



KERALA STATE CIVIL SERVICE ACADEMY

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CARNATIC MUSIC

The Supreme Court in an interim order said that musician T M Krishna should not be recognised as a recipient of the Sangita Kalanidhi M S Subbulakshmi award and also restrained him from projecting himself as a recipient of the honour till it decides an appeal challenging the grant of the same to him.

Background: -

- The top court's order came a day after Mr. Krishna was conferred the award instituted by The Hindu and awarded by the Music Academy at the inauguration of its 98th annual Conference and Concerts in Chennai.

About Carnatic music

- Carnatic music is a classical music tradition from Southern India, deeply rooted in the cultural and religious practices of the region.

Origins and History:

- Ancient Roots: Carnatic music has ancient origins, with influences from the Sama Veda, one of the four Vedas containing hymns set to music.
- Temple Traditions: Temples played a significant role in the development and preservation of Carnatic music, with musical performances being integral to temple rituals.
- Bhakti Movement: The Bhakti movement, which gained prominence between the 6th and 17th centuries, contributed to the development of devotional music.
- Medieval Composers: Composers like Purandaradasa (1480-1564) systematized Carnatic music methods and authored numerous compositions.
- The Trinity: The 18th century saw the emergence of the Trinity of Carnatic music – Thyagaraja, Shama Shastri, and MuthuswamiDikshitar – who compiled compositions that define the Carnatic music repertoire.

Key Concepts:

- Raga (Rāga): A melodic framework for improvisation and composition.
- Tala (Tāḷa): The rhythmic aspect of music, marked by mathematical precision.
- Bhava (Bhāva): The expression of emotions and thoughts through music.



Instruments:

- Vocal: The human voice is the primary instrument in Carnatic music.
- Melody Instruments: Violin, Veena, Nadaswaram, and Flute are commonly used.
- Percussion Instruments: Mridangam, Ghatam, Kanjira, and Thavil are essential for rhythm.

Performance Structure:

- Kriti (Kṛti): A structured composition that includes a pallavi (refrain), anupallavi (second verse), and charanam (final verse).

- RagamTanam Pallavi (RāgamTāṇamPāḷavi): A complex and highly improvisational section showcasing the performer’s skill.
- Thillana (Tillāṇa): A rhythmic piece that concludes the performance.

Hindustani Vs Carnatic Music	
Hindustani Music	Carnatic Music
	
<ul style="list-style-type: none"> ● Have influence of Arab, Persian and Afghan ● Scope provided to artists for variation and improvisation ● several sub-styles which lead to emergence of 'Gharanas ● 6 major ragas ● Instruments are equally important as vocals ● Main emphasis on Ragas ● Mainly associated with north india ● Major instrument used: Tabla, Sarangi, Sitar and Santoor 	<ul style="list-style-type: none"> ● Indeginous system of music ● Less scope of improvisation ● Only one particular prescribed style of singing ● 72 melakartas, ragas and janya ragas ● More emphasis given on vocal music ● Mainly based on Tala or Taal ● Mainly prevalent in south india ● Instruments used: Veena, Mrindangum and Mandolin

Notable Composers:

- Purandaradasa: Known as the father of Carnatic music.
- The Trinity: Thyagaraja, Shama Shastri, and MuthuswamiDikshitar.

KERCH STRAIT

Two Russian oil tankers have been badly damaged in the Black Sea, causing an oil spill. The incident took place in the Kerch Strait, which separates Russia from Crimea – the Ukrainian peninsula illegally annexed by Moscow in 2014.

Background:

- The Kerch Strait is a key route for exports of Russian grain and it is also used for exports of crude oil, fuel oil and liquefied natural gas.



- The Kerch Strait is a narrow waterway in Eastern Europe that connects the Black Sea with the Sea of Azov.
- Location: The strait separates the Kerch Peninsula of Crimea (part of the Russian-occupied Crimean Peninsula) to the west from the Taman Peninsula of Russia's Krasnodar Krai to the east.
- Dimensions: The strait is approximately 35 kilometers long and varies in width from 3.1 kilometers to 15 kilometers. The average depth of the strait is around 18 meters.

Historical Significance:

- Ancient Names: In ancient times, the strait was known as the Cimmerian Bosphorus or Cimmerian Strait, named after the Cimmerians, a group of steppe nomads.
- Roman Era: The Romans referred to it as the Strait of Cimmerian Bosphorus.
- World War II: The strait was a significant site during World War II, witnessing naval battles and strategic operations.

Modern Developments:

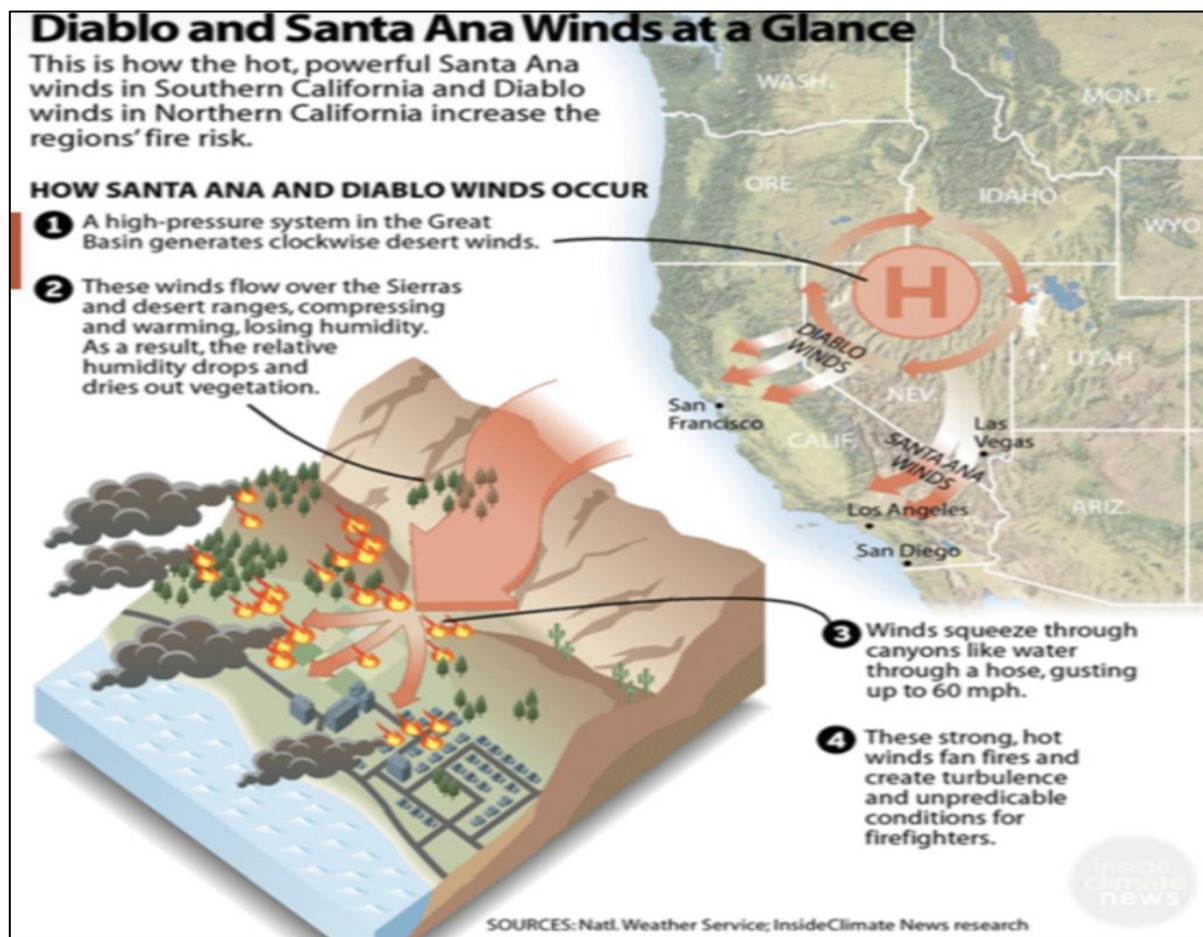
- Crimean Bridge: The Crimean Bridge, also known as the Kerch Strait Bridge, was completed in 2018. It is the longest bridge in Europe, spanning 19 kilometers (12 miles) and includes both road and rail connections.
- Conflict: The strait has been a point of conflict, especially after Russia's annexation of Crimea in 2014. The Kerch Strait incident in 2018 saw a naval confrontation between Russia and Ukraine.

SANTA ANA WINDS

Fire crews continue to battle a wildfire in the wealthy coastal town of Malibu, California. Although the cause of the fire is yet to be determined, experts suggest that the fire has been destructive because of two reasons, the “Santa Ana” winds and climate change.

Background: -

- The wildfire has charred more than 4,000 acres and affected about 22,000 people.



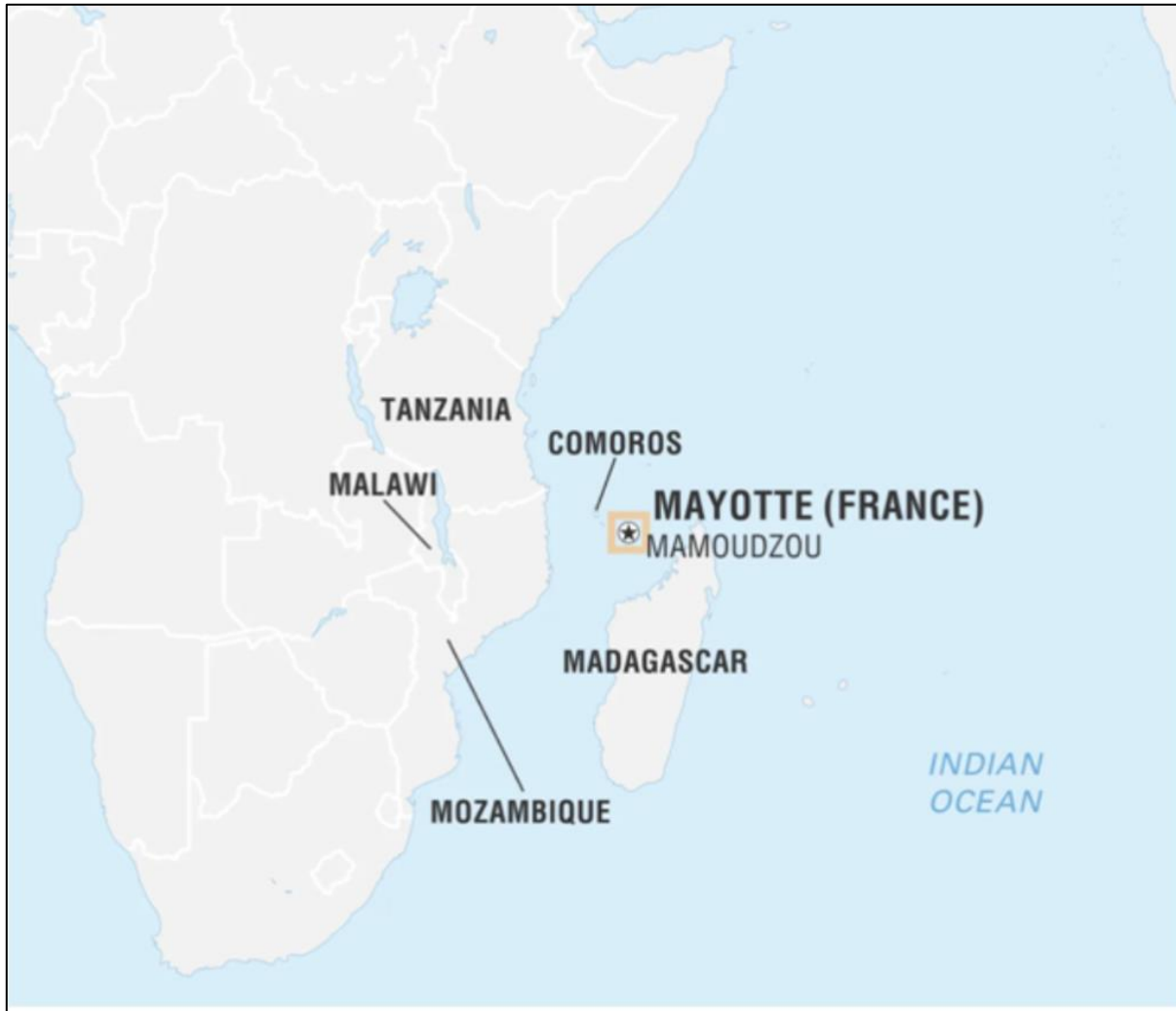
- Santa Ana winds blow when high pressure builds over the Great Basin – the area between the Rocky Mountains and Sierra Nevada (a mountain range in the Western United States) – and the pressure is low over California's coast.
- The difference in pressure triggers the movement of powerful winds from the Basin's inland deserts, east and north of Southern California, over the mountains toward the Pacific Ocean.
- As the wind comes down the mountains, it compresses and heats up.
- The wind's humidity also drops, sometimes to less than 20% or even less than 10%. The extremely low moisture turns vegetation dry, making it ready to burn. This process helped fuel the flames in Malibu.
- Santa Ana winds usually occur from October to January.

MAYOTTE

Rescuers raced against time to reach survivors and supply urgent aid after the devastating cyclone Chido ripped through the French Indian Ocean territory of Mayotte.

Background: -

- Mayotte is France's poorest region with an estimated third of the population living in shanty towns.



- Mayotte is an overseas department and region and single territorial collectivity of France.
- It is located in the northern part of the Mozambique Channel in the Indian Ocean off the coast of Southeastern Africa, between Northwestern Madagascar and Northeastern Mozambique.
- Mayotte consists of a main island, Grande-Terre (or Maore), a smaller island, Petite-Terre (or Pamanzi), as well as several islets around these two.
- It is an outermost region of the European Union and, as an overseas department of France, part of the eurozone.
- Mayotte is the oldest of the four large islands of the Comoros archipelago (The Comoro Islands are a group of volcanic islands in the Mozambique Channel).

OLIVE RIDLEY TURTLES

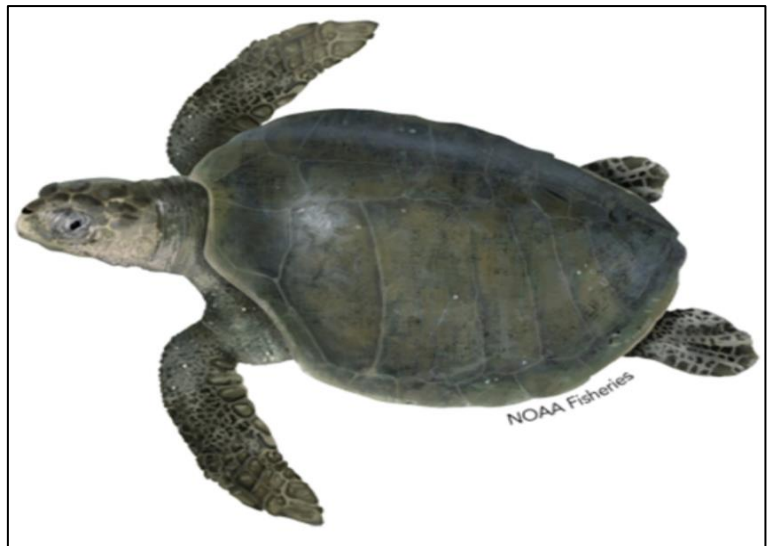
Carcasses of Olive Ridley turtles, which are currently in their breeding season, continue to wash ashore along the Visakhapatnam coast.

Background:

- Environmental experts say that a majority of the deaths are due to marine pollution and trawling activities for catching fish.

Key takeaways:

- The Olive Ridley Turtle (scientific name: *Lepidochelys olivacea*) is the smallest and most abundant sea turtle species in the world.
- Size: Olive Ridley turtles grow to about 2 feet in length and weigh around 50 kg.
- Habitat: They inhabit warm and tropical waters of the Pacific, Atlantic, and Indian Oceans.
- Appearance: They get their name from their olive-colored carapace (shell), which is heart-shaped and rounded.
- Carnivorous: Olive Ridley turtles are carnivores, feeding mainly on jellyfish, shrimp, snails, crabs, mollusks, and various fish and their eggs.



