paragraph 23** of the **MGNREGA Act, 2005**.
- Supported by **Master Circulars** from the **Ministry of Rural Development (MoRD)**.

2. Authority Responsible:

- **State Governments** handle deletions.
- Program Officer verifies and oversees the process.

Criteria for Job Card Deletion

1. Permanent Migration:

- Households relocating permanently outside the Gram Panchayat.

2. Duplicate Job Cards:

- Issued based on duplicate or forged records.

3. Fake Applicants:

- Cards obtained fraudulently.

4. Reclassification of Area:

- When a **Gram Panchayat** is upgraded to a **Municipal Corporation**.

5. Not Willing to Work:

- Workers explicitly express disinterest in continuing under MGNREGA.

Procedure for Deletion

1.Verification:

- Independent verification of reasons by the Program Officer is mandatory.

2.Opportunity to Be Heard:

- Affected workers must be given a chance to present their case.
- Testimonies from **two independent witnesses** are required.

3.Documentation:

- Reasons for deletion must be documented.
- Updated in the **MGNREGA Management Information System (MIS)**.

4.Transparency:

- Deletion reports must be shared with the **Gram Sabha** or **Ward Sabha**.

Concerns and Implications

1.Transparency Issues:

- Lack of adequate documentation or public disclosure may undermine worker confidence.

2.Impact on the Right to Work:

- Deletions without proper justification violate the **spirit of MGNREGA**, which ensures a **constitutional right to work**.

3.Implementation Challenges:

- Poor verification processes and administrative errors can lead to unjust deletions.

4.Data Management Issues:

- Inconsistent updates in MIS systems reduce accountability and oversight.

Practice Questions:

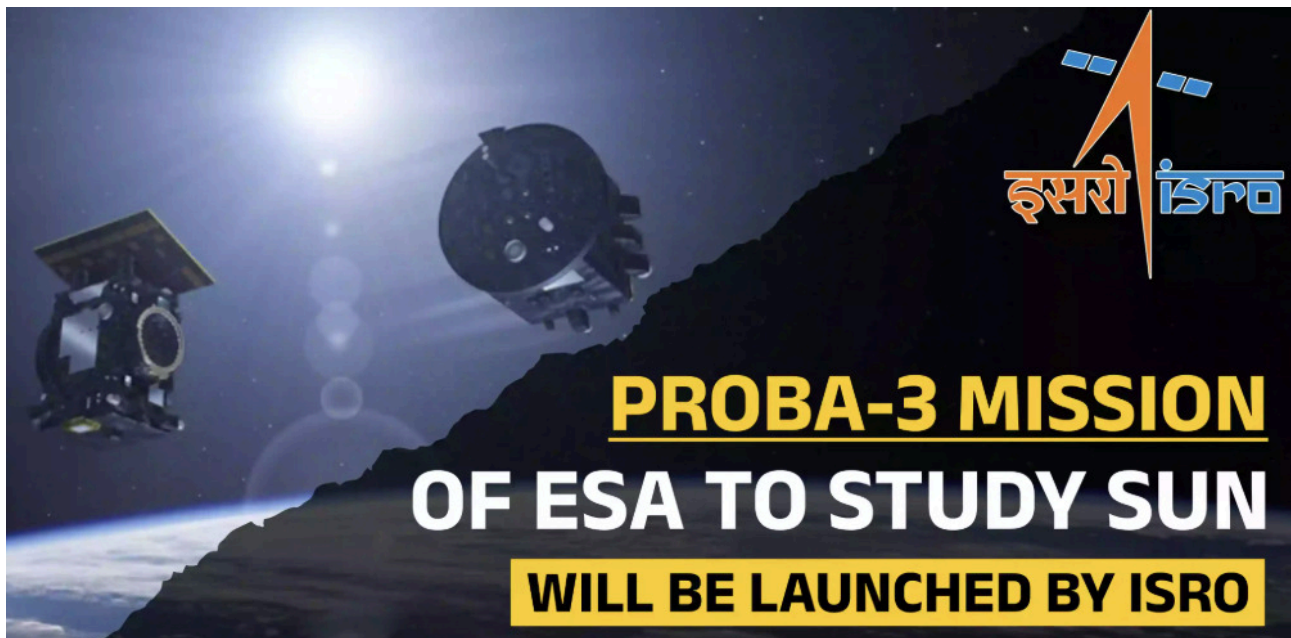
Q. Discuss the transparency and accountability mechanisms in the MGNREGA job card deletion process and suggest measures to address existing challenges. (150 words)

Q. Among the following who are eligible to benefit from the “Mahatma Gandhi National Rural Employment Guarantee Act”? (UPSC 2011)

- (a) Adult members of only the scheduled caste and scheduled tribe households
- (b) Adult members of below poverty line (BPL) households
- (c) Adult members of households of all backward communities
- (d) Adult members of any household

European Solar Mission: Proba-3

News: <https://indianexpress.com/article/explained/explained-sci-tech/significance-of-european-solar-mission-which-isro-will-launch-9690226/>



About the Proba-3 Mission

- **Proba-3** is a European Space Agency (ESA) solar observation mission set to be launched by **ISRO's PSLV rocket** on December 4, 2024, from Sriharikota.
- The mission employs **two satellites** that fly in formation to act as a single instrument—a **solar coronagraph**, designed to study the Sun's outer atmosphere, the **solar corona**.

Key Objectives of Proba-3

1. Study of Solar Corona:

- Observe the **Sun's corona**, which is usually obscured by its intense light, using a coronagraph setup.
- Investigate phenomena such as **solar storms** and **solar winds**, crucial for understanding **space weather dynamics**.

2. Simulating a Solar Eclipse:

- By precisely aligning the two satellites, Proba-3 will mimic a **natural solar eclipse**, creating an artificial shadow for continuous observation of the corona.

3. Understanding Space Weather:

- Solar events like coronal mass ejections impact satellite communications, power grids, and navigation systems on Earth.

Significance of the Mission

1.Enhanced Solar Research:

- Proba-3 will provide **high-resolution data** on the corona's behavior and its interactions with solar winds.
- Study of the Sun's **energy output** and radiation patterns, crucial for understanding the dynamics of stellar atmospheres.

2.Improved Space Weather Predictions:

- By measuring the effects of the Sun's radiation on **Earth's magnetosphere**, it will help predict and mitigate the impact of **solar storms**.

Technological Innovation

1.Precision Formation Flying:

- The mission demonstrates ESA's cutting-edge **formation-flying technology**, with satellites maintaining precise relative positioning to millimeter accuracy.

2.Unique Instrumentation:

- Instruments like **ASPIICS**, **DARA**, and **3DEES** enable a comprehensive study of solar irradiance, the corona, and space weather effects.

Global and Indian Benefits

1.Advancing Space Collaboration:

- Strengthens **India's partnership with ESA**, showcasing ISRO's capability as a global launch provider.

2.Space Weather Applications:

- Proba-3's findings can help India safeguard its growing satellite infrastructure by enabling better management of **space weather impacts**.

3.Boost to India's Space Diplomacy:

- Demonstrates India's capability in hosting advanced international missions, enhancing its reputation in the global space ecosystem.

Do You Know?

- Temperature of Corona:** Despite being the Sun's outermost layer, the corona can reach temperatures of **2 million°F**, hotter than the Sun's surface (~10,000°F).
- Solar Eruptions Impact:** Solar events can cause geomagnetic storms affecting power grids, aviation, and GPS systems.

Practice Questions:

- 1.Space weather has a profound impact on Earth's infrastructure." Explain this statement in the context of the Proba-3 mission and its objectives. (250 words)
- 2.Critically analyze the role of international collaboration in space missions like Proba-3 and its implications for India's space program. (250 words)

Storm Shadow and Oreshnik: Shaping the Ukraine-Russia War



Why in the News?

The **Ukraine-Russia conflict** recently saw a significant escalation with the deployment of advanced missiles, including the **British-made Storm Shadow** and the **Russian hypersonic missile Oreshnik**. These missiles are reshaping the dynamics of the war, marking critical advancements in missile technology and warfare strategy.