Unique Behavior:

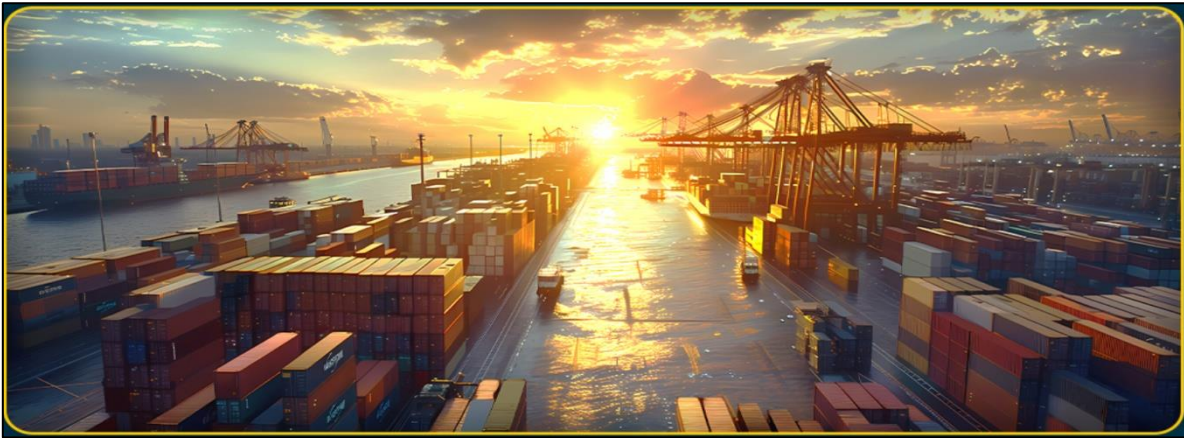
- Arribada: Olive Ridley turtles are best known for their unique mass nesting behavior called arribada, where thousands of females come together on the same beach to lay eggs.
- Nesting Sites: The coast of Orissa in India is the largest mass nesting site for Olive Ridley turtles, followed by the coasts of Mexico and Costa Rica.
- Major nesting sites in India include:
 - Odisha: Gahirmatha Beach, Rushikulya River mouth, and Devi River mouth.
 - Andhra Pradesh, Tamil Nadu, and the Andaman and Nicobar Islands.

Life Cycle:

- Egg Laying: Females lay eggs in conical nests about 1.5 feet deep, which they dig with their hind flippers.
- Hatching: After about 45-65 days, the eggs hatch, and the hatchlings make their way to the ocean.
- Survival Rate: Only about 1 in 1,000 hatchlings survive to adulthood.
- Conservation Status : The Olive Ridley turtle is listed as Vulnerable on the IUCN Red List due to threats like habitat loss, pollution, and poaching.

JALVAHAK SCHEME

The Centre on Sunday launched the Jalvahak scheme to boost long-haul cargo movement via inland waterways.



Background: -

- India has an extensive inland waterway network spanning 20,236 km, but its freight transport potential remains under-utilised compared to countries like the US and China.

About Jalvahak scheme

- The Jalvahak Scheme is an initiative by the Indian government aimed at boosting cargo movement via inland waterways.
- Launch Date: Unveiled on December 15, 2024.
- The scheme will remain valid for three years and is designed to optimise supply chains for major shipping companies, freight forwarders, and trade bodies.
- Objective: To promote sustainable and cost-effective transportation across National Waterways 1 (Ganga), 2 (Brahmaputra), and 16 (Barak river).
- Implementation: Jointly implemented by the Inland Waterways Authority of India (IWAI) and Inland & Coastal Shipping Ltd (ICSL), a subsidiary of the Shipping Corporation of India.

MINERAL DIPLOMACY

As India seeks to expand its manufacturing and technological capability, critical minerals will become vital to fulfil this ambition.

Background:

- India is a major critical mineral importer, still depends on other countries, primarily China, for its mineral security, which has become a cause of strategic concern.

Key takeaways

- To address India's mineral security challenge, New Delhi has started an attempt to engage in mineral diplomacy. This attempt is based on the pillars of: developing international engagement with mineral-producing countries, and establishing strategic partnerships with intergovernmental organisations.

- The first pillar focuses on building bilateral ties with resource-rich countries such as Australia, Argentina, the United States, Russia, and Kazakhstan to secure the supply.
- To facilitate, India established the KhanijBidesh India Ltd. (KABIL), a joint venture company with a mandate to ensure a consistent supply of critical and strategic minerals to the Indian domestic market.
- In March 2022, KABIL signed a Memorandum of understanding with Australia for a critical mineral investment partnership, identifying two lithium and three cobalt projects.
- Latin America's Lithium Triangle, which constitutes Argentina, Chile, and Bolivia, has attracted India. India signed a \$24 million lithium exploration pact with a state-owned enterprise in Argentina for five lithium brine blocks. KABIL is actively working to secure mineral supplies by facilitating the buying of assets from Bolivia and Chile.
- Central Asia has also caught India's attention. India and Kazakhstan formed a joint venture, IREUK Titanium Limited, to produce titanium slag in India.
- The second pillar of mineral diplomacy is forging and strengthening partnerships with minilateral and multilateral initiatives related to mineral security, such as the Quad, the Indo-Pacific Economic Framework for Prosperity (IPEF), Mineral Security Partnership (MSP) and the G-7, for cooperation in supply chain.

The missing pieces

- India's mineral diplomacy still lacks three essential ingredients. These are: a lack of private sector participation; weak diplomatic capacity, and insufficient sustainable partnership.
- India's private sector has largely been missing from the equation. The absence of a critical mineral supply chain strategy and a clear road map for the private sector are two primary variables responsible for their absenteeism.
- Second, India must strengthen its mineral diplomacy engagement. Having a dedicated mineral diplomacy division within the Ministry of External Affairs, similar to the New and Emerging Strategic Technologies (NEST) division and a special position for mineral diplomacy in selected diplomatic missions can be a step.
- Third, Delhi must forge strategic, sustainable, and trusted partnerships with bilateral partners and multilateral forums. Among all its partners, working with EU, South Korea, and the other Quad members is critical to India's mineral security due to its domestic capabilities, diplomatic network and technological know-how.

PM SURYA GHAR MUFT BIJILI YOJANA

Around 1.45 crore registrations have been made under the PM Surya GharMuft Bijli Yojana, and 6.34 lakh installations have been completed, Parliament was informed recently.

About PM Surya GharMuft Bijli Yojana:

- It is a government scheme launched on February 15, 2024, that aims to **provide free electricity to households in India.**
- Under the scheme, **households will be provided with a subsidy to install solar panels** on their roofs.
- The subsidy will **cover up to 40% of the cost** of the solar panels.

- It would **help one crore families get up to 300 units of free electricity per month** with savings of up to Rs 18,000 annually.
- It is estimated that the scheme will save the government Rs. 75,000 crore per year in electricity costs.
- The scheme has an **outlay of Rs 75,021 crore** and is to be implemented **till FY 2026-27**.



- The **benefits** of the scheme include:
 - Free electricity for households.
 - Reduced electricity costs for the government.
 - Increased use of renewable energy.
 - Reduced carbon emissions.
- **Eligibility:**
 - The household must be an **Indian citizen**.
 - The household **must own a house with a roof that is suitable for installing solar panels**.
 - The household **must have a valid electricity connection**.
 - The household **must not have availed any other subsidy** for solar panels.

- Under the scheme, **DISCOMs** are designated as **State Implementation Agencies (SIAs)** responsible for facilitating various measures, including net meter availability, timely inspection, and commissioning of installations.
 - **DISCOMs will receive incentives** based on their achievement in the installation of additional grid-connected rooftop solar capacity beyond a baseline level.
 - The total financial outlay for the 'Incentives to DISCOMs' component is Rs 4,950 crore.

GYMPIE GYMPIE

The Gympie-Gympie, scientifically known as *Dendrocnidemoroides*, is considered the most toxic plant globally. Native to Australia, it has gained notoriety due to its excruciating sting, which can induce unbearable pain and distress.

This pain can last for weeks or even months, leading some individuals to contemplate extreme measures.



Description and Characteristics

The Gympie-Gympie can grow up to 10 meters tall and features fine, needle-like hairs that are responsible for its painful sting.

These hairs, known as trichomes, are found on all parts of the plant, including stems, leaves, and fruits. The sting feels akin to both electrocution and burning, creating an intense and lasting discomfort.

Pain and Effects

Touching the Gympie-Gympie results in pain that can persist for an extended period. Reports indicate that the toxins from the plant can remain in the skin for up to a year.

Symptoms may worsen with exposure to water, temperature changes, or further contact, compounding the pain and difficulty of recovery.

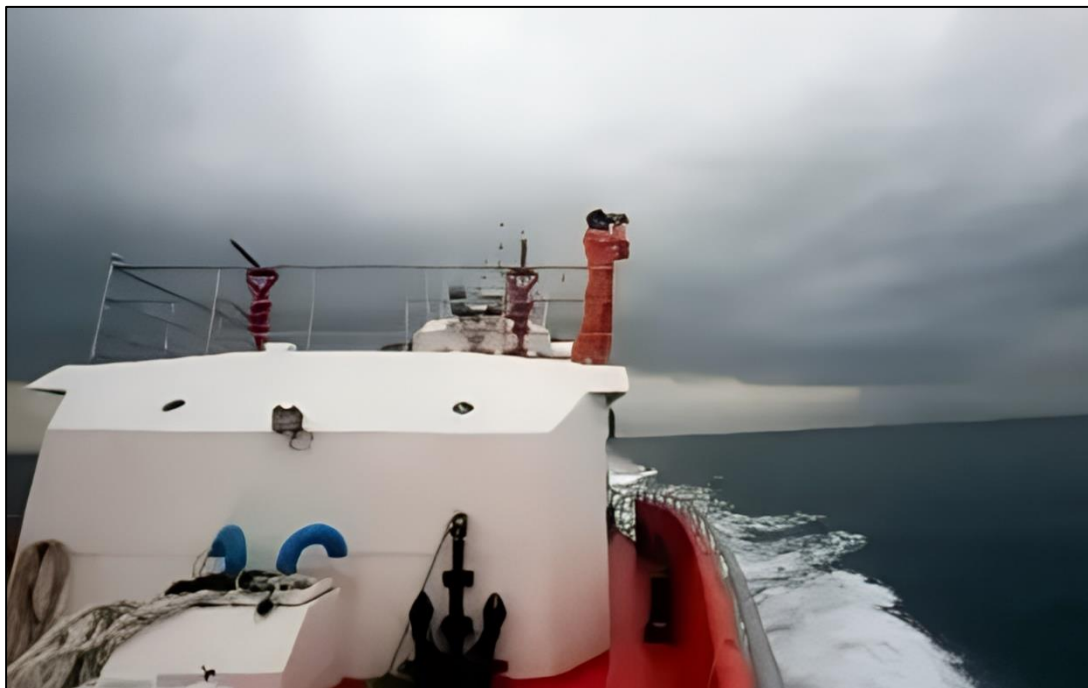
SARAT -2

The Indian National Centre for Ocean Information Services (INCOIS) has recently upgraded its Search and Rescue Aid Tool (SARAT), which aims to enhance the effectiveness of sea rescue operations conducted by Indian agencies, including the Coast Guard.

The tool now offers improved functionality to predict the possible locations of missing objects or individuals.

Background of SARAT

SARAT was first introduced in 2016 and has since been instrumental in aiding the Coast Guard. Based on user feedback, INCOIS has refined the tool to better serve its purpose. The upgraded version, SARAT 2, incorporates advanced features that optimize search operations.



How SARAT Works

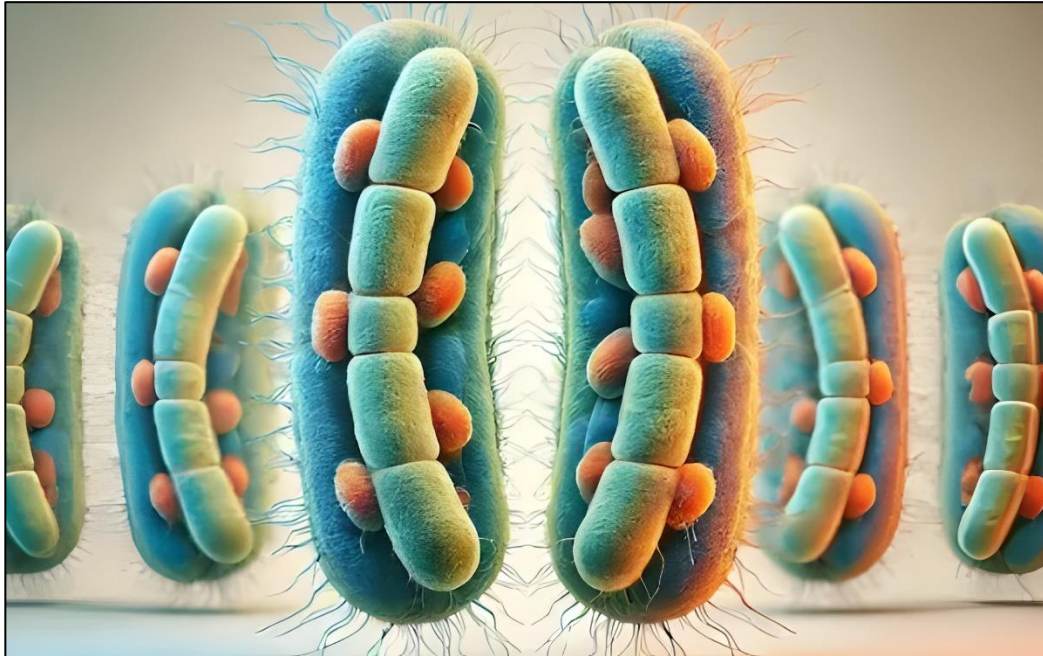
The tool begins searches from the last known position of a missing object. It accounts for various environmental factors, such as winds, currents, and waves, which influence the drift of objects at sea. The drift patterns vary based on the object's size, shape, and buoyancy.

Features of SARAT Version 2

SARAT 2 includes enhanced visuals and colour-coded search regions. These improvements allow rescue teams to identify high-probability areas quickly. Users can also access markers that indicate specific locations, making it easier to locate missing persons or objects.

MIRROR BACTERIA

A group of 38 scientists working in nine countries has sounded an alarm about the potential creation of mirror bacteria – synthetic organisms in which the molecular structure found in nature is reversed and could put humans, animals and plants at risk of exposure to dangerous pathogens.



- While the science and technology necessary to create mirror bacteria in a laboratory is a decade or more away, the scientists argued that the possibly lethal risks posed by this new field of research are “unprecedented” and “overlooked.”
- “Driven by curiosity and plausible applications, some researchers had begun work toward creating lifeforms composed entirely of mirror-image biological molecules,” the researchers wrote in a report published December 12 by the journal *Science*.
- “Such mirror organisms would constitute a radical departure from known life, and their creation warrants careful consideration.”
- A fundamental feature of all known life is a uniform chirality, or handedness. For example, DNA and RNA are made from “right-handed” nucleotides, and proteins are made from “left-handed” amino acids. Just as a right-handed glove cannot fit a left hand, interactions between molecules often depend on chirality.
- While the authors, who included experts in immunology, plant pathology, ecology, evolutionary biology, biosecurity and planetary sciences, had initially been skeptical that mirror bacteria could pose major risks, the experts said they had now become “deeply concerned.”

KISAN KARACHI

The KisanKavach, India's pioneering anti-pesticide bodysuit, was recently revealed by Union Minister Dr. Jitendra Singh, and aims to protect farmers from the adverse effects of pesticides. The launch aligns with Prime Minister Narendra Modi's commitment to integrating science and technology into agriculture.

Development and Purpose

The KisanKavach was developed by BRIC-inStem in Bangalore, in collaboration with Sepio Health Pvt. Ltd. It addresses health risks faced by farmers, including respiratory issues and vision impairment. This bodysuit represents a major advancement in agricultural safety.

The bodysuit's fabric undergoes a unique process that attaches a nucleophile to cotton. This innovation allows the fabric to deactivate pesticides upon contact. Detailed findings were published in the journal Nature Communications, denoting the scientific breakthrough.

The KisanKavach is a washable and reusable suit priced at ₹4,000. It has a lifespan of up to one year. The suit employs advanced fabric technology that neutralizes harmful pesticides on contact, enhancing safety for agricultural workers.

Dr. Jitendra Singh commended the Department of Biotechnology And BRIC-inStem for their contributions to this project.

The Modi administration is dedicated to encouraging scientific innovation in agriculture. Initiatives like KisanKavach and the BioE3 biomanufacturing programme are part of this vision.



SWITZERLAND SUSPENDS MFN STATUS TO INDIA

What is MFN Status?

- **About: MFN** refers to a **trade status** granted by one country to another, ensuring **non-discriminatory trade** between them.
 - It does not mean **preferential treatment**, but guarantees that the recipient country will not face disadvantages compared to other trade partners of the granting country.
- **MFN and WTO:** MFN is a key principle of **World Trade Organization (WTO) rules**.
 - Under WTO rules, if a country grants special status to one trade partner, this status **must be extended to all WTO members**.

- **Non-Discriminatory Trade:** MFN ensures that countries treat each other equally by offering the **same trade conditions** including:
 - **Lowest possible trade tariffs** and trade barriers.
 - **Highest import quotas**
 - Increased market access
 - Improved conditions for the flow of goods
- **Exceptions to MFN:**
 - **Free Trade Agreements (FTAs):** Countries in a FTA offer **special concessions** to each other, excluding non-members.
 - **Regional Trade Agreements (RTAs):** Member countries negotiate **better terms** among themselves, often excluding non-members.
- Switzerland has decided to **rescind its unilateral application of the most-favoured-nation (MFN) clause** in its **Double Tax Avoidance Agreement (DTAA)** with India.
 - Switzerland will revert to the earlier **withholding tax rate** of **10%** on Indian entities starting **1st January 2025**.

What are Key Facts Regarding MFN Clause in DTAA?

- **DTAA between India and Switzerland: DTC IN-CH (India-Switzerland Direct Tax Convention)** was signed on **2nd November 1994**, to avoid double taxation on income between India and Switzerland. It was revised in **2000** and **2010**.
 - **Article 11** of the **2010 protocol** contains the **MFN clause**, which forms the basis for **withdrawal of the MFN status by Switzerland under DTAA**.
- **MFN Clause in Protocol:** The MFN clause ensures that **lower tax rates** offered by India to any **third-country Organisation for Economic Cooperation and Development (OECD) member** automatically apply to Switzerland as agreed upon after the 2010 protocol.
 - The MFN clause aimed to maintain **parity** in taxation rates.
- **Reason for Switzerland's MFN Withdrawal:** After the 2010 protocol, India signed DTAA with two OECD members i.e., **Lithuania** (5% tax rate on dividends) and **Colombia** (5% general tax rate on dividends).
 - However, the same **concessional tax rate was not extended to Switzerland**.
 - Following the Indian Supreme Court's ruling in 2023, Switzerland acknowledged the **lack of reciprocity** in its MFN clause interpretation and decided to revert to the earlier **10% withholding tax rate** starting 1st January 2025.

- **India's Response:** India claimed that the MFN clause **does not apply automatically** unless officially **notified** under **Section 90 of the Income Tax Act, 1961**.
 - It further argued that the clause applies only to countries that were **OECD members at the time of signing** the 2010 protocol.
 - In October 2023, India's Supreme Court ruled that **Lithuania and Colombia** joining the **OECD after 2010** does not trigger the MFN clause, so India need not lower its dividend tax rates to 5%.
 - **Lithuania and Colombia** joined the OECD in **2018 and 2020** respectively.
- **Future Taxation under DTAA:** From 1st January 2025, the withholding tax rate will be 10% as the MFN clause no longer applies. 5% tax rate valid for the period **2018-2024**.
- **Impact on Investments and Trade:** Switzerland clarified that this decision will not affect the **free trade agreement** between India and Switzerland or Swiss investments in India.
 - **India and EFTA** have signed the **Trade and Economic Partnership Agreement (TEPA)** in 2024 under which India will receive **USD 100 billion as foreign direct investment (FDI) in 15 years**.
 - **EFTA (European Free Trade Association)** consists of Iceland, Switzerland, Norway, and Liechtenstein.
 - What can be the Impact of Suspension of MFN Status with India?
- **Increased Tax Liabilities:** Indian businesses operating in Switzerland may face **higher tax liabilities** as withholding tax on dividends from Switzerland will rise to **10% from 5%**.
 - **Withholding Tax (retention tax)** is an obligation on the individual (either resident or non-resident) to **withhold or deduct tax** when making payments e.g., in the form of **dividends, interest, and royalties**.
- **Cross-Border Tax Disputes:** The suspension could lead to **disputes** between India and Switzerland regarding the **interpretation of the treaty provisions**.
- **Protectionism in Taxation:** Switzerland's move reflects a **broader trend** of countries, including India, adopting **stricter tax treaty interpretations** to protect domestic revenues.
 - This decision could be seen as part of a global shift where countries are adopting more **protectionist policies** to safeguard their **tax bases**.
- **Evolving International Tax Norms:** The decision may push other countries to follow **uniformity** in tax treaty negotiations, ensuring that all parties align on **essential clauses** like MFN.

WHAT IS A DOUBLE TAX AVOIDANCE AGREEMENT (DTAA)?

- **About:** DTAA is a **bilateral or multilateral agreement** between two or more countries aimed at **avoiding double taxation** of the same income.
 - It ensures that income is not taxed by both the country of **residence** and the country of **source**.
- **Objectives of DTAA:**
 - **Double Taxation Avoidance:** Prevents paying taxes twice on the same income.
 - **Fiscal Evasion Prevention:** Enables information sharing to **combat tax evasion**.
 - **International Trade Encouragement:** Promotes **cross-border business** with clear tax rules and reduced liabilities.
- **Mechanisms of DTAA:**
 - **Residency and Source-based Taxation:** DTAA defines tax rights for both residence and source countries.
 - **Credit Method:** Tax paid in the source country is credited in the residence country.
 - **Exemption Method:** Income is taxed in one country and may be exempt in the other.
- **India's DTAA:** India has one of the largest networks of DTAA's consisting of **over 94 comprehensive DTAA's and eight limited DTAA's**

NATIONAL MISSION ON NATURAL FARMING (NMNF) TO PROMOTE NATURAL FARMING.

Background: -

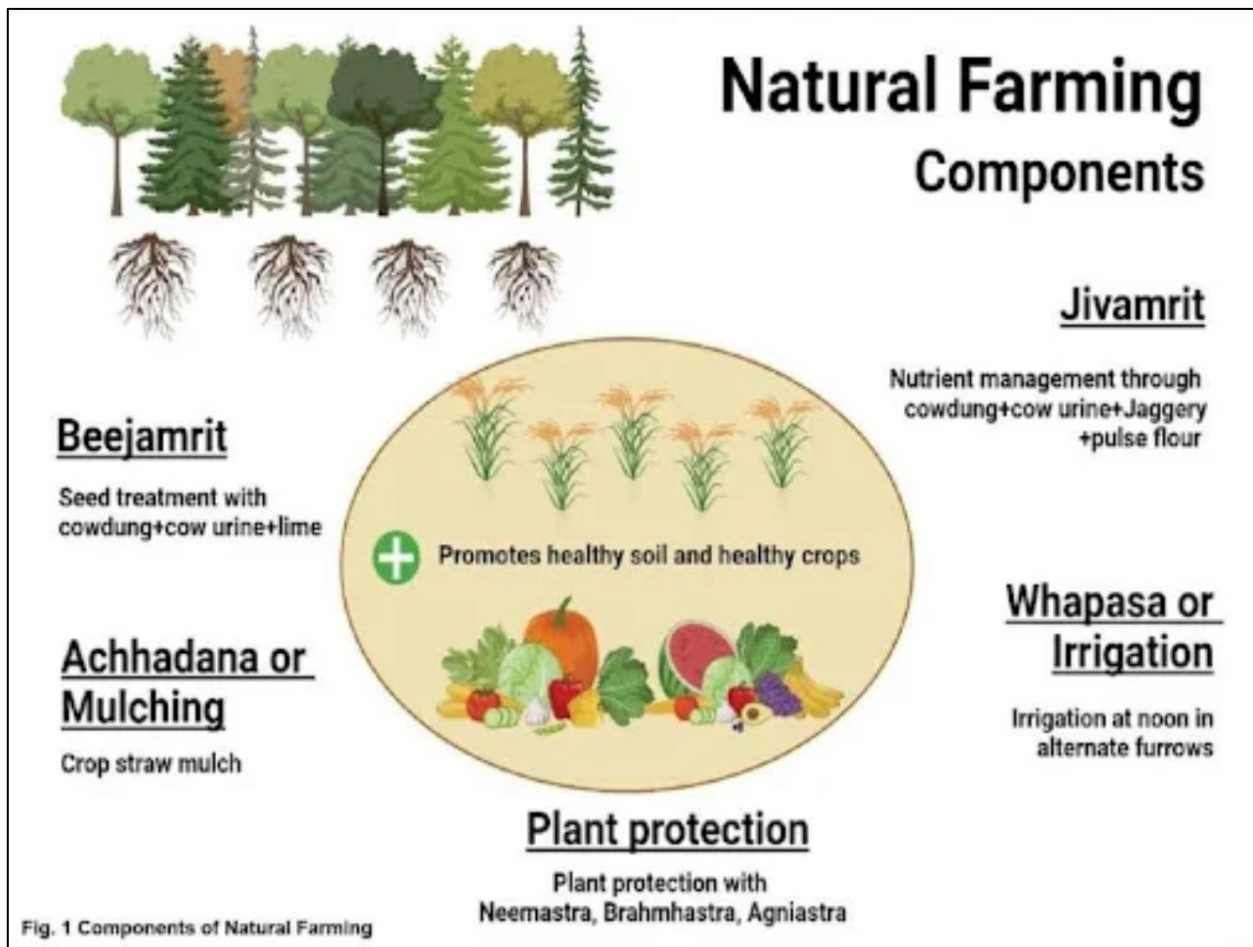
- The mission, with a budget outlay of Rs 2,481 crore, will cover 1 crore farmers across the country.

About National Mission on Natural Farming (NMNF)

- NMNF will be a standalone Centrally Sponsored Scheme under the Ministry of Agriculture & Farmers' Welfare.

Objectives:

- Promote Chemical-Free Farming: Encourage farmers to adopt natural farming methods that eliminate the use of synthetic fertilizers and pesticides.
- Enhance Soil Health: Improve soil health and fertility through organic practices like the use of cow dung, cow urine, and other natural inputs.
- Support Biodiversity: Foster biodiversity by promoting diversified cropping systems and integrated farming practices.
- Climate Resilience: Build resilience to climate risks such as droughts and floods by enhancing soil carbon content and water retention.



Key Components of NMNF

- Diversified Multi-Cropping Systems: Natural Farming encourages the adoption of multiple crops grown simultaneously to improve soil biodiversity and reduce pest outbreaks.
- Desi Cow-Based Inputs: Inputs derived from indigenous cows, such as cow dung and urine, form the backbone of Natural Farming. These are used to prepare nutrient-rich formulations like Jeevamrit and Beejamrit for soil and plant health.
- Bio-Input Resource Centres (BRCs): To ensure farmers have access to Natural Farming inputs, the government plans to establish 10,000 BRCs, providing ready-to-use formulations and resources.
- Capacity Building and Demonstration Farms: Around 2,000 model demonstration farms will be established across India, supported by Krishi Vigyan Kendras (KVKs), agricultural universities, and trained Farmer Master Trainers. These will serve as hubs for hands-on training.

'COMPENDIUM OF REGENERATIVE AGRICULTURE'

The Government of Odisha, in partnership with ICRISAT, launched a 'Compendium of Regenerative Agriculture' to promote regenerative agriculture.

Background: -

- The compendium outlines five key principles for sustainable farming: minimising soil disturbance, maximising crop diversity, maintaining soil cover, keeping living roots year-round, and integrating livestock.

Key takeaways

- Regenerative agriculture is a holistic approach to farming that focuses on restoring and enhancing the health of ecosystems.

Core Principles:

- **Soil Health:** The primary focus is on improving soil health through practices like minimal soil disturbance (no-till farming), cover cropping, and crop rotation.
- **Biodiversity:** Enhancing biodiversity by integrating a variety of crops livestock, which helps in pest control and nutrient cycling.
- **Water Management:** Improving water retention and reducing runoff through practices like mulching and agroforestry.
- **Carbon Sequestration:** Increasing carbon sequestration in the soil to mitigate climate change by capturing atmospheric CO₂.

Practices:

- **Cover Cropping:** Planting cover crops to protect and enrich the soil during times when main crops are not growing.
- **Composting:** Adding organic matter to the soil through composting to improve soil structure and fertility.
- **Agroforestry:** Integrating trees and shrubs into agricultural systems to enhance biodiversity and provide additional income sources.
- **Holistic Management:** Managing farms as integrated ecosystems, considering the interrelationships between soil, plants, animals, and humans.



Benefits:

- **Improved Soil Health:** Healthy soil supports better crop yields, reduces the need for chemical inputs, and enhances resilience to extreme weather.
- **Enhanced Biodiversity:** Diverse ecosystems are more resilient and productive, providing habitat for beneficial insects and wildlife.
- **Climate Mitigation:** By sequestering carbon, regenerative agriculture helps reduce greenhouse gas emissions and combat climate change.
- **Economic Viability:** Farmers can reduce input costs and improve profitability through sustainable practices.

AEPS

The Aadhaar Enabled Payment System (AEPS) is transforming banking access in rural and semi-urban regions. It utilizes Aadhaar numbers and biometric authentication for seamless transactions. This system promotes financial inclusion for underserved populations.

What is AEPS?

AEPS stands for Aadhaar Enabled Payment System, which allows users to perform banking tasks using their Aadhaar number and biometric data. Transactions include cash withdrawals, deposits, balance checks, and money transfers.

How Does AEPS Work?

AEPS connects directly to the National Payments Corporation of India (NPCI) network. Users authenticate transactions with their biometric information, such as fingerprints or iris scans. This eliminates the need for traditional banking infrastructure like ATMs or branches.



Benefits for Rural Users

Visiting bank branches can be difficult for people in rural areas. AEPS enables access to banking services at local merchants or agents. This convenience reduces travel costs and time, allowing users to complete transactions near their homes.

AEPS targets underbanked populations with limited access to banking. It brings services directly to local communities, ensuring everyone can access financial services. Secure Aadhaar-to-Aadhaar transfers enhance money transfer efficiency.

Time and Cost Savings

Before AEPS, users faced long journeys to distant bank branches for simple transactions. AEPS allows them to conduct banking activities locally, saving both time and money. Users can withdraw cash, deposit money, or check balances without travelling far.

Empowering Local Merchants

Local merchants and agents play important role in AEPS. They can provide banking services without expensive infrastructure. This creates a network of accessible banking points in communities, enhancing service availability.

AEPS (Aadhaar Enabled Payment System) and UPI (Unified Payments Interface) are digital payment systems in India, but they differ in functionality, infrastructure, and use cases.

Key Differences

Aspect	AEPS	UPI
Definition	A bank-led system enabling basic banking transactions using Aadhaar.	A mobile-based platform for instant money transfers via UPI ID.
Authentication	Requires Aadhaar number and biometric verification.	Uses mobile number, UPI PIN, and sometimes device authentication.
Key Requirements	Aadhaar-linked bank account, biometric device, and Aadhaar number.	Bank account, UPI-enabled app, mobile number, and UPI PIN.
Use Cases	Cash withdrawals, deposits, and balance checks in rural or low-access areas.	Instant peer-to-peer or merchant payments, bill payments, etc.
Technology Base	Operates via Aadhaar-linked Micro ATMs.	Operates via mobile apps like Google Pay, PhonePe, BHIM, etc.
Access Point	Banking correspondents, micro-ATMs, or retail outlets.	Smartphones with internet access.
Target Audience	Rural or underserved populations with limited smartphone access.	Urban and tech-savvy users with smartphones.
Transaction Limit	Lower limits, often used for small-value transactions.	Higher limits (up to ₹1 lakh per day).

ACTION AGAINST GENDER BASED VIOLENCE

Shri Shivraj Singh Chouhan recently launched the third edition of *Nayi Chetna-PahalBadlaav Ki* in New Delhi. This campaign addresses gender-based violence in India, which aims to empower women and enhance their dignity. The initiative marks the government's commitment to women's economic and social development.

New Gender Resource Centres Established

A total of 227 Gender Resource Centres (GRCs) have been inaugurated across 13 states. These centers provide safe spaces for survivors of gender-based violence.

They offer information, reporting assistance, and legal support. The GRCs are designed to empower survivors and encourage them to share their experiences.

Introduction of Abkoibahananahi Campaign

Smt. Annapurna Devi introduced the Abkoibahananahi campaign, which calls for collective action against gender-based violence. It marks the role of 10 crore Self-Help Group (SHG) women.

The campaign promotes 49 government schemes aimed at achieving gender equality, which include 24/7 helplines and One-Stop Centres.

Campaign Message and Duration

The campaign's slogan is *EkSaathEkAwaazHinsaKeKhilaf*, which encourages collective efforts to create safe, inclusive spaces. The month-long campaign will run until December 23, 2024. It aims to raise awareness and support survivors effectively.

Inter-Ministerial Advisory and Coordination

An inter-ministerial advisory has been signed by eight government departments. This includes ministries like Women and Child Development and Home Affairs. The advisory aims to coordinate efforts across various sectors.

Inspiring Stories of Gender Champions

- Gender champions from Jharkhand, Puducherry, and Madhya Pradesh shared their transformative journeys. These individuals transitioned from victims to leaders. Their stories inspire others to take action against gender-based violence.
- The launch event gathered government officials, SHG women, and civil society representatives. This collective presence puts stress on a shared commitment to ending gender-based violence.



On November 25, a campaign titled “Ab Koi BahanaNahi” will be launched, which aims to combat gender-based violence across India. It is a collaborative effort by the Ministries of Women and Child Development and Rural Development, with support from UN Women. The launch took place at Rang Bhawan, All India Radio, in New Delhi.

Campaign Objectives

The campaign’s primary objective is to mobilize public action against gender-based violence, which encourages individuals, government bodies, and organizations to take concrete steps toward this goal. The initiative seeks to raise awareness and promote accountability among citizens.