Key Takeaways

1. Storm Shadow:

- A **long-range, air-launched cruise missile** developed by the UK and France.
- **Range:** Up to **250 km**, designed to target bunkers, airbases, and other high-value military assets.
- **Stealth Features:** Low altitude flight, supersonic speed, and precision targeting, using **INS, GPS, and terrain reference navigation**.
- Operated by **Eurofighter Typhoon, Rafale, and Mirage 2000** fighter jets.

2. Oreshnik:

- A **Russian hypersonic intermediate-range ballistic missile (IRBM)** launched in retaliation to Ukraine's missile strikes.
- Claims of its use are linked to a strike on the Ukrainian city of **Dnipro**.
- Its precise capabilities remain unclear, but it adds a new layer of threat in the conflict.

3. Ballistic vs Cruise Missiles:

- **Ballistic missiles** use a parabolic trajectory and are powered for a short time. They are harder to intercept due to their predictable path. Examples include **Agni, Prithvi, and Dhanush** missiles.
- **Cruise missiles**, like **Storm Shadow**, fly at low altitudes and are difficult to track, often evading air defense systems.

4. ATACMS:

- The **U.S. Army Tactical Missile System (ATACMS)**, provided to Ukraine, is a **surface-to-surface ballistic missile** with a **range of up to 300 km**, enabling strikes deep into Russian territory, including Crimea.

Implications for the War

The use of these advanced missiles—Storm Shadow and Oreshnik—illustrates the growing sophistication of missile technology in modern warfare, providing both Ukraine and Russia with the capability to strike critical targets far beyond their borders. These developments also highlight the evolving role of **long-range missile systems** in influencing the outcome of conflicts.

India's First Indigenous Antibiotic, Nafithromycin, to Combat Drug Resistance

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=2075174>

Nafithromycin and Its Significance in India's Biotechnology Sector

Nafithromycin, India's first indigenously developed antibiotic, is a milestone in the biotechnology and healthcare sectors. Its development is particularly significant as it addresses the global health crisis of **antimicrobial resistance (AMR)** while showcasing India's growing capabilities in biopharmaceutical innovation.

What is Nafithromycin?

- Nafithromycin is a next-generation macrolide antibiotic designed primarily to treat **Community-Acquired Bacterial Pneumonia (CABP)**.
- Marketed as "Miqnaf" by Wolkardt, it is more potent, safer, and faster-acting than its predecessor, **Azithromycin**, with a shorter treatment regimen of just three days.
- It is effective against **drug-resistant bacterial strains**, targeting both typical and atypical pathogens with minimal side effects.
- Developed with support from **Biotechnology Industry Research Assistance Council (BIRAC)** under the Department of Biotechnology, it marks a leap forward in India's ability to produce world-class, indigenously developed drugs.

Why It Is a Breakthrough

1. Addressing Antimicrobial Resistance (AMR):

- AMR is a global health emergency, causing an estimated 1.27 million deaths directly in 2019 and contributing to 4.95 million deaths globally.



- Nafithromycin represents a **new class of antibiotics** at a time when the development pipeline for antibiotics has been stagnating for decades.

2. Tackling India's Pneumonia Burden:

- India bears **23% of the world's pneumonia burden**, and drug-resistant CABP has become increasingly difficult to treat with existing antibiotics.
- Nafithromycin's effectiveness against drug-resistant pneumonia pathogens can significantly reduce pneumonia-related deaths.

3. Indigenous Innovation:

- The drug showcases India's **self-reliance in pharmaceutical research and development**.
- It is a testament to India's capacity to tackle complex global health challenges without relying on foreign innovations.

4. Global Implications:

- By offering an effective and affordable solution, Nafithromycin can potentially be a **global tool against AMR**, benefiting developing nations where AMR is a pressing concern.

Antimicrobial Resistance and India's Initiatives

What is AMR?

AMR occurs when microorganisms evolve to resist the effects of antimicrobials, rendering treatments ineffective. Misuse and overuse of antibiotics in humans, animals, and agriculture accelerate this process.

Key Indian Initiatives:

1. National Programme on AMR Containment:

- Surveillance of AMR in healthcare settings.
- Strengthening infection control practices.
- Promoting rational use of antimicrobials.

2. National Action Plan on AMR (2017):

- Follows a **One Health approach**, integrating efforts across human, animal, and environmental health sectors.

3. Biotechnology Industry Research Assistance Council (BIRAC's) Role:

- Provides funding and support for innovative biotechnology projects, including drugs like Nafithromycin.

Conclusion

Nafithromycin is not just a medical advancement; it is a symbol of India's emerging leadership in combating global health crises. It exemplifies the power of indigenous innovation and the importance of addressing antimicrobial resistance through a comprehensive, multi-sectoral approach.

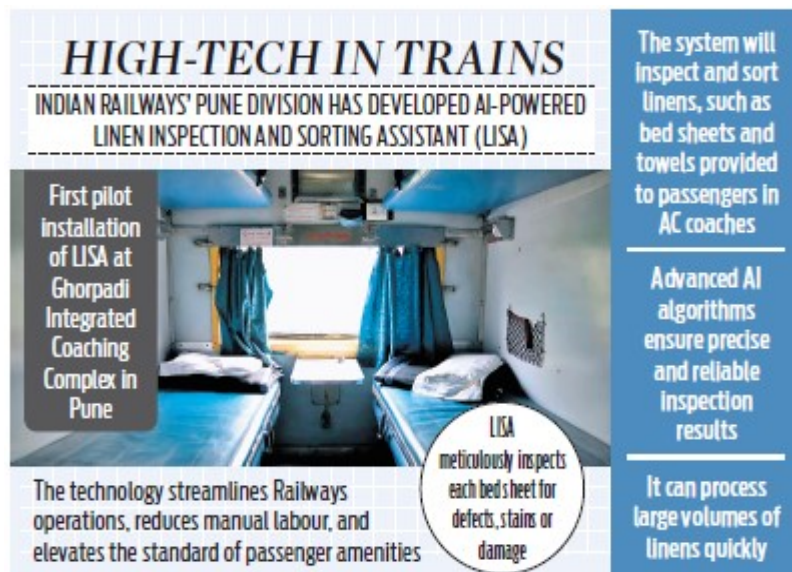
UPSC Mains (2015, GS III):

India's focus on affordable and accessible healthcare has led to developments like indigenous drug production. Critically examine the challenges in ensuring these benefits reach the entire population.

LISA (Linen Inspection and Sorting Assistant) System

Source: <https://www.newindianexpress.com/nation/2024/Dec/02/railways-launches-ai-based-bedroll-inspection-tech>

- LISA is an **AI-powered automation system** aimed at **inspecting and sorting linens** (such as bed sheets and towels) in air-conditioned coaches of **Indian Railways**.
- The system was developed by the **Pune Division of Indian Railways** and is deployed at the **Ghorpadi Integrated Coaching Complex (GICC)**.
- The system is an initiative of the **Ministry of Railways**.



Notifiable Diseases

Source: https://epaper.thehindu.com/ccidist-ws/th/th_international/issues/109755/OPS/GQHDKEIK9.1+G1MDLH2SP.1.html

What Are Notifiable Diseases?

- **Definition:**
Notifiable diseases are those that **must be reported** to the authorities to ensure effective monitoring and timely responses, especially for public health planning and management.
 - **Examples** of notifiable diseases: **Cholera, Tuberculosis, AIDS, Dengue.**
- **Power to Declare Notifiable Disease:**
The power to notify diseases lies with the **State Governments** under **public health legislation**. The **Centre** can recommend diseases for notification.

Features of a Notifiable Disease System

- **Mandatory Reporting:**
Healthcare facilities and **doctors** will be legally required to report all snakebite cases.

•**Legal Implications:**

Non-compliance with the reporting system may result in **penalties** under state laws, ensuring accountability.

•**Burden Analysis:**

Data collected through mandatory reporting will enable authorities to assess the **prevalence** and **severity** of snakebites in different regions.