16 Days of Activism

From November 25 to December 10, the world will observe 16 days of activism against gender-based violence. This period begins on the International Day for the Elimination of Violence against Women, which culminates on Human Rights Day. The campaign aligns with the United Nations’ “No Excuse” initiative, which addresses the growing issue of violence against women.

ONE NATION ONE SUBSCRIPTION

The Union Cabinet approved a budgetary allocation of Rs 6,000 crore for an initiative called ‘One Nation One Subscription’ (ONOS).

Background: -

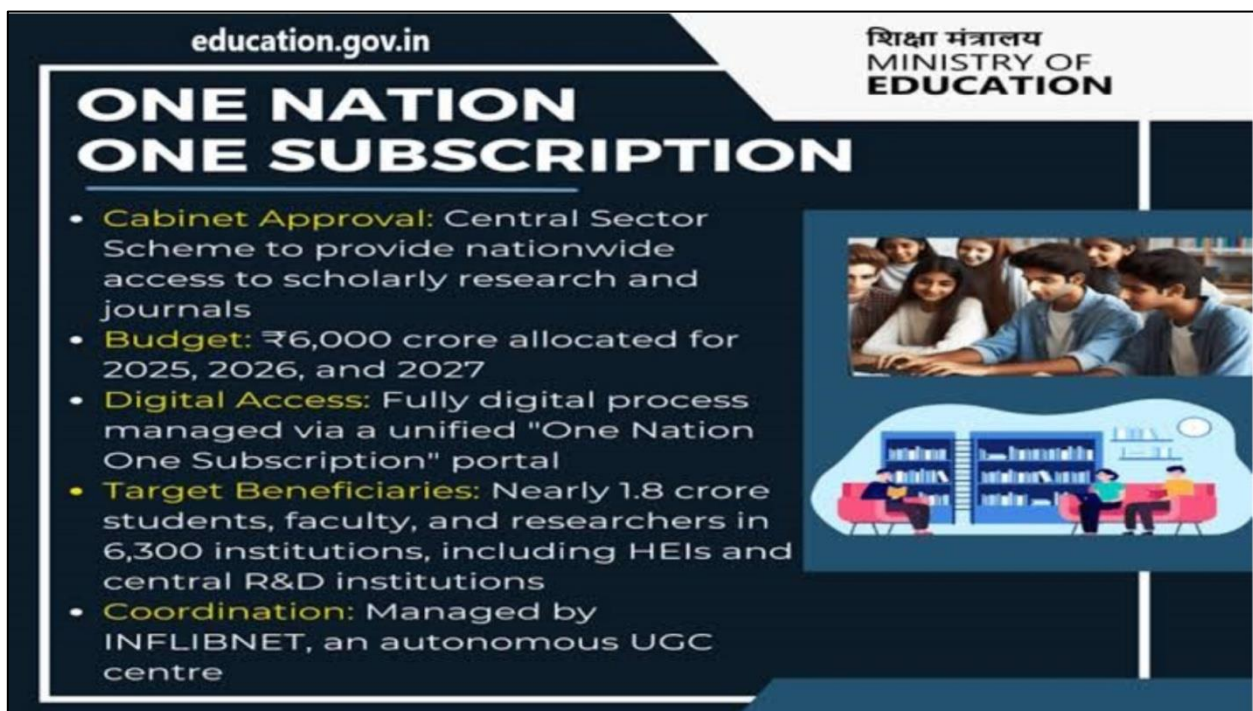
- Aiming to centralise journal subscriptions for nearly 6,300 government-run institutions, ONOS seeks to provide equitable access to 13,000 scholarly journals under a single platform.

Current system

- Higher education institutions (HEIs) can access journals through 10 different library consortia.
- A library consortium is a group of two or more libraries that have agreed to cooperate to fulfil certain similar needs, usually resource sharing.
- For instance, INFLIBNET Centre (Information and Library Network Centre) in Gandhinagar is an Inter-University Centre of the University Grants Commission which oversees the UGC-Infonet Digital Library Consortium, providing access to selected scholarly electronic journals and databases in different disciplines.
- Apart from this, HEIs also subscribe to several journals individually.

What does the ONOS scheme offer?

- Through the ONOS scheme, the Centre aims to consolidate the disaggregated approach to journal access. ONOS will enable state and central government HEIs to access thousands of journals on one platform, which will be active from January 1, 2025.
- This common platform will host 13,000 journals published by 30 international publishers. All institutions will only need to register on the platform to access these journals.



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**शिक्षा मंत्रालय
MINISTRY OF
EDUCATION**

ONE NATION ONE SUBSCRIPTION

- **Cabinet Approval:** Central Sector Scheme to provide nationwide access to scholarly research and journals
- **Budget:** ₹6,000 crore allocated for 2025, 2026, and 2027
- **Digital Access:** Fully digital process managed via a unified "One Nation One Subscription" portal
- **Target Beneficiaries:** Nearly 1.8 crore students, faculty, and researchers in 6,300 institutions, including HEIs and central R&D institutions
- **Coordination:** Managed by INFLIBNET, an autonomous UGC centre

- INFLIBNET has been designated as the implementing agency for this initiative. The central government negotiated one subscription price for each of the 30 different publishers and approved Rs 6,000 crore for three calendar years – 2025, 2026 and 2027.

What is the need for ONOS?

- First, it would expand access to the best scholarly journals for 55 lakh to nearly 1.8 crore students, faculty, and researchers across roughly 6,300 government universities, colleges, research bodies, and Institutions of National Importance (INIs), including those in Tier 2 and Tier 3 cities.
- Second, it would avoid duplication of journal subscriptions across different library consortia and individual higher education institutions and hence reduce excess expenditure.
- Third, a single subscription for all central and state government HEIs would provide better bargaining power when negotiating with publishers.
- Fourth, the Centre will gain insights into the extent to which journals are being accessed and downloaded by higher education ecosystem.
- This will not only help in long-term planning but also allow to encourage inactive institutions to fully utilise the platform and promote its benefits among their teachers, students, and researchers.

MINDFULNESS CITY

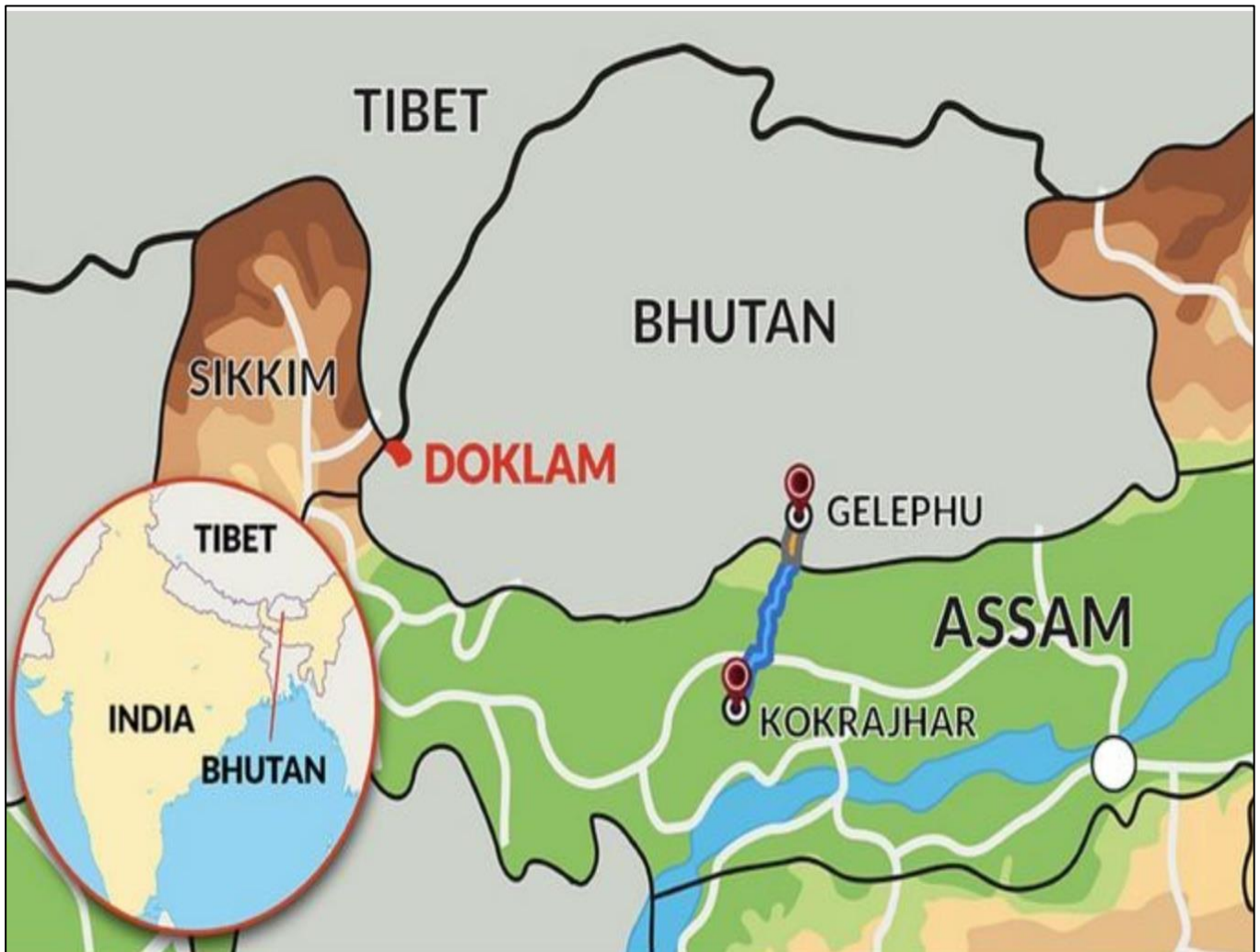
Bhutan, the Himalayan kingdom that brought the world the concept of gross national happiness, is set to build a “mindfulness city” and began raising funds to help start the ambitious project.

Background: -

- The “Gelephu Mindfulness City” (GMC) will lie in a special administrative region with separate rules and laws that will aim to be an economic corridor linking South Asia to Southeast Asia.

Key takeaways

- Gelephu Mindfulness City (GMC) is an innovative urban development project in Bhutan, envisioned by His Majesty King Jigme Khesar Namgyel Wangchuck.
- Location: Gelephu, located in the south-central part of Bhutan.
- Area: Covers over 2,500 square kilometers, making it one of the largest urban development projects in Bhutan.
- Special Administrative Region (SAR): GMC is Bhutan’s first SAR, with executive autonomy and legal independence.



Key Features:

- **Mindfulness and Sustainability:** The city integrates economic growth with mindfulness, holistic living, and sustainability.
- **Economic Hub:** Positioned at the crossroads of South Asia, Southeast Asia, and China, GMC aims to become a regional connectivity and economic exchange hub.
- **Zero Carbon City:** The city is designed to be a “Zero Carbon” city, aligning with Bhutan’s commitment to sustainable development.
- **Infrastructure:** Includes advanced infrastructure, inhabitable bridges, an international airport, and healthcare facilities for both western and traditional medicine.
- **Protected Areas:** Includes a national park and a wildlife sanctuary.
- Gelephu is also called the 'Gateway to the Royal Manas Natinoal Park

Vision and Values:

- **Gross National Happiness (GNH):** The city is anchored on the vision and values of GNH, promoting conscious and sustainable businesses.
- **Buddhist Heritage:** Inspired by Bhutan’s rich spiritual heritage, GMC aims to create a mindful living environment.
- **Business Environment:** Businesses in GMC will be screened and invited based on their respect for the Bhutanese way of life, sustainable development, and sovereignty.

GREEN DIGITAL ACTION (GDA)

GDA was launched in CoP28 (Dubai, 2023) by International Telecommunication Union (ITU) along with other governmental and civil society organizations.

It aims to unite global digital community in developing practical solutions, boosting industry-wide climate support, and strengthening frameworks for monitoring and reporting.



Key Highlights of the Declaration

Leveraging Digital Technologies: To support climate action and building resilient digital infrastructure.

Mitigating the impact of Digitization on climate: Including establishing metrics and indicators to measure the impact of digitization on climate.

Fostering Sustainable Innovation: By facilitating investments; protecting intellectual property and adopting open access to technologies, etc.

Others: Promoting Digital inclusion, literacy, data driven decision making, etc. Significance of Digital Technologies in Sustainable Development.

Informed decision making: Using technologies like data analytics, cloud computing, energy consumption can be optimised to support sustainable manufacturing processes.

Sustainable Design approaches: Stress on circular economy model rather than take-make-dispose to achieve climate goals. **Promoting Open data sources:** Easily accessible information sources and driving innovation towards newer and cleaner technologies Ex., Digital Public Infrastructure, etc.

Role in Disaster Management: Enhancing climate monitoring and forecasting including Early Warning Systems, early communication, and search and rescue, etc.

HLC NATIONAL LANDSLIDE RISK MITIGATION (NLRM) PROJECT IN 15 STATES

National Landslide Risk Mitigation (NLRM) Project :The HLC approved Rs. 1000 crore for mitigating **landslide risks across 15 states**, enhancing safety in vulnerable regions. This initiative is part of the **National Disaster Mitigation Fund (NDMF)** and addresses a critical need to reduce landslide-induced damages in vulnerable regions.

- **Training and Capacity Building for Civil Defence:** The HLC approved a funding of Rs. 115.67 crore under the **National Disaster Response Fund (NDRF)**.
 - **Objective:** Training Civil Defense volunteers across all States and Union Territories to improve disaster preparedness and response.

Need for NLRM Project

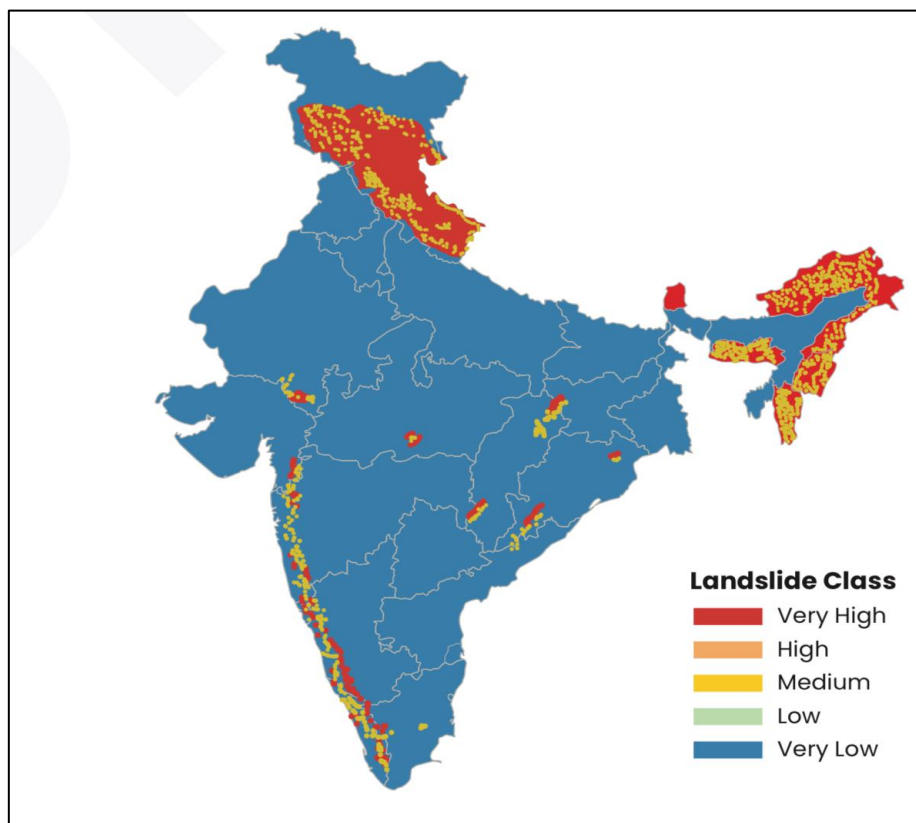
- **India's Landslide Risk:** India ranks among the **top four countries with the highest landslide risk**, according to the ISRO Landslide Atlas of India.
- **Prevention and Prediction:** Unlike earthquakes and tsunamis, landslides **can be both prevented and predicted**, enabling proactive disaster management.
- **Scientific Culture:** The NLRM project aims to promote a culture of scientific investigation, analysis, and management of landslides, enhancing preparedness and mitigation.

About the National Disaster Mitigation Fund

- **Establishment:** The National Disaster Mitigation Fund was established by the Central Government in **2021** under the Disaster Management Act, 2005, based on the recommendation of the **15th Finance Commission**.
- **Administered By:** National Disaster Management Authority (NDMA).

Purpose: The fund is exclusively for financing mitigation projects related to various disasters.

Landslides Classification



GLOBAL PLASTIC TREATY

More than 170 countries are converging in Busan, Republic of Korea, to negotiate a new legally binding global treaty to end plastic pollution, including marine pollution.

Background: -

- This is the fifth (and final) round of talks since 2022, when the UN Environmental Assembly (UNEA) agreed to develop such a by the end of 2024.

Why is a global plastic treaty required?

- 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, according to a report by the Organisation for Economic Co-operation and Development (OECD).
- Plastic takes anywhere from 20 to 500 years to decompose, and less than 10% has been recycled till now, according to a 2023 study published by The Lancet.
- Much of the plastic waste leaks into the environment, where it breaks down into smaller particles (microplastic or nanoplastic).
- Studies have found that exposure to chemicals in plastic can cause endocrine disruption and a range of diseases including cancer, diabetes, reproductive disorders, and neurodevelopmental impairment. Plastic also harms species inhabiting marine, freshwater, and land ecosystems.
- Plastic contributes to climate change also. In 2020, it generated 3.6% of global greenhouse gas (GHG) emissions, with 90% of those emissions coming from plastic production, which uses fossil fuels as raw material.
- The remaining 10% of emissions were released during plastic waste management and treatment.
- India accounts for 20% of the world's global plastic pollution with release of 9.3 mt, which is significantly more than the countries next in the list – Nigeria (3.5 mt), Indonesia (3.4 mt) and China (2.8 mt), the study said.

What is on the negotiating table?

- Negotiations pertain to formulating a global set of rules that will address plastic pollution through its life cycle, from fossil-fuel based production, and the challenges of managing plastic disposal and waste.
- The final rules may also ban particular types of plastic, products and chemical additives used in plastics, and set legally binding targets for recycling and recycled content used in consumer goods.
- There will be talks on 'just transition' for workers and communities whose livelihoods would be affected by the elimination of certain items and a move away from plastic production.
- However, countries have been unable to converge on agenda items. Saudi Arabia, Iran, Russia, Kazakhstan, Egypt, Kuwait, Malaysia, and India have resistance to stricter mandates and have instead proposed downstream measures such as innovative waste management and sustainable plastic use. Countries have also not been able to agree on the subject of finance.

What is India's position?

- India has made it clear that it does not support any restrictions on the production of polymers. Any restrictions are beyond the mandate of the UNEA's resolution adopted at Nairobi in 2022, according to India.
- The country has also sought the inclusion of financial and technical assistance, and technology transfer in the substantive provisions of any final treaty.
- On the exclusion of harmful chemicals used for plastic production, India has said that any decision should be based on scientific studies, and the regulation of such chemicals should be regulated domestically.
- India banned the use of single-use plastics covering 19 categories in 2022. However, the country has said that a decision on the issue of including certain plastic items for phase-out in the final treaty should be pragmatic and regulation should be nationally driven taking into account national circumstances.



Key points of contention included capping plastic production, managing plastic products and hazardous chemicals, and financing to support the implementation of the treaty in developing countries.

Panama proposed a plan for a global reduction target for plastic production, which garnered support from over 100 countries but ultimately did not progress.

Major oil-producing nations like Russia and Saudi Arabia were accused of standing in the way and using procedural tactics to delay negotiations.

KANAGANAHALLI AND SANNATI

Recently, researchers highlighted the untapped tourism potential of the ancient Buddhist sites of Kanaganahalli and Sannati, located in Kalaburgi, Karnataka along the banks of Bhima river.



- 2000-year-old Ashokan edict.
- AdholokaMaha Chaitya (the Great Stupa of the Netherworlds)
- Built: From 3rd Century B.C. to 3rd Century A.D. Features: Elaborate ornamentation, Ayaka platforms, circumambulatory path, etc.
- Sculptures: Of Buddha, Yakshas, Jataka stories, Ashoka, Satavahana monarchs etc.
- Sculpture of Asoka etched with 'Raya Asoka' in Brahmi script, the only surviving image of the Mauryan emperor.
- Resembles Amaravati School of Art



NARASAPUR CROCHET LACE

Narasapur Crochet Lace from West Godavari District, Andhra Pradesh awarded the Geographical Indication (GI) tag.

About Narasapur crochet lace :

Crochets crafted with cotton thread in different colors.

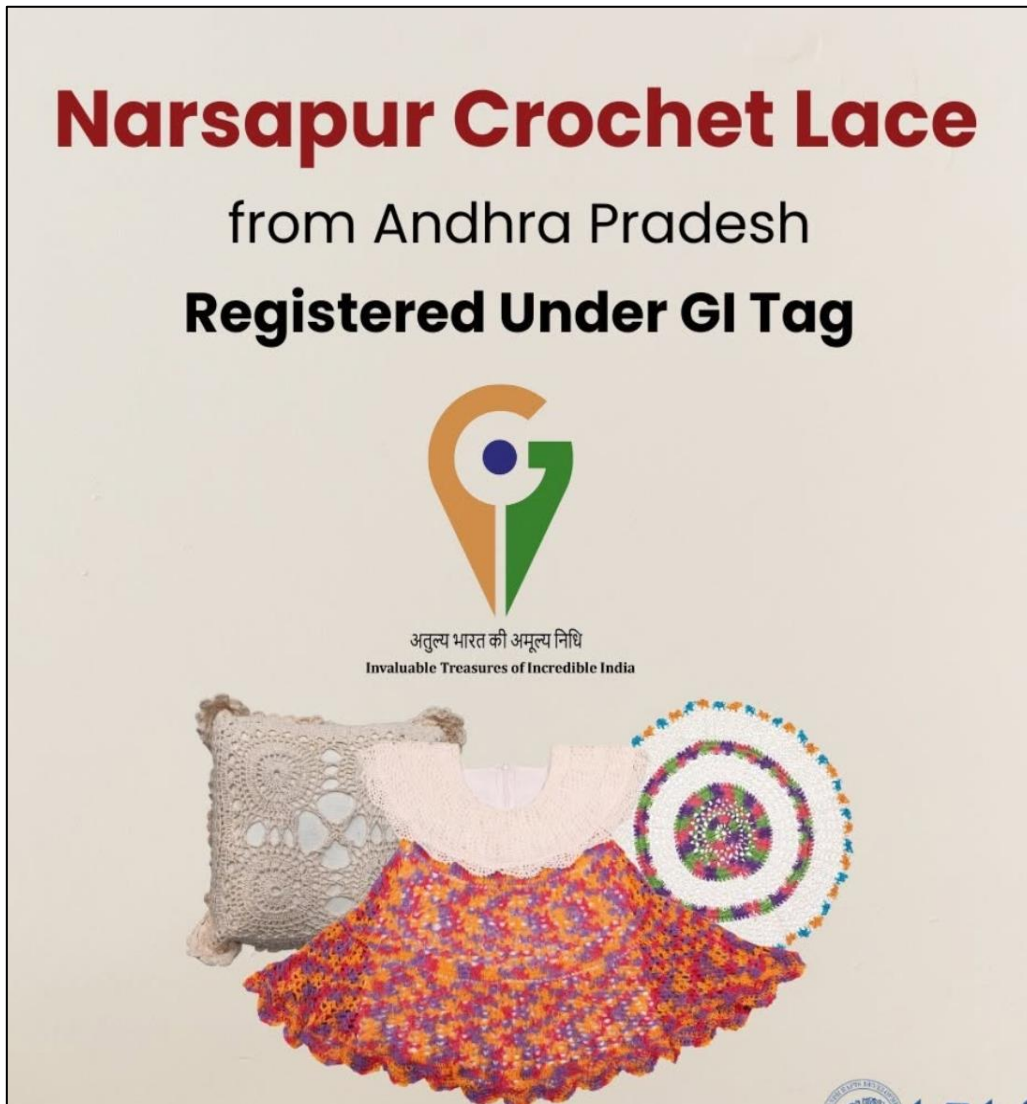
Lace work is done using thin threads woven with thin crochet needles of varying sizes.

About GI Tag

Name or a sign given to certain products that relate to a specific geographical location valid for 10 years.

Administered under the Geographical Indications of Goods (Registration and Protection) Act of 1999.

Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry is the Nodal ministry.



GLOBAL MATCHMAKING PLATFORM (GMP)

United Nations Industrial Development Organization (UNIDO) and the Climate Club launched the Global Matchmaking Platform (GMP).

Background: -

- The initiative focused on accelerating decarbonisation in heavy-emitting industries was launched in the presence of partner countries, key donor and partner organisations.

Key takeaways

- The Global Matchmaking Platform (GMP) is an initiative designed to accelerate the decarbonization of heavy-emitting industries in emerging and developing economies.

Purpose and Objectives:

- **Decarbonization:** The primary goal of the GMP is to fast-track the decarbonization of industries that are major contributors to greenhouse gas emissions.
- **Technical and Financial Solutions:** The platform connects countries with technical and financial solutions to reduce emissions in energy and emissions-intensive industrial sectors.



How It Works:

- **Single-Point Gateway:** The GMP acts as a single-point gateway for governments in emerging and developing economies to raise customized requests and identify globally leading technical and financial solutions.
- **Matchmaking Process:** The platform facilitates a matchmaking process where countries' specific needs are matched with appropriate technical and financial support from partner organizations.
- **Pilot Projects:** Pilot project discussions are already underway in countries such as Argentina, Colombia, Chile, Egypt, Indonesia, Kenya, Morocco, and Cambodia.

United Nations Industrial Development Organization (UNIDO)

Year of Formation: November, 1966

Headquarters - Vienna, Austria

Sector- Economy

UNIDO in India : International Centre for Inclusive and Sustainable Industrial Development (ICISID), Delhi.

The UNIDO Regional Office in New Delhi covers seven countries including Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka.

Support and Partnerships:

- **Climate Club:** The GMP is a support mechanism of the Climate Club, with the secretariat hosted by the United Nations Industrial Development Organization (UNIDO).
- **Delivery Partners:** Key delivery partners include Climate Investment Funds, the German Development Cooperation (GIZ), UNIDO, and the World Bank.
- **Initial Funding:** The platform received initial funding from the German Federal Ministry of Economic Cooperation and Climate Action (BMWK).

BAL VIVAH MukT BHARAT CAMPAIGN

India will witness the launch of the “Bal VivahMukt Bharat” campaign, which aims to eliminate child marriage in the country, will take place at Vigyan Bhawan in New Delhi.



Background of the Campaign

The campaign draws inspiration from the “BetiBachaoBetiPadhao” scheme. Launched on January 22, 2015, this initiative transformed societal attitudes towards girls. The new campaign seeks to further this progress by focusing on child marriage.

Importance of Ending Child Marriage

Child marriage remains an issue in India. Nearly one in five girls marry before the age of 18. This practice disrupts their education and forces them into early caregiving roles. It often leads to a cycle of poverty and lost opportunities for young women.

Goals of the Campaign

- The “Bal VivahMukt Bharat” campaign aligns with the Prime Minister’s vision for a “Viksit Bharat” by 2047.
- It emphasises the need for equal opportunities for women and girls. The campaign aims to empower young girls and promote their education, skills, and entrepreneurship.

Pledge and Participation

During the launch, a pledge against child marriage will be taken. The campaign aims to involve up to 25 crore citizens. This collective effort is crucial in addressing child marriage and supporting girls’ rights.

Online Awareness Platform

The event will introduce the “Child Marriage Free Bharat” portal. This online platform will raise awareness about child marriage and provide resources for reporting cases. It aims to engage the public in prevention efforts.

The launch event will include participation from various stakeholders. Child Marriage Prohibition Officers, civil society groups, and government officials will be present. The event will be live-streamed on webcast and YouTube for wider reach.

A recent study published in 'The Lancet Global Health' journal sheds light on the **prevailing scenario of child marriage in India**, revealing both progress and setbacks in the fight against this deeply rooted practice.

What are the Major Trends Highlighted by the Study?

Status in India:

- Girl child marriages declined from **49% in 1993 to 22% in 2021**. Boy child marriages reduced from **7% in 2006 to 2% in 2021**, indicating an overall national decline.
- However, between **2016 and 2021**, the progress plateaued, with certain states experiencing a troubling rise in child marriages.
 - Notably, six states witnessed an **increase in girl child marriages**, including **Manipur, Punjab, Tripura, and West Bengal**.
 - Eight states observed a rise in boy child marriages, encompassing **Chhattisgarh, Goa, Manipur, and Punjab**.
- **Global Trends:** Globally, progress against child marriage has been notable, but the **Covid-19 pandemic** threatens this advancement, putting approximately **10 million more girls at risk of child marriage** over a decade.

What are the Major Factors Associated with Child Marriage?

- **Economic Factors:** Families living in poverty might see **marriage as a means to reduce the economic burden** by transferring responsibility for the girl to her husband's family.
 - In some regions, the tradition of providing dowry can influence families to **marry off daughters at a young age to avoid higher dowry costs later**.
 - Also, in areas prone to **natural disasters or agrarian crises**, families facing economic hardships might resort to early marriage as a coping mechanism or to secure stability.
- **Social Norms and Traditional Practices:** Long-held customs and traditions often prioritize **early marriage as a social norm**, perpetuating the practice across generations.

- **Pressure from the community or family** to conform to prevalent customs and traditions lead to early marriages, particularly for girls.
- **Gender Inequality and Discrimination:** Unequal power dynamics and **limited agency for girls compared to boys** contribute significantly to early marriage.
 - **Lack of access to education and opportunities for girls often pushes families to opt for early marriages**, viewing it as a way to secure their daughters' futures.

What are the Legislative Framework and Initiatives Related to Child Marriage in India?

- **Legislative Framework:** India enacted the **Prohibition of Child Marriage Act in 2006**, establishing the legal age for marriage at 21 for men and 18 for women.
- Section 16 of the Prohibition of Child Marriage Act allows State Governments to appoint '**Child Marriage Prohibition Officers (CMPO)**' for specific areas.
- CMPOs are responsible for preventing child marriages, collecting evidence for prosecutions, counseling against promoting or aiding such marriages, raising awareness about their harmful effects, and sensitizing communities.
- Government has introduced a bill namely '**the Prohibition of Child Marriage (Amendment) Bill, 2021 for raising the age of marriage of women to 21 years** to make it at par with the men.
- **Related Initiatives:**
 - **Dhanalakshmi Scheme:** It is a conditional cash transfer scheme for a girl child with insurance coverage.
 - It also aims to **eliminate child marriage by offering parents insurance coverage** of medical expenses and encouraging the education of the girl child.
 - Schemes like **BetiBachaoBetiPadhao (BBBP)**, also aims to empower girls through education, health and protection, and discourage child marriage.

DUNLIN

The recent Kochi edition of the Kerala Bird Race showcased 192 bird species and among them was the Dunlin, a small shorebird now classified as "Near Threatened". This change reflects an increase in risk from "Least Concern" in 2023, which is often found in large flocks on mudflats and beaches. Birdwatchers spotted it at Puthuvype beach.



Bird Count Statistics

This year, the total bird count dropped. Only 4,885 individual birds were counted, nearly half of last year's 8,639. About 100 birdwatchers participated in the event. Experts caution that this decline may not indicate a long-term trend. Consistent monitoring is necessary for accurate assessments.

Event Coordination and Participation

The event was coordinated by the Cochin Natural History Society, Kerala Agricultural University, and the State Forest and Wildlife Department. It spanned around 100 locations in Kochi and central Kerala. Approximately 25 teams took part in the bird race.

Notable Species Observed

Several remarkable species were recorded during the race. These included the Red Avadavat, Blue-faced Malkoha, and Banded Bay Cuckoo. Other notable sightings were the Broad-billed Sandpiper, Little Stint, and Eurasian Sparrowhawk.

The Spot-bellied Eagle-Owl and Mongolian Short-toed Lark were also spotted. Additionally, the Rosy Starling, Tickell's Blue Flycatcher, Richard's Pipit, Tree Pipit, and Brown Fish Owl were recorded.

The bird race also aimed to promote birdwatching among youth. Organisers brought into light the importance of engaging children in nature conservation efforts. This outreach initiative encourages future generations to appreciate birdlife.

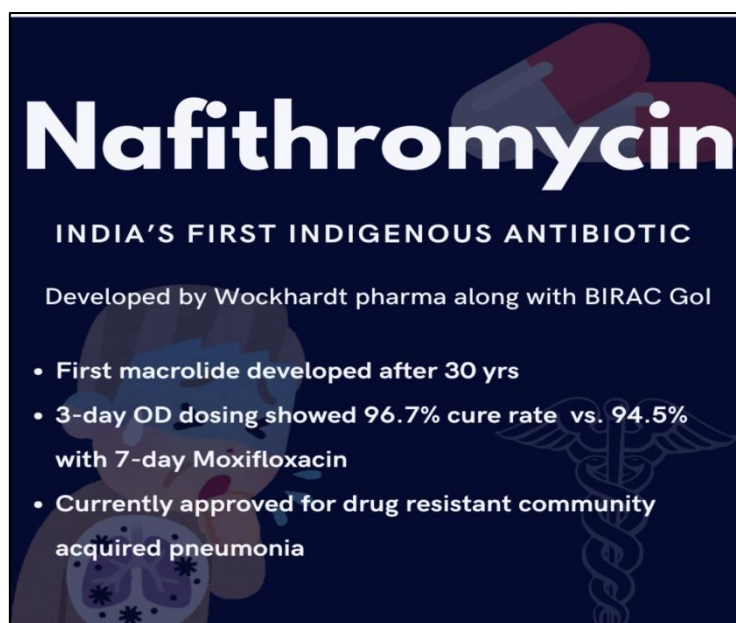
NEW ANTIBIOTIC -NAFITHROMYCIN

Wockhardt Ltd has developed Nafithromycin, the first domestically produced antibiotic targeting multi-drug-resistant bacteria. This antibiotic is aimed at treating community-acquired bacterial pneumonia (CABP) in adults, the launch was held on November 20, 2024, in New Delhi.