•**Disease Control and Public Health Planning:**

Data on snakebites will facilitate **disease control strategies** and help in **planning preventive measures** for high-risk areas.

Other notifiable diseases in India	
■ Dengue	■ Measles
■ Chikungunya	■ Plague
■ Malaria	■ Mumps
■ Amoebic dysentery	■ Pertussis
■ Dysentery	■ Rubella
■ Fever syndromes more than six days	■ Rabies
■ Cholera	■ Syphilis
■ Diphtheria	■ Tetanus
■ Gonorrhoea	■ Ebola
■ Hepatitis A, B, C (acute)	■ Yellow fever
■ HIV	■ Tuberculosis
■ Influenza	■ Botulism

High Risk Foods

Source: https://www.business-standard.com/india-news/packaged-drinking-water-in-india-is-now-a-high-risk-food-here-s-why-124120300791_1.html



Context: The FSSAI has categorized **packaged drinking water** and **mineral water** as "**high-risk foods**" to enforce stricter safety and quality regulations. This change replaces the earlier requirement for **mandatory BIS certification** with **regular FSSAI inspections and audits**.

About High-Risk Food Classification

1. What it Means

- High-risk foods are those requiring **intensive safety measures** due to their **potential public health risks** if mishandled.

2. Governing Authority

- Managed by the **Food Safety and Standards Authority of India (FSSAI)** under the **Food Safety and Standards Act, 2006**.

3. Reasons for Classification

- To enhance **consumer safety** through **rigorous testing and monitoring**.
- To simplify the regulatory framework by replacing the **dual certification** process.

Examples of High-Risk Food Products

- **Dairy products** and analogues.
- **Meat, poultry, fish, and seafood**.
- **Eggs and egg-based products**.
- **Prepared and fortified foods** (e.g., fortified rice kernels).
- **Specialised nutritional products** (e.g., infant formula, therapeutic foods).

Significance of the Classification

1. Enhanced Safety Standards

- Mandatory inspections and audits ensure **safer food practices** across the supply chain.

2. Streamlined Compliance

- Replaces overlapping processes like BIS certification, making compliance more efficient.

3. Increased Consumer Trust

- Builds confidence in food safety measures by adhering to **transparent and standardized practices**.

Practice Question:

Q. Consider the following statements: (UPSC 2018)

1. The Food Safety and Standards Act, 2006 replaced the Prevention of Food Adulteration Act, 1954.
2. The Food Safety and Standards Authority of India (FSSAI) is under the charge of Director General of Health Services in the Union Ministry of Health and Family Welfare.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Nano Bubble Technology

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=2080223>

Context

- The **Union Minister of State for Forest, Environment, and Climate Change** recently launched the **Nano Bubble Technology** at the National Zoological Park, Delhi, for innovative water purification.

About Nano Bubble Technology

What is Nano Bubble Technology?

- Definition:** Utilizes **nanobubbles**—ultra-tiny bubbles (<200 nanometers in diameter)—to purify and enhance water quality.
- Innovative Features:**
 - Nanobubbles are **neutrally buoyant** and can stay suspended in water for extended periods.
 - They enable efficient **gas transfer** and **surface cleaning reactions**.

Properties of Nanobubbles

1. Size:

- Range from **70-120 nanometers**, making them about **2,500 times smaller** than a grain of salt.

2. Surface Charge:

- Possess a strong **negative charge**, preventing coalescence and stimulating **microbiological activity**.

3. Neutral Buoyancy:

- Stay suspended in water, allowing prolonged interaction for effective cleaning.

4. Hydrophobic Nature:

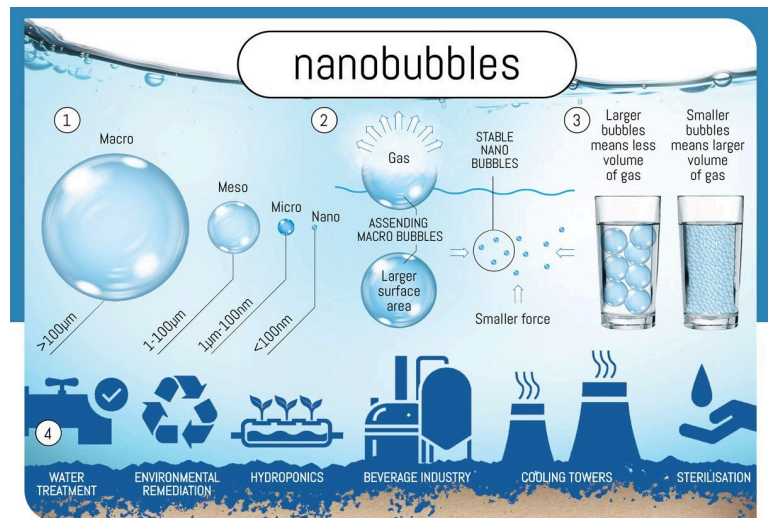
- Repels water and lifts organic and inorganic impurities for enhanced purification.

How It Purifies Water

1. Algae Removal:

- Breaks down algae, preventing buildup in stagnant water bodies.

2. Waste Treatment:



- Digests biological waste and separates impurities like oils and grease.

3. Gas Transfer:

- Enables **highly efficient oxygen transfer**, improving overall water quality.

4. Surface Cleaning:

- Removes organic materials and contaminants **without harmful chemicals**.

Significance of Nano Bubble Technology

1. Aquatic Health:

- Ensures clean water for **aquatic animals**, preventing diseases in controlled environments like zoos and aquariums.

2. Environmental Impact:

- Provides a **chemical-free**, sustainable alternative for water purification.

3. Wide Applications:

- Effective in:

- **Wastewater treatment**
- **Fermentation processes**
- **Biological process optimization** in various industries.

Cyclone Fengal and Landfall

Source: https://epaper.thehindu.com/ccidist-ws/th/th_international/issues/109581/OPS/GR5DKAEJD.1+G1RDLENG5.1.html

- The name “**Fengal**” was proposed by Saudi Arabia and is of Arabic origin.
- It reflects a mix of linguistic and cultural traditions, highlighting the diversity within the WMO/UNESCAP naming panel.
- Landfall Definition:** Landfall occurs when the eye of a tropical cyclone moves over land, marking a critical phase in the cyclone's life.
- Not to Confuse with a Direct Hit:**
 - Landfall happens when the eye crosses the coast.
 - A "direct hit" refers to the eyewall reaching the coast, even if the eye stays offshore.
- Formation of Cyclones:**
 - Originates from the evaporation of sea water into warm, moist air.
 - Rising air cools, forming clouds that rotate due to air circulation.
 - Warm sea temperatures fuel cyclone strength.
- Structure of a Cyclone:**
 - **Eye:** A calm, clear center with descending cold air and rising warm air spiraling around it.
 - **Eyewall:** Surrounding high thunderstorms with intense rain, winds, and lightning.
 - **Central Dense Overcast:** Cloud tops obscuring the eye, appearing as a bright disc on radar.
- Impact of Landfall:**
 - Moisture supply diminishes, weakening the cyclone.
 - Strong winds, heavy rains, and storm surges threaten coastal and inland areas.
- Post-Landfall Scenarios:**
 - Cyclone may dissipate or regain strength if it reemerges over water.
 - Example: Cyclone Gulab transitioned into Cyclone Shaheen after crossing peninsular India and reentering the Arabian Sea.

Colour-Coded Alerts for Cyclones

- Green (All is Well), Yellow (Be Aware), Orange (Be Prepared), Red (Take Action).**

Phlegraean Fields and Supervolcanoes

Source: <https://www.earth.com/news/supervolcano-italy-solfatara-crater-phlegraean-fields-shows-signs-of-waking-up/>



1. Phlegraean Fields (Campi Flegrei)

- **Location:**

- Situated in the western suburbs of **Naples**, Italy, within the **Campanian volcanic arc**.

- **Geological Features:**

- **13 km wide caldera** formed by collapsed volcanic craters.
- Emits **4,000–5,000 tons of carbon dioxide** daily, contributing to its active volcanic nature.