Global Health Impact

Pneumonia caused by drug-resistant bacteria poses a serious global health threat, which accounts for over two million deaths annually. India has 23% of the world's pneumonia cases.

The country faces increasing resistance to existing antibiotics, such as azithromycin. Nafithromycin emerges as a new solution to combat this issue.



Nafithromycin

INDIA'S FIRST INDIGENOUS ANTIBIOTIC

Developed by Wockhardt pharma along with BIRAC Gol

- First macrolide developed after 30 yrs
- 3-day OD dosing showed 96.7% cure rate vs. 94.5% with 7-day Moxifloxacin
- Currently approved for drug resistant community acquired pneumonia

Development Support

BIRAC provided Rs 8 crore in support for the project. The total cost for clinical trials was Rs 500 crore. Trials were conducted in the United States, Europe, and India. This backing was crucial for the successful development of Nafithromycin.

Drug Efficacy

Nafithromycin is a groundbreaking antibiotic for respiratory infections, which is the first new antibiotic in 30 years. The drug is taken as a single tablet daily for three days.

It is ten times more potent than azithromycin and has eight times better lung absorption. The clinical cure rate stands at 96.7%, and it is safe for patients.

Research Timeline

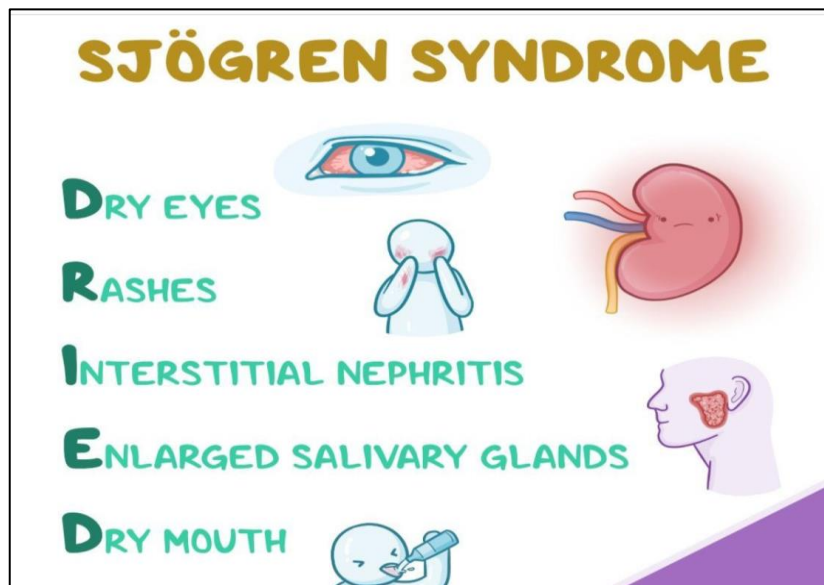
The development of Nafithromycin took 14 years of extensive research. Dr. Jitendra Singh brought into light its importance in fighting antimicrobial resistance (AMR). AMR occurs when bac

SJOGRENS DISEASE

Sjögren’s disease is an autoimmune condition, which primarily attacks moisture-producing glands. This leads to symptoms like dry eyes and mouth; many patients suffer for years before diagnosis.

Symptoms of Sjögren’s Disease

Common symptoms include dry eyes and mouth. Patients may experience joint pain and fatigue. Other issues can involve salivary gland swelling. Some may face lung, kidney, or nervous system complications. Skin dryness and stomach problems are also reported.



Prevalence and Demographics

Globally, Sjögren’s affects 1 in 1,000 people. Accurate data is lacking in India. The disease is ten times more common in women. It often appears in individuals in their 30s or 40s, but it can occur at any age.

Diagnosis can be complex and delayed. Patients often consult multiple specialists. Symptoms are frequently treated in isolation. This can lead to frustration and prolonged suffering.

Treatment Options

Treatment focuses on symptom management. Salivary stimulants and lubricating drops are common. Immunosuppressive drugs may be prescribed for systemic issues. Hormone therapy is not effective for this disease.

Dryness can severely affect daily activities. It can impact speaking, swallowing, and dental health. Emotional and social challenges are important. Fatigue and lifestyle adjustments can take a toll.

Advocacy and Support

Organisations like Sjögren's India provide vital support. They educate patients and healthcare providers. Advocacy groups work to improve awareness and access to care. Partnerships between patients and doctors are crucial for better outcomes.

Certain lifestyle changes can alleviate symptoms. Avoiding air conditioning and reducing screen time helps. Using gel-based eye drops can provide relief. These adjustments can improve daily comfort.

DONGFENG- 100

Recent developments in missile technology have heightened global security concerns. China has enhanced its supersonic cruise missile, the Dongfeng-100 (DF-100), which poses threat due to its potential upgrades and capabilities.

DF-100 Specifications

The DF-100 is currently a supersonic missile, which can reach speeds of 4,700 km/h. The missile is 9 metres long and can carry a warhead weighing up to 500 kg. It utilises a ramjet engine for propulsion, which allows it to achieve hypersonic speeds.



Range and Launch Platforms

The missile's operational range has expanded to 4,000 km. Previously, it had a range of 2,000–3,000 km. The DF-100 can be launched from China's H-6K bomber or a 10×10 transporter erector launcher. This versatility enhances its deployment options.

Guidance Systems

The DF-100 employs advanced guidance systems, which include inertial navigation, terrain matching, scene matching, and satellite positioning. Such technology ensures high accuracy, with the ability to strike within one metre of its target.

Flight Characteristics

The missile ascends to a height of 30 km, which helps it evade radar detection. It can alter its direction and flight path even at high speeds. This agility allows it to bypass air defence systems effectively.

The DF-100 can threaten US military bases in Guam. It also poses risks to bases in Japan and South Korea. Its capability to strike both fixed and moving targets makes it a formidable weapon in the Western Pacific region.

CHEMICAL WEAPON CONVENTION (CWC)

The Organisation for the Prohibition of Chemical Weapons (OPCW) Hague award acknowledges ICC contributions to chemical safety, compliance with Chemical Weapon Convention (CWC).

This is the first time that the Award recognises the efforts of a chemical industry body. Hague Award was established in 2014 to honor OPCW's contributions to Chemical Weapons Conventions (CWC) goals.

Chemical Weapon Convention (CWC):

Genesis: It came into force in 1997, and presently has 193 States Parties. India is an original signatory to the Convention.

Aim: To eliminate an entire category of weapons of mass destruction by prohibiting the development, production, acquisition, stockpiling, retention, transfer or use of chemical weapons by States Parties.

Implementation: OPCW is the implementing body, with a mission to achieve a world free of chemical weapons.

OPCW was awarded the Nobel Peace Prize in 2013.

Chemical Weapon is a chemical used to cause intentional death or harm through its toxic properties.

◆ Munitions, devices and other equipment specifically designed to weaponise toxic chemicals also fall under the definition of chemical weapons.

Implementation in India: National Authority Chemical Weapons Convention (NACWC) is the national responsible for implementing the Convention in India.

NACWC was established under the Chemical Weapons Convention Act, 2000.



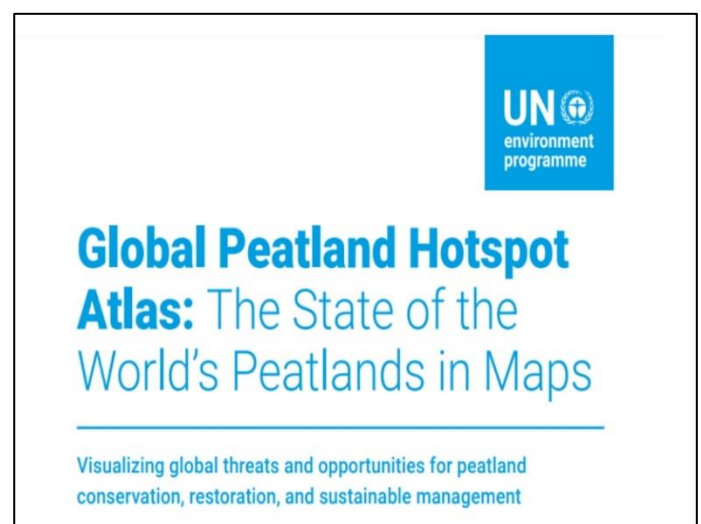
GLOBAL PEATLAND ATLAS

The Atlas builds on the Global Peatlands Assessment (2022) and accompanying Global Peatland Map 2.0, both flagship products of the UNEP Global Peatlands Initiative

UNEP Global Peatlands Initiative: It was formed at the United Nations Framework Convention on Climate Change (UNFCCC) COP in Marrakech, Morocco in 2016.

About Peatlands

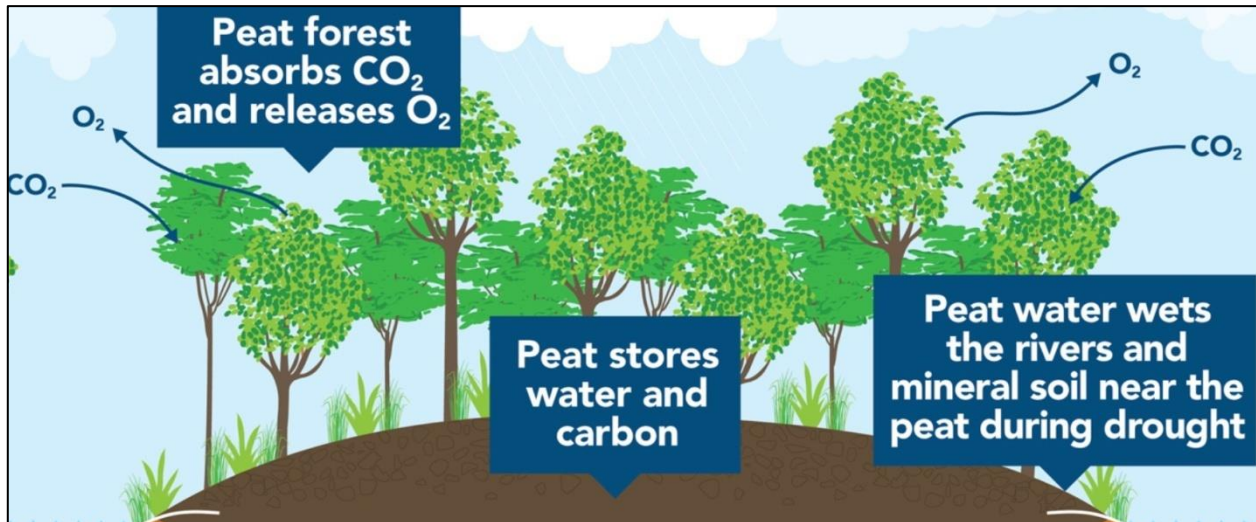
Peatlands: Terrestrial wetland ecosystems in which waterlogged conditions prevent plant material from fully decomposing.



Consequently, the production of organic matter exceeds its decomposition, resulting in a net accumulation of peat. Peat is dead and partially decomposed plant remains that have accumulated in situ under waterlogged conditions.

Global Peatlands distribution: Peatlands cover 3.8% of the world's land area.

Its expanse: Naturally forested peatlands in Europe and tropical peat swamps in South East Asia, permafrost area of Russia and Canada, and high mountain peatlands in the Andes and Himalayas.



The world's largest tropical peatlands are located in the Congo Basin.

Peatland Degradation: Nearly 12% of global peatlands are degraded, with more than 60% of peatlands in India being degraded.

Threats: Agriculture, peat extraction, industrial activities and infrastructure development. Represents currently 4% of global anthropogenic emissions.

Initiatives: Guidelines for Global Action on Peatlands (2002), The UN Environment Assembly (UNEA-4) resolution on the Conservation and Sustainable Management of Peatlands (2019), etc.

Significance of peatland:

Carbon storage: Peatlands are the world's largest terrestrial carbon stock – storing at least 550 Gigatonnes of carbon globally – more than twice the carbon stored in all the world's forests.

Biodiversity conservation: Peatlands are vital habitats for rare and threatened species.

Ecosystem services: Regulating and purifying water for human consumption, agriculture & have a net cooling effect on climate.

GLOBAL STOCKTAKE

A day before the scheduled close of talks, the COP29 meeting in Azerbaijan stared at a major crisis with almost every country and bloc rejecting the latest draft negotiating text.

Background:

- Several countries, including India and Saudi Arabia, objected to references being made to one particular paragraph in Global Stock Take (GST) which had asked all countries to transition away from fossil fuels, triple renewable energy by 2030, reduce emissions of non-CO2 gases including methane, and phase-down coal, among other things.

Key takeaways

- The Global Stocktake (GST) is a key mechanism under the Paris Agreement (2015) to assess the world's collective progress toward achieving the Agreement's goals, particularly limiting global warming to well below 2°C, preferably 1.5°C, above pre-industrial levels.
- Key Objectives:
 - Review Climate Actions: Assess the implementation of countries' climate action plans, known as Nationally Determined Contributions (NDCs).
 - Evaluate Support: Examine the support provided to developing countries, including finance, technology transfer, and capacity-building.
 - Promote Transparency: Enhance transparency and accountability in reporting climate actions and support.
- Process and Timeline
 - Periodicity: The GST is conducted every five years, with the first stocktake completed in 2023 and the next one scheduled for 2028.

REPORT EMPHASIZES HEALTH AS THE ARGUMENT FOR CLIMATE ACTION ACROSS PEOPLE, PLACE AND PLANET

Impact of climate change on health

Direct impact:

Noncommunicable diseases (NCD): Climate change and air pollution causes 85% of NCD deaths.

Heat stress: People faced 50 more days of health threatening heat in 2023, due to climate change.

Maternal & reproductive health: Preterm birth, low birth weight, maternal death, decreased fertility etc.

Indirect impact: Increased poverty and marginalization; threat to food & water security; rise in conflicts and migration etc.

In 2023, 20.3 million people were internally displaced due to weather-related disasters.

Key Recommendations

Apply a One Health approach to address the links between human, animal, and ecosystem health.

Transition from extractive economic systems towards circular economy

Ensure New Collective Quantified Goal (NCQG) on climate finance and Loss and Damage Fund arrangements are substantially funded.

Integrate health into national climate action. E.g., Nationally Determined Contributions (NDCs), National Action Plans (NAPs) etc.

Initiatives taken: National Programme on Climate Change and Human Health (Ministry of Health & Family Welfare), The Network on Climate Change & Health (a program of the Department of Science & Technology), etc.

INDIA-CARICOM SUMMIT

The Prime Minister met with the Prime Minister of Antigua and Barbuda on the sidelines of the 2nd India-CARICOM Summit in Georgetown, Guyana.

Political features

Antigua and Barbuda is a Caribbean Island situated in the lesser Antilles in the eastern Caribbean Sea.

Maritime boundary: Anguilla (United Kingdom) & Saint Barthélemy (France) to northwest, the Federation of Saint Kitts and Nevis to west, Montserrat (United Kingdom) southwest, and Guadeloupe (France) to the southeast.

Geographical features :

Antigua's coastline is intricate, with bays and headlands fringed with reefs and shoals.

Highest Peak: Mount Obama.



About Caribbean islands (also known as the West Indies)

Located in the Atlantic Ocean, south-east of Florida, east of Central America, and north of South America.

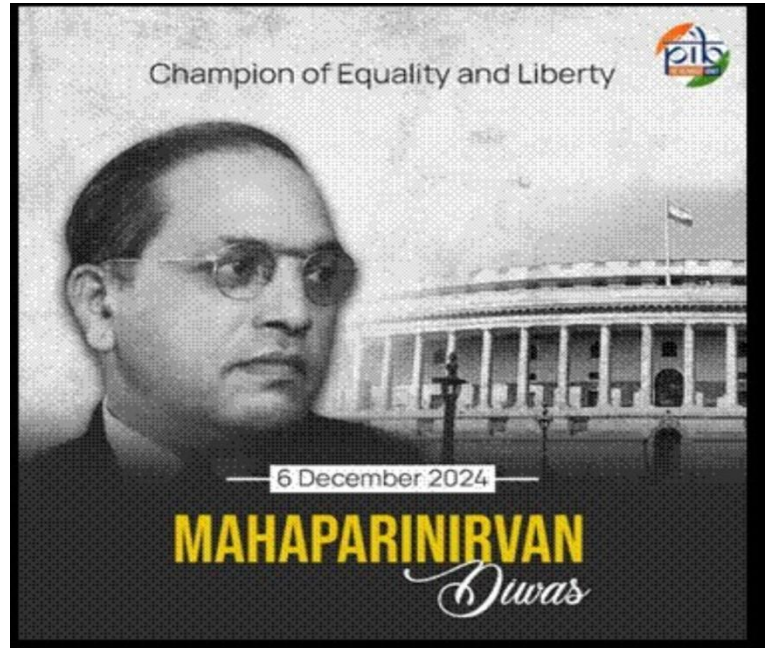
The Caribbean contains the islands of the Greater Antilles in the north-west as well as the Lesser Antilles islands in the south-east.