- **Significance:**

- One of the most notable **supervolcanic regions**, with potential for significant geological activity.
- It has been active for thousands of years and remains closely monitored due to the potential risks it poses.

2. Supervolcanoes

- **Definition:**

- A **supervolcano** is a volcanic centre capable of producing eruptions that eject over **1,000 km³ of material**.
- They are associated with the formation of **calderas** (large depressions in the Earth's crust).

•**Key Characteristics:**

- **Long formation timescales** (thousands of years).
- **Massive energy release**, often with global consequences during eruptions.
- Resulting in **depressions** rather than traditional steep volcanic peaks.

•**Examples:**

- **Yellowstone Caldera** (USA), **Toba** (Indonesia), **Phlegraean Fields** (Italy)

Aspect	Volcano	Supervolcano
Size	Smaller, conical structure	Massive calderas spanning dozens of kilometers
Eruption Volume	Less than 1,000 km ³ of material	More than 1,000 km ³ of material
Frequency	More frequent eruptions	Extremely rare, occurring over millennia
Impact	Local or regional effects	Global climate and ecosystem impact
Visibility	Typically, visible as steep mountains	Often subtle depressions difficult to identify

Dal Lake

Source: <https://ddnews.gov.in/en/asias-first-water-transport-service-uber-shikara-launched-on-dal-lake/>



Context: Uber has launched its first water transport service in Asia, **Uber Shikara**, on Dal Lake in Jammu and Kashmir.

Key Features of Dal Lake

1. Location:

- Situated in **Srinagar, Jammu and Kashmir**.
- Surrounded by the **Pir Panjal mountains**.

2. Nicknames:

- Known as the “**Jewel in the Crown of Kashmir**” and “**Srinagar’s Jewel.**”

3. Size and Structure:

- Covers **18 square kilometers**, forming part of a **21.1 square kilometer wetland**.
- Includes **floating gardens** (locally called “**Raad**”) that bloom with **lotus flowers** in **July and August**.

4. Basins and Islands:

- Divided into **four basins**:

- **Gagribal, Lokut Dal, Bod Dal, Nagin Basin** (sometimes considered a separate lake).

- Notable **islands**:

- **Char Chinari** (Four Chinars), **Sone Lank** (Gold Island).

5. Floating Market:

- Famous for its vibrant **floating market** where vendors sell goods from **wooden shikaras**.

6. Depth and Seasonal Changes:

- Depth ranges from **6 meters (deepest)** to **2.5 meters (shallowest)**.
- During winter, parts of the lake **freeze** as temperatures can drop to **-11°C**.

7. Significance:

- Integral to **Kashmir’s culture, tourism, and economy**.
- Famous for **houseboats, Shikara rides, and floating gardens**, attracting tourists worldwide.



Floating Market of Dal Lake

Mahim Bora

Event held to commemorate birth centenary of Mahim Bora

CORRESPONDENT

NAGAON, Nov 29: Anandaram Dhekial Phukan College and Sahitya Akademi jointly organised a day-long programme to commemorate the birth centenary of noted Assamese litterateur and storyteller Mahim Bora.

The programme, which included discussion sessions, was held on the college premises here.

Noted literary critic Prabhat Bora inaugurated the discussion sessions and spoke about the characteristics of Assamese poetry and short stories during the 'Ramdhenu' era.

He said that if Mahim Bora had only written

poetry, he would have shared the dominance of Assamese poetry with Navakanta Barua during the Ramdhenu era.

The inaugural function was presided over by the principal of the college, Dr Sadananda Payeng.

The first discussion session was moderated by promising literary critic Arindam Borkataki. The speakers at the session were Ananya Hiloidari, Purabi Chakravarty Sut, and Dr Milan Neog.

The second discussion session was moderated by poet and critic Dr Ajit Bharali. The speakers at the session were Amiya Patra, Dr Shahin Jafri, and Dr Utpala Barua.

Mahim Bora was a renowned Assamese writer, literary figure, and freedom fighter.

1. Birth and Early Life: Mahim Bora was born on **July 22, 1920**, in the village of **Borbori**, located in **Jorhat district** of Assam.

2. Literary Contribution: He was a prominent figure in Assamese literature and contributed extensively to **fiction, poetry, and essays**. His works are characterized by their portrayal of rural life, human emotions, and social issues.

3. Notable Works:

- "**Miri Jiyori**" (The Miri Woman) – A novel that is regarded as one of his best works, depicting the life of a rural woman.
- "**Siddhartha**" and "**Beli Kani**" – Other significant contributions to Assamese literature.

4. Freedom Struggle: Bora was an active participant in the **Indian freedom movement**, particularly during the **Quit India Movement of 1942**. He was arrested and imprisoned for his involvement in the movement against British colonial rule.



5. Post-Independence Activities: After independence, Mahim Bora was involved in **cultural and social activities**, working to promote the welfare of Assamese society and its cultural heritage.

6. Awards and Recognition:

- He was honored with various awards for his literary contributions, including the **Assam Sahitya Sabha Award**.
- He was also recognized by the Government of Assam for his services to Assamese literature.

Hornbill Festival 2024



Why in News?

- Nagaland is organizing the **Hornbill Festival** from **December 1 to December 10, 2024**, at the **Kisama Heritage Village**, near Kohima.
- Celebrated as the “**Festival of Festivals**”, it showcases the **culture, heritage, and traditions** of Naga tribes.

Key Takeaways:

- 1. Named after the Great Hornbill:** A revered bird symbolizing the festival.
- 2. Naga Tribe Representation:** Brings together all **17 major tribes** to display their unique customs through **dance performances, songs, and food**.
- 3. Cultural Highlights:**
 - Warriors dressed in ceremonial attire perform **traditional dances and war cries**.
 - Performances narrate tales of **victories, harvests, love, and legends**.
- 4. Tourism Boost:** Promotes the state’s rich tribal diversity globally.

Great Hornbill

- **Habitat:** Found in **evergreen and moist deciduous forests**, especially in the **Western Ghats and Himalayas**.

•Conservation Status:

- IUCN Status: **Vulnerable.**
- Wildlife Protection Act, 1972: Listed under **Schedule I.**

•State Bird: Arunachal Pradesh and Kerala.

•Hornbill Diversity in India: Northeastern India hosts the highest diversity of hornbill species, with **nine species found nationwide.**

About Nagaland

1.Statehood: Became the **16th state of India** on **December 1, 1963.**

2.State Symbols:

- Bird: Blyth's Tragopan.
- Animal: Mithun (shared with Arunachal Pradesh).

3.GI-Tagged Products:

- Naga Mircha.
- Naga Tree Tomato.
- Naga Cucumber.

4.Protected Areas:

- Intanki National Park.
- Fakim Wildlife Sanctuary.
- Others: Singphan and Pulie Badze Wildlife Sanctuaries.

5.Agriculture: Over **85%** of Nagaland's population depends on agriculture, making it central to its festivals and culture.

Ajmer Sharif Dargah and Khwaja Moinuddin Chishti

Source: <https://indianexpress.com/article/explained/explained-history/dargah-sharif-of-ajmer-shiva-temple-claim-9701243/>



1. About Ajmer Sharif Dargah

•Location and Significance:

- Located in **Ajmer**, Rajasthan, it is one of the most revered shrines in India, dedicated to **Khwaja Moinuddin Chishti**.
- The dargah holds significant **spiritual and historical** importance, attracting people from all religions.

•Historical Evolution:

- **Built in the 15th century** by the **Khalji rulers** of Malwa, with expansions under **Mughal emperors** like **Akbar** and **Humayun**.
- **Buland Darwaza** (by Sultan Mahmud Khan Khalji) and the **White Marble Dome** (by Humayun in 1532) are key features.
- **Akbari Masjid** was built by **Akbar** in the 1570s to enhance the shrine's significance.

•Architectural Features:

- **Buland Darwaza**: A fusion of **Hindu and Islamic** architectural styles.
- **White Marble Dome**: Symbolizes Mughal architectural grandeur.
- **Akbari Masjid**: A prominent mosque within the dargah complex.

2. Khwaja Moinuddin Chishti's Legacy

•Birth and Journey:

- Born in **1141 CE** in **Sistan** (modern-day Iran), Khwaja Moinuddin Chishti traveled widely across **Central Asia** and **South Asia** before settling in **Ajmer** in **1191 CE**.

- **Philosophy and Contributions:**

- Preached **Sufism**, focusing on **love**, **tolerance**, and **service to humanity**.
- Founder of the **Chishtiyya Sufi order** in India, which promoted unity and peace.

- **Titles and Legacy:**

- Revered as “**Gharib Nawaz**” (Protector of the Poor) for his compassion and generosity towards all, especially the underprivileged.
- His teachings attracted a wide following, including **kings**, **nobles**, and **commoners**, further embedding the dargah as a symbol of spiritual harmony.

3. Controversy Around the Dargah

- **Petition Claim:**

A recent petition claims the dargah was built on **demolished temples**, sparking debate and scrutiny around its origins and construction.

- **Cultural and Religious Significance:**

Despite the controversy, the shrine remains a symbol of **spiritual inclusivity**, where people of all faiths come together in reverence to Khwaja Moinuddin Chishti’s universal message of **love** and **compassion**.

Practice Question:

Q. Discuss the historical significance of Ajmer Sharif Dargah and the legacy of Khwaja Moinuddin Chishti. In light of recent controversies, examine the role of religious spaces in fostering cultural integration. (250 words)

Lothal: A Gateway to India's Maritime Past

Context

The recent incident at Lothal reminds us of the challenges and dangers researchers face in uncovering the depths of history. Lothal, a cornerstone of the **Indus Valley Civilization**, holds immense significance in India's ancient maritime and trade legacy.



About Lothal

- **Historical Significance:**

- Established around **2200 BCE**, Lothal is the **southernmost site of the Indus Valley Civilization**.
- Known for its **bead-making industry** and thriving **maritime trade network**.

- **Remarkable Features:**

- Lothal houses the **world's earliest known dockyard**, showcasing sophisticated engineering linked to **ancient trade routes**.

- **Discovery and Validation:**

- Excavations led by **S.R. Rao (1955-1960)** confirmed its maritime importance through the presence of **marine microfossils** and other artifacts.

- **Cultural Recognition:**

- Proposed for inclusion as a **UNESCO World Heritage Site** in **2014**, though still on the tentative list.

- Modern Revival:**

- The **National Maritime Heritage Complex** (₹3,500 crore project) is under development to commemorate Lothal's significance.
- The complex will recreate **Harappan architecture** and exhibit India's ancient maritime legacy, blending history with modernity.

Notre-Dame Cathedral

Source: <https://indianexpress.com/article/lifestyle/a-new-dawn-for-notre-dame-cathedral-9697486/>



- Location:** Situated on Île de la Cité, in the Seine River, Paris, France.

- Architecture:**

- Iconic French Gothic style.
- Features ribbed vaults, flying buttresses, stained-glass windows, and carved gargoyles.

- Historical Significance:**

- Construction: Began in 1160, completed by 1260.

- Hosted Napoleon I's coronation as Emperor in 1804.
- Houses relics, including the Holy Crown of Thorns.

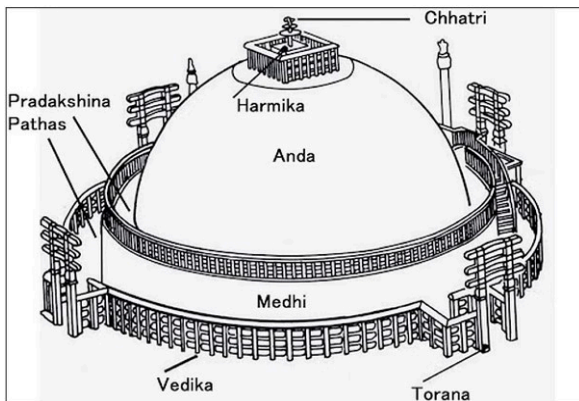
• **Cultural Importance:**

- Inspired Victor Hugo's *The Hunchback of Notre-Dame*.
- Celebrated worldwide in literature, film, and art.

• **Legacy:** Despite the 2019 fire, it remains a symbol of resilience and artistic brilliance.

Great Stupa at Sanchi

Source: <https://www.newsonair.gov.in/2-day-mahabodhi-mahotsav-is-being-held-at-the-great-stupa-at-sanchi-in-madhya-pradesh/>



Historical Significance:

- Built in the 3rd century BCE by Emperor Ashoka.
- Expanded under Shunga and Satavahana dynasties.

Architectural Features:

- **Dome (Anda):** Represents the universe.
- **Chatras:** Umbrella-like structures symbolizing royalty and divine protection.
- **Harmika:** Balcony atop the dome, signifying the gods' realm.
- **Medhi:** Houses relics and forms the stupa's base.
- **Toranas:** Four intricately carved gates depicting Buddha's life and Jataka tales, oriented to cardinal directions.
- **Vedica:** Enclosing railings offering sacred protection.
- **Pradakshinapatha:** Pathway for circumambulation by devotees.

Symbolism: Reflects early Buddhist aniconism, where Buddha is symbolized through footprints, wheels, or empty thrones instead of direct images.

Inscriptions:

- Features Ashokan Lion Capital.
- Includes inscriptions in Brahmi and Kharosthi scripts.

UNESCO Status: Recognized as a World Heritage Site in 1989 for its cultural and historical significance.

MAPPING:

Aleppo, Syria:

Context: https://epaper.thehindu.com/ccidist-ws/th/th_international/issues/109899/OPS/GL0DLKCNS.1+GSUDLLO4F.1.html

About Aleppo City:

Aspect	Details
Location	Northern Syria, 30 miles south of the Turkish border .
River	Quwayq River runs through Aleppo but often dries up due to heavy water usage in Turkey.
Terror Organization Involved	Hayat Tahrir al-Sham (HTS)
Significance	- Ancient trade hub at the crossroads of major commercial routes. - Hosts the UNESCO World Heritage site “Old City of Aleppo,” including its iconic citadel, a prime example of medieval Islamic architecture.

Significant Features of Syria:

- Historically Rich *Levant Region*
- Key Battleground in Shia-Sunni Conflicts
- Focal Point of the Arab Spring Movements



Georgia

Source: <https://theprint.in/world/protests-in-georgia-spread-as-pm-defies-us-condemnation/2382882/>

Aspect	Details
Capital	Tbilisi
Neighbours	- Russia (north and northeast) - Azerbaijan (east and southeast) - Armenia and Turkey (south) - Black Sea (west)
Geographical Features	- Highest Point: Mount Shkhara in the Greater Caucasus range - Major Rivers: Inguri, Rioni, and Kodori
Conflict Regions	Abkhazia, South Ossetia, and Ajaria



South Korea

Source: <https://www.thehindu.com/opinion/editorial/costly-miscalculation-on-the-south-korean-presidents-announcement/article68947326.ece>

Context: South Korea recently experienced a political crisis when President Yoon Suk Yeol declared **martial law**, citing alleged “anti-state forces.” The situation was quickly resolved as **parliament overturned the declaration**, restoring democratic governance.

About South Korea

Geography and Location

• **Location:**

- Situated in **East Asia**, forming the southern portion of the **Korean Peninsula**.



- **Capital City:**

- **Seoul**, a global hub for technology and culture.

- **Neighbours:**

- **Land Borders:**

- **North Korea**, separated by the **Korean Demilitarized Zone (DMZ)**.

- **Maritime Borders:**

- **Yellow Sea** (West).
- **Sea of Japan** (East) – referred to as the East Sea by South Korea.
- **East China Sea** (South).

Governance

- **System:**

- Operates under a **Presidential system**, with the **parliamentary oversight** ensuring checks and balances.