MAHAPARINIRVAN DIWAS

Mahaparinirvan Diwas is observed annually on December 6 to commemorate the death anniversary of Bharat Ratna Dr. Bhimrao Ramji Ambedkar.

Background:

- According to Buddhist texts, Lord Buddha's death is considered to be Mahaparinirvan, the Sanskrit term for 'nirvana after death'. Parinirvan is considered liberation from Samara, karma, and the cycle of death and birth.
- Ambedkar's followers believe he was as influential as Lord Buddha, which is why his death anniversary is observed as Mahaparinirvan Divas.



Key takeaways

- Dr. B.R. Ambedkar, born on April 14, 1891, in Mhow, Madhya Pradesh, dedicated his life to uplifting marginalized communities who faced systemic social discrimination.
- He proposed revolutionary steps to empower the oppressed, including reservations in education, employment, and politics.
- He launched the newspaper Mooknayaka (Leader of the Silent) to amplify the voices of the downtrodden. He established the Bahishkrit Hitkarini Sabha (Outcastes Welfare Association) in 1923 to spread education, improve economic conditions, and address societal inequalities.
- His leadership in historic movements such as the Mahad March (1927) for access to public water and the temple entry movement at Kalaram Temple (1930) challenged caste hierarchies and priestly dominance.
- Dr. B R Ambedkar's pivotal role in the Poona Pact of 1932, which replaced separate electorates with reserved seats for Dalits, marked a turning point in India's fight for social justice.
- Ambedkar's doctoral thesis inspired the establishment of the Finance Commission of India. At the same time, his ideas were instrumental in framing the guidelines for the Reserve Bank of India (RBI) Act, 1934. He was one of the founders of Employment Exchanges in our country.
- He championed systemic advancements such as the foundation of Employment Exchanges, the establishment of the National Power Grid System, and pivotal projects like the Damodar Valley Project, Hirakud Dam Project, and Sone River Project, showcasing his foresight in infrastructure and resource management.
- As Chairman of the Constitution Drafting Committee, Ambedkar played a pivotal role in crafting the Indian Constitution, presenting a draft in 1948 that was adopted with minimal changes.
- Dr. BR Ambedkar's multifaceted contributions from economic policy and infrastructure to constitutional law cemented his legacy as a nation-builder, committed to fostering a just and equitable India.

POTATO CRISIS

Odisha food supplies and consumer welfare minister accused the West Bengal government of creating an artificial scarcity of potatoes to “tarnish the reputation” of the Odisha government.

Background: -

- Odisha has been grappling with high prices of Potato for months. Recently, the government of Bengal, a major potato supplier to Odisha, restricted the shipment of the tuber as prices rose in its own markets.

Key takeaways

- India is the second largest producer of potato in the world, after China.
- Between 1991-92 and 2020-21, potato area has doubled from 11 to 22 lakh hectares, and production tripled – from 181.95 to 561.72 lakh metric tonnes. Productivity increased by over 50 per cent – from 16 to 25 metric tonnes per hectare.

	State	Production(000 Tonnes)
1	Uttar Pradesh	15892
2	West Bengal	12600
3	Bihar	9125.8
4	Gujarat	3780
5	Madhya Pradesh	3582
6	Punjab	2850
7	Haryana	765.9
8	Assam	761.84
9	Jharkhand	733.77
10	Chhattisgarh	623.65

- In India, potatoes are grown during the rabi (winter-spring) season, mainly in Uttar Pradesh, West Bengal, Bihar, Gujarat, Madhya Pradesh, Punjab, Haryana, Assam, Jharkhand and Chhattisgarh.
- A small quantity of potato is also grown during the kharif (monsoon) season in Uttarakhand, Karnataka, Himachal Pradesh, Tamil Nadu and Maharashtra.
- Uttar Pradesh was the biggest producer of potato in the country in 2021-22. It was followed by West Bengal. These two states accounted for almost half of the country’s total potato production during 2021-22.
- Potato is a temperate climate crop, requiring low temperatures from 15°C to 25°C, and Odisha’s agro-climatic conditions are not conducive for potato cultivation. Thus, the state is dependent on supply from other states, particularly from West Bengal, to meet its demand.

LAKE EFFECT SNOW

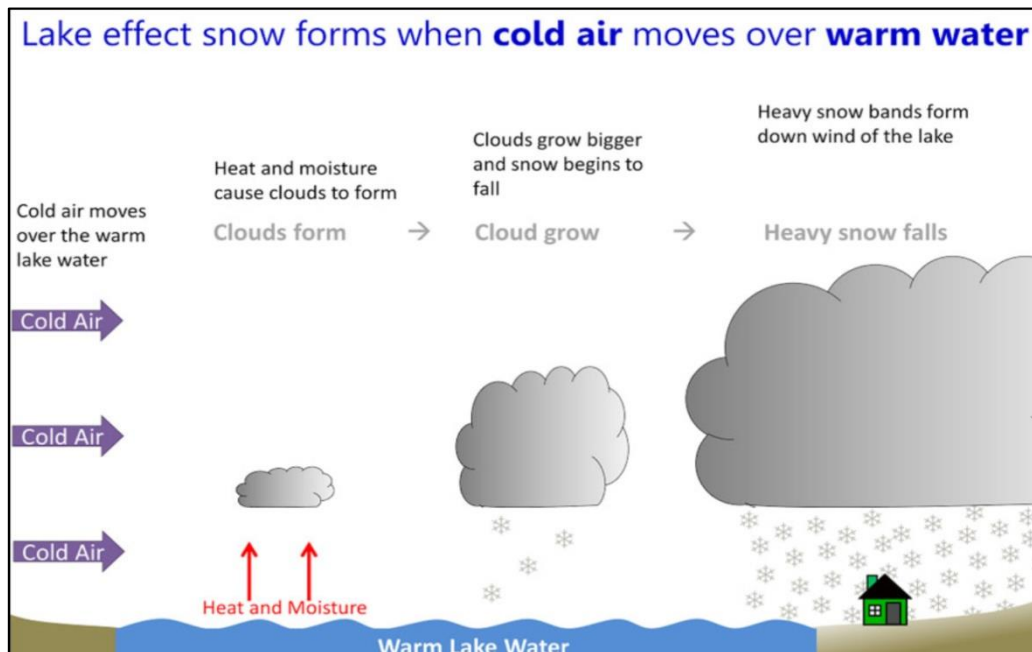
Recently, parts of US north-east saw substantial snowfall thanks to a phenomenon known as “lake-effect snow”.

Background: -

- Western New York state was hit particularly hard, with nearly 4ft (1.22m) of snow accumulating in just four days. In response to the heavy snowfall, New York and Pennsylvania declared states of emergency.

Key takeaways

- Lake-effect snow is a weather phenomenon that occurs when cold air moves over relatively warmer lake waters. This process can lead to significant snowfall, especially in regions downwind of the lakes.



Formation:

- **Cold Air:** Cold air moves over the warmer waters of large lakes.
- **Moisture Uplift:** The warm lake water heats the lower layer of air, causing it to rise. As the moist air rises, it cools and condenses, forming clouds.
- **Snowfall:** These clouds can produce heavy snowfall, often in narrow bands. The snowfall rates can exceed several inches per hour.

Key Factors:

- **Temperature Difference:** A significant temperature difference between the lake surface and the air above is crucial for lake-effect snow formation.
- **Wind Direction:** The direction and speed of the wind determine where the snow bands will form and how far they will travel inland.
- **Lake Size:** Larger lakes, like the Great Lakes in North America, can produce more intense lake-effect snow.

Examples:

- **Great Lakes Region:** The areas around the Great Lakes, such as Buffalo, New York, and parts of Michigan, often experience significant lake-effect snow.
- **Other Locations:** Similar phenomena can occur near other large lakes, such as the Great Salt Lake in Utah and Lake Baikal in Russia.

AKAL TAKHT

The Akal Takht, situated within the Golden Temple complex in Amritsar, was established by the sixth Sikh Guru Hargobind in 1606 following the execution of his father, Guru Arjan Dev, by the Mughals.



- Guru Hargobind used this platform for governance, and is believed to have issued the first directive (Hukamnama) from here, urging Sikh congregations to contribute horses and weapons to the Panth.
- The Akal Takht was also a symbol of the Sikh defiance of Mughal authority. The 12-foot-high platform of the Akal Takht symbolised a challenge to the Mughal government in Agra (and later Delhi), where Emperor Jahangir, on whose order Guru Arjan Dev was executed, sat on an 11-foot-high throne.
- The Akal Takht became the focal point for Sikhs during the period following the execution of Banda Singh Bahadur, the general of the Khalsa army, in 1716. Members of the community would gather at the Akal Takht on Baisakhi and Diwali for Sarbat Khalsa (assembly of all Sikhs) where crucial decisions would be made.
- Initially, the Sarbat Khalsa appointed the Jathedar (head) of Akal Takht during the annual congregations. After the British established control, the appointment of the Jathedar came under the influence of the Darbar Sahib committee, which was dominated by leaders who were loyal to the regime.
- Following the enactment of the Sikh Gurdwaras Act in 1925, the Jathedar began to be appointed by the Shiromani Gurdwara Parbandhak Committee (SGPC), a body formed in 1920 to manage Sikh shrines and free them from British-supported mahants.
- The SGPC is currently the apex governing body of all Sikh gurdwaras in the states of Punjab and Himachal Pradesh, and the Union Territory of Chandigarh.

How does the Akal Takht hand out religious punishment?

- As the head of the highest seat of temporal power of the Sikhs, the Jathedar of the Akal Takht is the supreme temporal and religious authority of the Sikhs, and the final word on the affairs of the community.
- Any person who identifies as a Sikh can be summoned to the Akal Takht, tried, and sentenced. The Akal Takht's justice applies only to those who voluntarily submit to its authority.
- Among the prominent Jathedars of the Akal Takht was Akali Phoola Singh, who summoned Maharaja Ranjit Singh for a moral transgression, resulting in the Maharaja receiving punishment of a public flogging at the Akal Takht.

BRAIN ROT

Oxford University Press (OUP) has announced 'brain rot' as the Oxford Word of the Year for 2024.

Background: -

- The selection process for the word of the year 2024 involved over 37,000 public votes from a shortlist of six words compiled by Oxford University.



Key takeaways

- The word 'Brain Rot' highlights the growing concerns around the effects of consuming trivial social media content on mental health.
- 'Brain Rot' describes the cognitive decline attributed to excessive exposure to mindless social media content.
- The term gained momentum alongside the rise of trends like 'digital detoxes,' where individuals consciously take breaks from screens to counteract feelings of burnout or mental stagnation.
- According to OUP, 'Brain Rot' reflects the increasing concern over how technology is shaping human thought processes and habits.
- Its usage surged in recent years, particularly among younger demographics, to describe the mental fatigue caused by binge-watching videos, doomscrolling, or engaging with low-quality online content.

UNCCD COP16

Recently, UNCCD and the UN University Institute for Water, Environment, and Health UNU-INWEH released the report, 'Economics of drought: Investing in nature-based solutions for drought resilience - proaction pays,' at the 16th Conference of the Parties (COP16) to UNCCD in Riyadh, Saudi Arabia.

16th Conference of the Parties (COP16) to UNCCD

- The **sixteenth session of the Conference of the Parties (COP16)** of the UNCCD take place in **Riyadh, Saudi Arabia**, from 2 to 13 December 2024.
 - It coincides with the **Convention's 30th anniversary**.
 - It will also be the **first time a UNCCD COP is held in the Middle East and North Africa (MENA) region**, which knows firsthand the impacts of desertification, land degradation and drought.

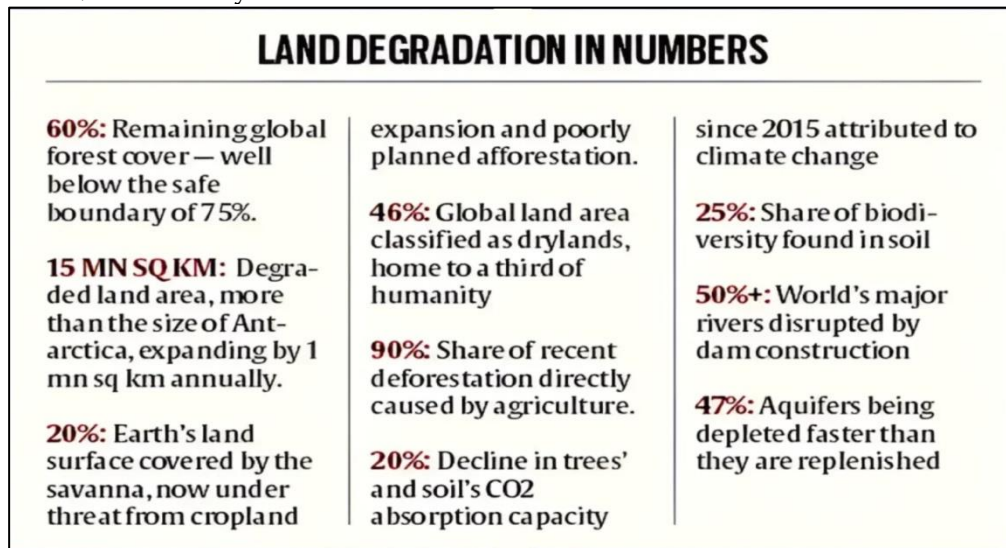
Key Highlights of UNCCD Report

Scale of Land Degradation: Currently, **40% of the world's land is degraded**, impacting the lives of **3.2 billion people** globally, especially indigenous communities, rural households, youth, and women.

Annual Cost of Drought: Annual global costs of drought already exceed \$307 billion, driven by land mismanagement, deforestation, groundwater overdraft, and climate change.

Human-Induced Droughts: Human-induced droughts have increased by 29% since 2000, and projections indicate that by 2050, **three in four people worldwide** could be affected.

- Drought is increasingly linked to unsustainable land and water management practices, not merely the lack of rainfall.



Financial Gaps: The world needs \$355 billion annually from 2025 to 2030 to meet land restoration and drought resilience goals.

- Current investments have increased from \$37 billion in 2016 to \$66 billion in 2022, but there remains an **annual shortfall of \$278 billion**.
- The **private sector currently contributes only 6%** of the required funding, and increasing private investment is essential.

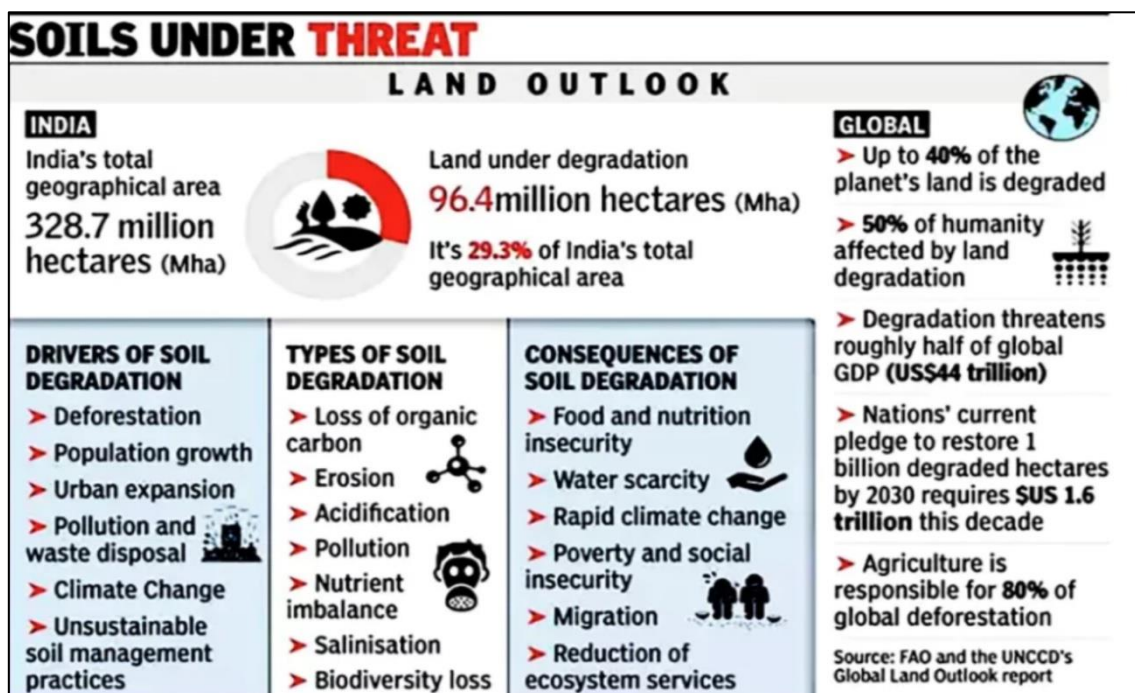
Cost of Inaction: Land degradation already costs the global economy \$878 billion annually, which includes **losses in agricultural productivity, ecosystem services**, and damages caused by drought.