Rivers

- **Han River:** Flows through **Seoul**, crucial for water resources and tourism.
- **Nakdong River:** The **longest river**, vital for agriculture and regional ecology.

Key Features

1. Demilitarized Zone (DMZ):

- A **250 km-long buffer zone** created after the **Korean War** (1950–1953).
- Established to reduce direct military conflict between the two Koreas.
- The **38th parallel north** served as the initial division line before the Korean War.

2. Yeonpyeong Island:

- Located near the **maritime border with North Korea**.
- Known for **military confrontations**, including North Korean **artillery attacks**.



Exercise

1. Exercise CINBAX

- First India-Cambodia **joint tabletop exercise** (1–8 Dec 2024) held in Pune with 20 personnel from each nation's Infantry(Army) Brigade.

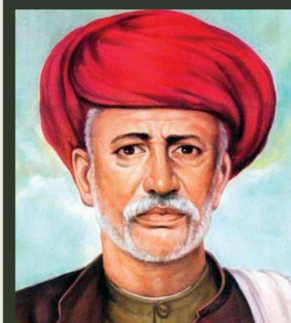


Important Days

Jyotirao Phule and Savitribai Phule

Context: **November 28** marks the death anniversary of Jyotirao Phule. He, along with Savitribai Phule, worked as a social reformer, fighting against social evils like untouchability and promoting women's education.

Mahatma
Jyotiba
Phule



Key Takeaways on Jyotirao Phule

1. Early Life

•Birth and Background:

- Born on **April 11, 1827**, in Khatgun village, Maharashtra, into the **Mali caste** (traditionally gardeners).
- Titled **Mahatma** in 1888 by Vithalrao Krishnaji Vandekar.

•Education:

- Despite early hardships, Phule completed schooling at the **Scottish Mission High School** in 1847.

2. Major Contributions

•Founder of Satyashodhak Samaj (1873):

- Aimed at achieving **social and economic equality** for lower castes.
- Supported by Chhatrapati Shahu, the ruler of Kolhapur.
- Promoted the term '**Dalit**' to describe the oppressed.

•Advocate for Women's Education:

- Educated his wife, **Savitribai Phule**, breaking societal norms.
- Opened India's **first girls' school** in Pune (Bhidewada, 1848).

•Social Reformer:

- Opposed caste-based discrimination, child marriage, sati, and untouchability.

- Criticized Indian nationalists like Bal Gangadhar Tilak for resisting education for women and Dalits.

Key Takeaways on Savitribai Phule

1. Early Life

• Birth and Marriage:

- Born on **January 3, 1831**, in Naigaon village, Maharashtra.
- Married to Jyotirao Phule at age 10.

2. Major Contributions

• Women's Education:

- Became India's **first female teacher** and led efforts to educate girls and Dalits.
- Faced severe resistance, including physical attacks, during her campaigns.

• Social Initiatives:

- Founded the **Balhatya Pratibandhak Griha** to prevent infanticide by widows.
- Advocated for **inter-caste marriages**, widow remarriage, and abolition of practices like sati, child marriage, and dowry.
- Adopted Yashwantrao, a widow's child, whom she educated to become a doctor.

• Breaking Gender Norms:

- Defied societal conventions by performing her husband's funeral rites, traditionally reserved for men.

3. Relief Work

- Worked extensively during the **1896 famine** and the **1897 bubonic plague** in Maharashtra.
- Died on **March 10, 1897**, after contracting the plague while aiding a sick child.

Legacy of the Phules

- The Phules transformed societal attitudes by addressing deeply rooted issues like caste discrimination, patriarchy, and lack of education for marginalized groups.
- Their efforts continue to inspire movements for **equality, education, and social justice** in India.

This rich legacy underscores the importance of social reformers in shaping India's modern identity and advancing the cause of inclusive development.

International Day for the Elimination of Violence Against Women

- Observed annually on **November 25** since **1999** by the UN to raise awareness about **Violence Against Women and Girls (VAWG)**.
- Commemorates the **Mirabal Sisters**, symbols of resistance in the Dominican Republic.

Significant Observances

1. National Milk Day (26 Nov)

- Commemorates the birth anniversary of **Dr. Verghese Kurien**, father of the **White Revolution** in India.

Nandalal Bose (नंदलाल बोस)

Context:

- **December 3** marks the **birth anniversary of Nandalal Bose**, a pioneer of modern Indian art and a key figure in the **Neo-Bengal School**.
- He and his team created the illustrations for the **Constitution of India** at Santiniketan.

Key Contributions and Legacy

1. Life and Early Career:

- Born in **Munger, Bihar**, on December 3, 1882.
- Mentored by **Abanindranath Tagore**.
- Principal of **Kala Bhavan**, Santiniketan (1922).

2. Artistic Philosophy:

- Advocated a revival of **Indian artistic traditions** during colonial rule.
- Inspired by **nature** and **Indian art forms** like:
 - **Ajanta Caves murals, Mughal and Rajasthani miniatures, Japanese Nihonga traditions.**

3. Constitution Illustrations:

- Created **22 thematic illustrations** reflecting India's history and culture.
- Themes included:
 - **Indus Valley Civilisation, Ramayana and Mahabharata scenes, Freedom struggle depictions.**
- **Highlights:**
 - **Rani Lakshmibai, Tipu Sultan, Gandhi's Dandi March, and Subhas Chandra Bose.**

4. Significant Projects:

- **Haripura Session (1938):** Created panels depicting **village life** to celebrate rural India, using local materials.

5. Recognitions:

- Awarded the **Padma Vibhushan** (1953).
- His works were declared "**art treasures**" under the **Antiquities and Art Treasures Act (1972)**.

6. Death:

- Passed away on April 16, 1966, in **Santiniketan, West Bengal**.

Nandalal Bose's Constitution Illustrations:

1. Art in Constitution:

- **Hand-painted images** represent different eras, from the **Indus Valley** to the **freedom struggle**.



○Depictions include:

- **Buddha in hermitage** (Part V).
- **Mahavir meditating** (Part VI).
- **Gandhi's Dandi March** (Part XIX).

2.Cultural Representation:

○Showcases India's **geography, history, and cultural diversity**.

○Examples:

- **Mahabalipuram sculptures** (Part XIII).
- **Ashoka spreading Buddhism** (Part VII).
- **Rani Lakshmibai and Tipu Sultan** (Part XVI).

3.Collaborations:

○ **Beohar Rammanohar Sinha**: Sketched the intricate **Preamble designs**.

○ **Dinanath Bhargava**: Drew the **Lion Capital of Ashoka**.

Significance of Nandalal Bose for India

- **Cultural Renaissance**: Revived Indian art forms and merged them with modern themes.
- **National Identity**: Used art to reflect **India's heritage**, fostering national pride.
- **Mentorship**: Trained generations of artists at Santiniketan, encouraging innovation in Indian art.

Practice Question:

Q. Discuss the significance of Nandalal Bose's contributions to the Constitution of India in portraying the cultural and historical essence of the nation. (150 words)

Scheme

'One Nation One Subscription' (ONOS) Scheme

News: <https://indianexpress.com/article/explained/one-nation-one-subscription-9691391/#:~:text=Through%20the%20ONOS%20scheme%2C%20the,active%20from%20January%201%2C%202025.>

What is the ONOS Scheme?

- The ONOS scheme aims to centralize journal subscriptions for nearly 6,300 government-run institutions in India.
- It provides unified access to 13,000 scholarly journals under a single platform, covering a wide range of academic disciplines.
- Coordinated by **INFLIBNET (Information and Library Network)**, the initiative ensures equitable access to research resources for higher education institutions and research and development organizations.

Key Objectives

1. **Enhancing Research Accessibility**: Enable institutions to access international and national journals, breaking barriers of cost and availability.

- 2. Bridging Knowledge Gaps:** Reduce disparities between rural and urban educational institutions in terms of access to quality research material.
- 3. Supporting Innovation:** Foster a culture of research and innovation by making critical resources widely available.
- 4. Cost-Efficiency:** Consolidate fragmented subscription systems, reducing duplication and ensuring optimal resource utilization.

Significance

- **Global Research Ecosystem:** Strengthens India's position in global academic and research networks.
- **Skill Development:** Supports higher education and research by providing critical tools for learning and innovation.
- **Atmanirbhar Bharat Goals:** Aligns with India's self-reliance objectives by promoting indigenous research capacity.

Implementation Challenges

- 1. Infrastructure Gaps:** Limited internet and digital infrastructure in rural areas may hinder access.
- 2. Coordination Issues:** Harmonizing efforts across 6,300 institutions and ensuring smooth operations.
- 3. Publisher Negotiations:** Securing affordable terms from international publishers for comprehensive access.
- 4. Budget Constraints:** Sustaining the ₹6,000 crore outlay effectively while covering diverse disciplines.

Recommendations for Effective Implementation

- 1. Digital Infrastructure Development:** Enhance internet connectivity and IT infrastructure in rural and underserved areas.
- 2. Regular Monitoring:** Establish oversight mechanisms to evaluate the scheme's effectiveness and address gaps.
- 3. Capacity Building:** Train faculty and students in utilizing digital platforms and research tools efficiently.
- 4. Expanding Coverage:** Include more publishers and journals to cover niche and emerging disciplines.

Practice question:

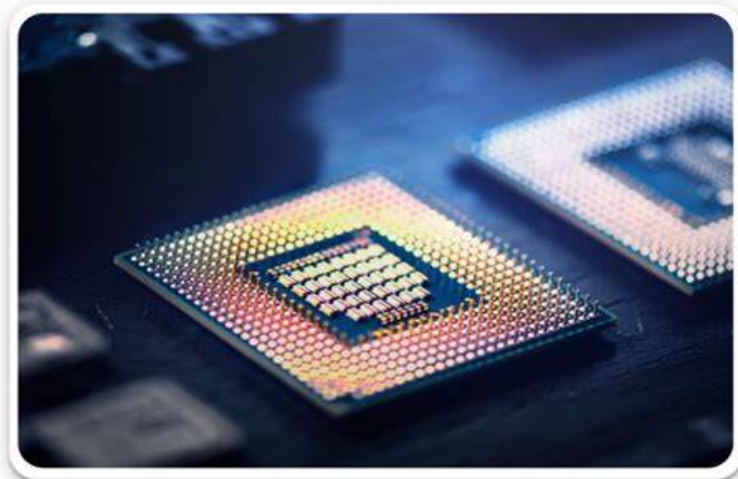
Discuss how the 'One Nation One Subscription' scheme can help bridge the knowledge divide between rural and urban educational institutions in India. Suggest measures to address challenges in its implementation. (250 words)

Design Linked Incentive (DLI) Scheme

Source: <https://indianexpress.com/article/technology/tech-news-technology/a-designed-in-india-5g-chip-fabbed-at-tsmc-is-facing-fund-crunch-low-commercial-uptake-9703103/>

Objective

- To promote **domestic semiconductor design** by supporting **startups, MSMEs, and companies** in the electronics sector.
- Aims to foster **import substitution** and enhance **value addition** in the semiconductor ecosystem.



Scope

- Focuses on providing **financial incentives** and infrastructure to boost semiconductor design capabilities for:
 - **Integrated Circuits (ICs), Chipsets, System on Chips (SoCs), IP cores, Other related designs**
- Targets innovation and domestic production over **five years**.

Key Components

1. Chip Design Infrastructure Support

- Establishment of the **India Chip Centre** by C-DAC for:
 - **Advanced design tools.**
 - **IP cores.**
 - **MPW fabrication** (Multi-Project Wafer).
 - **Post-silicon validation services.**

2. Product Design Incentive

- Reimbursement of **up to 50% of eligible costs**, with a cap of **₹15 crore per application**.

3. Deployment Linked Incentive

- Incentive of **4%-6%** on **net sales turnover** over five years.
- Maximum limit: **₹30 crore per application**.

Nodal Agency

- **Centre for Development of Advanced Computing (C-DAC).**

RESET Programme (Retired Sportsperson Empowerment Training)

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=2079835>

1.Ministry:

- Launched by the **Ministry of Youth Affairs and Sports.**

2.Aim:

- To **facilitate career development** for retired athletes through education, internships, and skill-building initiatives.

3.Eligibility Criteria:

- **Age Range:** 20–50 years.
- **Participation:** Retired athletes who are winners or participants in:
 - International events.
 - National or state-level events recognized by sports federations or the Ministry.

4.Programme Features:

- Offers **16 specialized courses** such as:
 - Strength & Conditioning Trainer, Sports Nutritionist, Yoga Trainer, Sports Entrepreneurship, among others.
- Provides **internships** for hands-on experience.
- Focuses on bridging the **human resource gap** in the sports sector.

5.Objective:

- Ensure a **sustainable career pathway** for retired athletes.
- Strengthen the sports ecosystem by utilizing the expertise of retired players.

Miscellaneous

Context: General Upendra Dwivedi, the Chief of the Army Staff (COAS), launched the Eklavya online learning platform for the Indian Army.

- This initiative aligns with the Army's vision of a "**Decade of Transformation**" and the 2024 theme, "**Year of Technology Absorption.**"

About Eklavya Platform:

- **Developed by:** Bhaskaracharya National Institute of Space Applications and Geoinformatics ([BISAG-N](#)), with support from the Directorate General of Information Systems.
- **Launched in:** 2024 by the [Chief of the Army Staff](#), General Upendra Dwivedi.
- **Aim:** To facilitate continuous professional military education, decongest physical courses, and encourage domain specialization.
- **Features:**
 - Hosted on the Army Data Network with scalable architecture.
 - Includes "**Knowledge Highway**" for accessing journals, research papers, and articles.
 - Registration delinked from physical nominations; accessible throughout an officer's career.
 - Focuses on **contemporary content and emerging concepts** aligned with modern warfare.

ISKCON

About ISKCON:

- **Full form:** International Society for Krishna Consciousness.
- **Founder:** C. Bhaktivedanta Swami Prabhupada.
- **Founded In:** New York City, USA.
- **Year:** 1966
- **Aim:** To promote [Krishna](#) Consciousness and devotional service to Krishna as the Supreme Godhead.
- **Features:**
 - Largest branch of **Gaudiya Vaishnavism**, rooted in 16th-century India.
 - Emphasizes chanting the **Hare Krishna Mahamantra**.
 - Engages in public bhakti practices like **Sankirtan, yoga seminars**, and festivals.
 - Runs social initiatives, including free food distribution, schools, eco-villages, and hospitals.

New Pamban Bridge:

- **Unique Feature:** India's first vertical-lift railway sea bridge with a span that moves vertically for navigational clearance.
- **Location:** Connects Rameswaram Island to Mandapam on Tamil Nadu's mainland.
- **Specifications:**



- Total Length: 2.078 km with 99 spans.
- **Technology:** Features electromechanical control interlocked with the train control system for vertical lifting.
- **Design Innovations:** Designed for double railway lines and future electrification, replacing the old Pamban Bridge built in 1914.

Animal Quarantine and Certification Services (AQCS)

Context:

- **Cochin International Airport Ltd (CIAL)** facilitated its **first successful import of a pet** under the AQCS certification, marking a significant milestone.



About AQCS

Establishment

- Initiated during the **Fourth Five-Year Plan (1969-70)** as a **central sector scheme** by the Government of India.
- Operates under the **central animal husbandry department**.

Objectives

1. Disease Prevention

- Prevent entry of exotic livestock diseases into India through imports under the **Livestock Importation Act**.

2. Defense Against Veterinary Diseases

- Enforce policies on the **import regulation, restriction, and prohibition** of livestock, products, and microorganisms.

3. Export Certification

- Issue **internationally recognized certifications** to boost animal-related exports and enhance **national income**.

4. Inspection and Registration

- **Inspect and register plants/mills** exporting animal by-products to comply with global standards.

Primary Functions

- Enforce the **Livestock Importation Act**.
- **Detain, test, and observe** imported/exported livestock and products.
- Ensure the **destruction of infected imports** posing health risks.
- Issue certifications for livestock exports to meet **international veterinary standards**.

This streamlined system plays a pivotal role in safeguarding animal and public health while promoting India's trade potential in the livestock sector.

UNSC Resolution 1701

- Ceasefire agreement between **Israel and Lebanon** after a 13-month-long conflict, based on **Resolution 1701 (2006)**.
- Key provisions: Hostility cessation, buffer zone creation, and Israeli troop withdrawal along the '**Blue Line**'.

National Initiatives and Achievements

1.Global Cooperative Alliance Conference

- First-ever **ICA Global Cooperative Conference** in India (25–30 Nov 2024).
- Theme: '**Cooperatives Build Prosperity for All**'.
- PM Modi launched **UN International Year of Cooperatives 2025** and a commemorative postal stamp symbolizing sustainability and modern technology in agriculture.

2.PAN 2.0

- PAN to be the "**single source of truth**" for business and tax-related identification.
- Features: Enhanced **QR codes**, online application, and data protection via a **data vault system**.

3.First Constitution Museum

- Inaugurated at **O.P. Jindal Global University**, Haryana, by Lok Sabha Speaker **Om Birla**.
- Offers interactive, digital experiences for understanding the **Indian Constitution**.

Global Innovation Index (GII) 2024

- **Released by:** World Intellectual Property Organisation (WIPO).
- **India's Ranking:** Rose from **81st in 2015** to **39th in 2024**, showcasing remarkable progress in innovation capacity and output.
- **Top-Ranked Country:** **Switzerland** with a score of **67.5**.
- **Purpose:** Measures the innovation performance of 132 economies based on **indicators like research, development, technology adoption, and creative outputs**.

Defence

SAREX-24

The 11th edition of the **Indian Coast Guard's** National Maritime Search and Rescue Exercise (SAREX-24) is being held in Kochi, Kerala.

About SAREX-24:

- **Location:** Kochi, Kerala.
- **Theme:** "Enhancing Search and Rescue Capabilities through Regional Collaboration."



- **Activities:**

- Sea exercise involving contingencies with participation from Coast Guard, Navy, Air Force, Cochin Port Authority, and Customs.

- **Objectives:**

- Evaluate operational efficiency and coordination.
- Strengthen collaborative efforts among regional and international maritime agencies.

- **Significance:** Largest-ever simulations, enhancing cooperative engagement with littoral states and friendly nations.

Rafale-Marine (Rafale-M)

Source: https://www.business-standard.com/external-affairs-defence-security/news/india-likely-to-seal-navy-rafale-jet-deal-next-month-why-it-s-just-in-time-124120200548_1.html

Rafale-M

- **Manufacturer:** Dassault Aviation (France).
- **Type:** Multi-role, single-seat 4+ generation fighter aircraft.
- **Purpose:** Operates in naval environments with capabilities for air defense, deep strikes, reconnaissance, and maritime operations.



Key Features

1. Avionics and Technology:

2. Armaments:

- **Meteor:** Beyond Visual Range Air-to-Air Missile (BVRAAM).
- **MICA:** Multi-mission air-to-air missile system.
- **SCALP:** Long-range cruise missile for precision strikes.
- **EXOCET:** Anti-ship missile for naval operations.

3. Landing Capabilities:

- Compatible with **CATOBAR** (Catapult Assisted Take-Off Barrier Arrested Recovery) and **STOBAR** (Short Take-Off, Barrier Arrested Recovery) systems.

Comparison with Air Force Rafale

Aspect	Rafale-M	Air Force Rafale
Weight	Heavier, reinforced for naval use.	Lighter, optimized for air operations.
Radar Systems	Tuned for maritime applications.	Designed for aerial combat.
Landing Systems	Strengthened for carrier landings.	Conventional runway-based landings.

Sports**1. Syed Modi International Badminton 2024**

- **PV Sindhu:** Women's Singles Champion.
- **Lakshya Sen:** Men's Singles Champion.

District at a Glance

About West Karbi Anglong district

- West Karbi Anglong is a district in Assam, India.
- It was formed in 2016 by separating from the larger Karbi Anglong district.
- The district's administrative headquarters is located in Hamren.
- West Karbi Anglong is part of the Karbi Anglong Autonomous Council.
- The district is governed under the provisions of the Sixth Schedule of the Indian Constitution.

Geography of West Karbi Anglong district

The Karbi Anglong plateau is an extension of the Indian Plate (The Peninsular Block) in the state of Assam, India. This area receives maximum rainfall from the Southwest summer Monsoon from June through September.

Geographic area: 3035 sq.km

Density of populations: 97 persons per sq.km

District Boundaries:

North: Morigaon, Nagaon &Hojai District

West: Morigaon District

South: state of Meghalaya and DimaHasao district

East: Dima Hasao district

Rivers: The important rivers of this district are: The Myntriang river, Karbi Langpi river, Kopili river and Amreng river. Among these rivers, Hydroelectricity powerplants have been set up on the Myntriang and Karbi Langpi rivers.

Flora and fauna:

The district has hills and plains covered with dense tropical forests and has State Reserved Forests in Amreng, Rongkhang and Jakota. The district also has District Council Reserved Forests in Sarchim, Kolonga and Amreng 1st Edition and 2nd Edition.

Highest Mountain Peak:

Even though the district is dotted with hills, a few of which can be categorized into Mountain. Among them, the highest is the Laru Peak which is at about 1290 meters above sea level.

Population Pattern:

The population of the district is predominantly tribal. The major tribalethnic groups of this district are Karbis, Bodos, Dimasas, Tiwas, Khasis, Garos. Besides, many non-tribals also live together in this hill region.

History of West Karbi Anglong

- **Origin of the Name:**
- The name *West Karbi Anglong* reflects its creation as a portion carved from the western part of the Karbi Anglong district in 2016.
- **Cultural Significance:**
- *Karbi* is the name of the indigenous tribe that inhabits the region.
- *Anglong* is a word in the Karbi language that means "hill" or "mountain."
- **Literal Meaning:**
- The term *Karbi Anglong* translates to *Karbi Hills*, signifying the region's tribal and geographical identity.

Before British colonization, the hill tribes of Northeast India remained independent due to their isolated location, far from the settled kingdoms of the Brahmaputra valley.

- Based on the **Simon Commission's recommendations**, the hill areas (now Karbi Anglong, West Karbi Anglong, and Dima Hasao) were classified as "Partially Excluded Areas" under the Government of India Act, 1935.
- These areas were excluded from Assam's jurisdiction and administered directly by the Governor.
- The United **Mikir & North Cachar Hills district** was formed on 17 November 1951 under the Sixth Schedule of the Indian Constitution.
- On 2 February 1970, it was divided into Karbi Anglong and North Cachar Hills districts.

In **2016**, the Karbi Anglong district was split into two, with the Hamren Civil sub-division forming the new district of West Karbi Anglong.

Places of Interest

Hamren: Hamren is a hillside town and the headquarters of the West Karbi Anglong district.

Hamren is a town with the Kopili river passing through it. Towards the southern border are the hills of Meghalaya and the lake of Borapani.

Baithalangso is a village in the West Karbi Anglong district of Assam, India.

Dongkamukam is one of the most important towns in West Karbi Anglong. It provides facilities like good schools, colleges, jobs, etc. and is a place of tourist attraction.

Shikdamakha (Tiwa village) is a village in the West Karbi Anglong district of Assam state.

Palakhongor:

- A tourist destination located 6 km (3.7 mi) from the village.
- Offers a panoramic view of the scenic Umswai Valley.

Tiwa Monolith:

- Located on a small hill in Amsai Pinung, 2 km (1.2 mi) from Shikdamakha.

- Contains over 2000 rock monoliths, each consisting of two stone slabs (one base and one body).
- The Tiwas plant one monolith set every year to honor their ancestors.



Q. Locate the neighbouring country or countries and districts surrounding West Karbi Anglong district in the given map.