Economic and Environmental Case for Nature-Based Solutions (NbS)

- **Nature-Based Solutions (NbS)** focus on restoring ecosystem functions and soil health to enhance water flow, storage, and supply.
 - **Examples include:** Reforestation, grazing management, and watershed restoration.
- **Triple Dividend of NbS:**
 - **Reduce loss and damage** from drought.
 - **Increase income** for land and water users.
 - Generate **co-benefits** for climate resilience, biodiversity, and sustainable development.
- Every **\$1 invested in NbS** yields **up to \$27 in benefits**, such as:
 - Higher farmer incomes.
 - Value chain resilience.
 - Reduced long-term economic costs.
- **Business Potential:** By 2030, NbS could generate **\$10.1 trillion in business value** and create **395 million jobs** globally.

Causes of Land Degradation

- **Unsustainable Agricultural Practices:** **Unsustainable** use of water resources especially in **arid or dry regions** leads to soil degradation and erosion.
 - Unsustainable irrigation depletes freshwater resources, particularly in regions like **Punjab**, where **groundwater extraction exceeds replenishment levels by 165%**, also creating the **problem of salinization**.
- **Excessive Use of Fertilizers:** Overuse of **nitrogen- and phosphorus-based fertilizers** destabilizes ecosystems by causing nutrient imbalance.
 - For instance, the eutrophication of water bodies like the **Gulf of Mexico's "dead zone"** is linked to fertilizer runoff.
- **Climate Change:** Global warming increases the frequency and **intensity of extreme weather events** such as heavy rainfall and droughts, accelerating soil erosion.
 - According to the **Intergovernmental Panel on Climate Change (IPCC)**, global warming has worsened desertification in the **Sahel region of Africa**.
- **Deforestation:** Clearing forests for **agriculture and urban expansion** leads to loss of vegetation cover, making soil vulnerable to erosion.
 - Since 1980, India has **diverted 1.5 million hectares of forest land for development** and a majority of this loss occurred since 2000.
- **Rapid Urbanization:** Rapid urbanisation has intensified land degradation by contributing to habitat destruction, pollution, and biodiversity loss.
 - The **Delhi-National Capital Region (NCR)** has experienced rapid urban sprawl in areas like Noida, Gurgaon, and Ghaziabad, leading to significant loss of agricultural land.
- **Overgrazing:** **Uncontrolled grazing** by livestock reduces vegetation cover, depletes soil nutrients, and accelerates desertification.
 - The **Thar Desert in India and Pakistan** has expanded due to overgrazing combined with poor land management practices.



Impacts of Land Degradation

- **Reduced Agricultural Productivity:** Declining soil fertility lowers crop yields, increasing the risk of food insecurity.
 - According to the FAO, degraded land reduces **global agricultural productivity by 12%, equivalent to a loss of \$400 billion annually.**
- **Increased Risk of Diseases:** Scarcity of clean water due to land degradation fosters **water-borne diseases like cholera and dysentery.**
 - For example, drought-affected regions in **sub-Saharan Africa** face recurring outbreaks of water-related illnesses.
- **Damage to Marine and Freshwater Ecosystems:** **Fertilizer-laden soil runoff** into rivers and oceans causes algal blooms, depleting oxygen levels and harming aquatic life.
 - The **Ganga River** suffers from **nutrient pollution**, leading to declining fish populations and affecting livelihoods.
- **Contribution to Climate Change:** Degraded soils release stored carbon and nitrous oxide, further exacerbating global warming.
 - Land degradation **reduces carbon sequestration capacity by 20%**, as noted in the UNCCD report.
- **Loss of Biodiversity:** **Habitat destruction** caused by deforestation and **urbanization** threatens wildlife species.
 - For instance, land conversion in the **Amazon rainforest** has endangered species like the jaguar and giant otter.
- **Economic Losses and Livelihood Impacts:** Global economic losses due to land degradation are estimated at **\$10.6 trillion annually, or about 17% of the world's GDP.**
 - Farmers in **Ethiopia** lose **\$4 billion annually** from degraded croplands, further entrenching poverty in rural areas.

Government Measures to Combat Land Degradation and Desertification

- **Desertification and Land Degradation Atlas:** Published by **Space Applications Centre (SAC)** of the Indian Space Research Organisation. Offers **state-wise information** on degraded land to aid restoration planning.
 - Estimated land degradation and desertification in India: **97.84 million hectares in 2018-19.**
- **National Action Plan to Combat Desertification:** This plan aims to:
 - Restore **26 million hectares of degraded land by 2030**
 - Increase forest and tree cover to generate **2.5-3 billion tonnes of CO2 equivalent** by 2030.
- **Afforestation schemes:**
 - The **National Mission for a Green India (GIM) (2014):** One of the eight Missions under the National Action Plan on Climate Change.
 - **The Forest Fire Protection & Management Scheme (FFPM) (2017):** Created to help states deal with forest fires
 - **Compensatory afforestation under CAMPA (2004):** To ensure the efficient and transparent use of funds released for compensatory afforestation.
 - **National Coastal Mission Programme (2014):** To ensure sustainable development of coastal regions.

- **National Afforestation Programme (NAP):** The scheme has been implemented since 2000 on a pan-India basis by the National Afforestation and Eco-Development Board (NAEB).
 - It aims to restore degraded forests and adjoining areas through people's participation.
- **Watershed Development Component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) (2015):** To improve the landscape's ecological rejuvenation and economic growth.
- **Online Portal for Visualization:** Developed in collaboration with Space Application Center (SAC), Ahmedabad.
 - Allows visualization of degraded land areas and the processes causing degradation.
- **Centre of Excellence at ICFRE Dehradun:** Envisioned at the Indian Council for Forestry Research and Education (ICFRE), Dehradun.
 - Focuses on South-South Cooperation for knowledge sharing and best practices.
 - Aims to share India's experiences in sustainable land management.
- **International Cooperation:** India is a party to the UNCCD and actively participates in international efforts to combat desertification.

Way Forward to Address Land Degradation

- **Promote Sustainable Agricultural Practices:** Transitioning to sustainable farming techniques such as agroforestry, crop rotation, and organic farming can reduce soil erosion and chemical pollution.
 - The "Zero Budget Natural Farming" (ZBNF) initiative in India has improved soil health and reduced input costs for farmers.
- **Enhance Reforestation and Afforestation Programs:** Large-scale afforestation projects like India's Green India Mission can restore degraded land while improving biodiversity and carbon sequestration.
- **Adopt Nature-Based Solutions (NbS):** Implementing NbS such as watershed management and wetland restoration can address land degradation while providing co-benefits for water conservation and biodiversity.
 - Kenya's Tana River Basin project reduced erosion and improved local water availability, benefiting both people and ecosystems.

Strengthen Legal and Policy Frameworks: Governments must integrate land degradation mitigation into national policies and enforce land-use regulations.

Leverage Technology and Data for Land Monitoring: Using satellite imagery and GIS can help track changes in land use, identify degradation hotspots, and guide restoration efforts.

- The European Space Agency's Sentinel satellites are monitoring desertification in the Sahel region, aiding targeted interventions.

Mobilize Financial Resources: Scaling up investments through public-private partnerships, green bonds, and repurposing harmful subsidies can address funding gaps.

- As per FAO report, repurposing \$540 billion in annual global agricultural subsidies towards sustainable practices could unlock resources for combating land degradation.

Engage Communities and Strengthen Local Governance: Involving local communities in land restoration efforts ensures ownership, better implementation, and long-term success.

- The Sukhomajri watershed project in India succeeded by incentivizing communities with improved irrigation and drinking water, leading to reduced soil erosion and enhanced forest cover.
- In Ethiopia, community-based land tenure reforms have reduced degradation by empowering locals to manage their lands sustainably.

ARAVALI GREEN WALL

At United Nations Convention to Combat Desertification (UNCCD) CoP16, India showcased its ambitious 'Aravali Green Wall' project to the global community.

Background:

- AGWP, launched in 2023, is a major initiative to green the 5 km buffer area around the Aravalli range in four states.

Key takeaways

- The Aravalli Green Wall Project is part of the Union Environment Ministry's vision to create green corridor to combat land degradation and desertification.
- The project covers states of Haryana, Rajasthan, Gujarat and Delhi - where the Aravalli hills landscape span over 6 million hectares of land.
- The project will involve planting native species of trees and shrubs on scrubland, wasteland and degraded forest land, along with rejuvenating and restoring surface water bodies such as ponds, lakes and streams.
- The project will also focus on agroforestry and pasture development to enhance the livelihoods of local communities.



The major objectives of Aravalli Green Wall Project are:

- Improving the ecological health of the Aravalli range.
- To prevent eastward expansion of Thar Desert and to reduce land degradation by creating green barriers that will prevent soil erosion, desertification and dust storms.
- Promote sustainable development and livelihood opportunities by involving local communities in afforestation, agro-forestry and water conservation activities that will generate income, employment, food security and social benefits.
- Contribute to India's commitments under various international conventions such as UNCCD (United Nations Convention to Combat Desertification), CBD (Convention on Biological Diversity) and UNFCCC (United Nations Framework Convention on Climate Change).

ASHTAMUDI LAKE

The State Level Monitoring Committee (SLMC) appointed by the National Green Tribunal, has recommended implementation of projects in a time-bound manner to check the illegal discharge of waste into Ashtamudi Lake.

Background: -

- A preliminary examination indicates the presence of excessive 'algae bloom', which is the direct result of discharge of biowaste, including septage into the waterbody, SLMC said in its report on the mass fish kill reported in Ashtamudi Lake on October 27.

Key takeaways

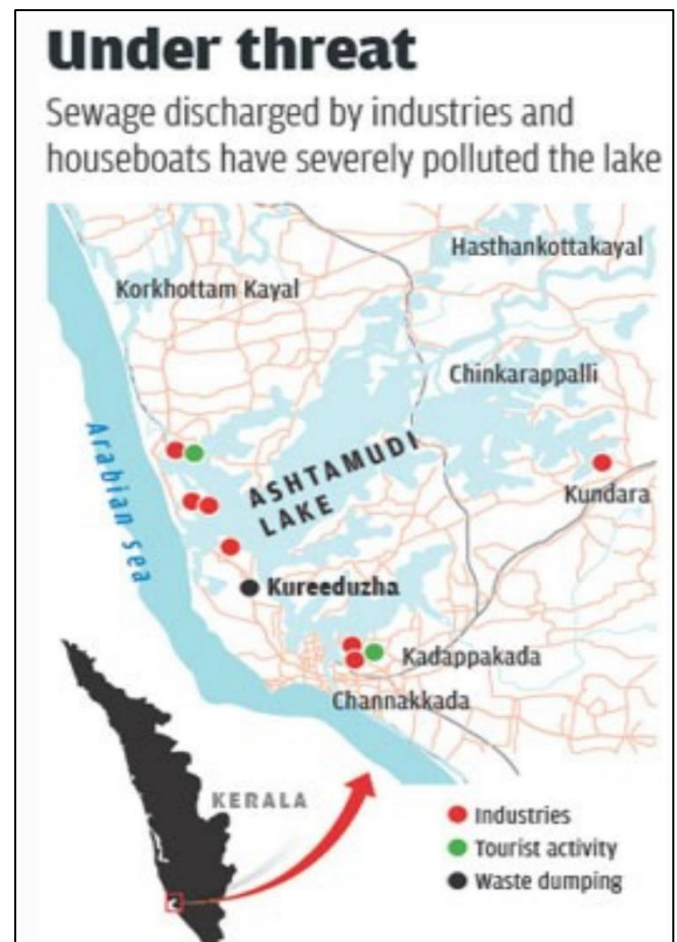
- **Location:** Ashtamudi Lake is situated in the southern part of Kerala, near the city of Kollam.
- **Shape:** The lake is palm-shaped (also described as octopus-shaped) with multiple branches, hence the name "Ashtamudi," which means "eight-hills" in Malayalam.
- **Size:** It is the second-largest lake in Kerala, covering an area of 61.4 square kilometers.

Ecological Significance:

- **Ramsar Wetland:** Ashtamudi Lake is designated as a Ramsar Wetland of International Importance, recognizing its ecological significance.
- **Biodiversity:** The lake supports a rich variety of flora and fauna, including mangroves, marshy vegetation, and various fish species.
- **Water Source:** The primary inflow to the lake is the Kallada River, and it connects to the Arabian Sea through the Neendakara estuary.

Cultural and Historical Importance:

- **Historical Port:** Kollam, located on the banks of Ashtamudi Lake, was an important port city in ancient times, known as Quilon.
- **Trade Hub:** The lake has historical significance dating back to the 14th century, serving as a major trading center.
- **Houseboats:** Ashtamudi Lake is famous for its houseboat cruises, offering a serene experience through the backwaters.



RATAPANI WILDLIFE SANCTUARY

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

Background: -

- This development comes against the backdrop of Madhav National Park (Madhya Pradesh) also receiving approval to be declared a tiger reserve.
- Ratapani is the 57th tiger reserve in India, marking a significant step in tiger conservation efforts.

India gets 57th Tiger Reserve in Madhya Pradesh, Government finally notifies 'Ratapani Tiger Reserve'



Key takeaways

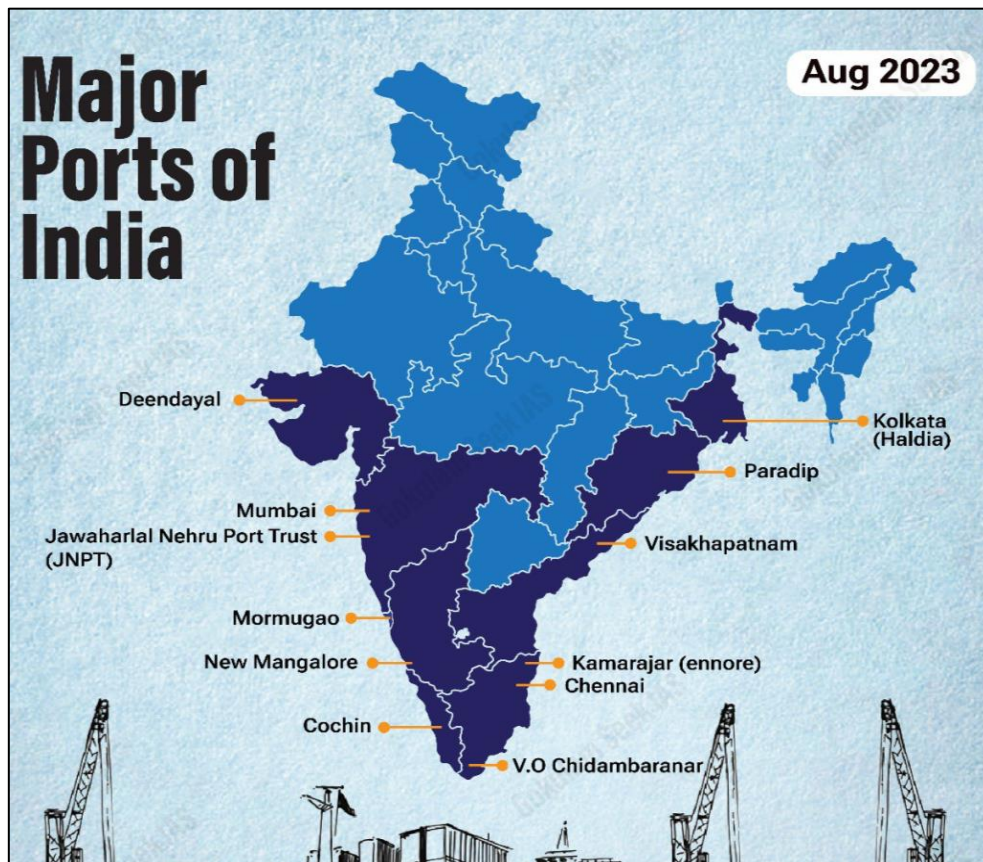
- The notification delineates the core and buffer areas, making Ratapani the eighth tiger reserve in Madhya Pradesh.
- The core area spans 763.8 square kilometers, while the buffer area covers 507.6 square kilometers, making the total area of the Ratapani Tiger Reserve 1,271.4 square kilometers.
- The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

VIZHINJAM SEAPORT

Marking another milestone in the maritime history of the State, the Kerala government will issue the provisional completion certificate for the Vizhinjam international seaport today, marking the beginning of the informal commercial operation of the port.

Background: -

- The port, which began limited-scale operations on July 12 as part of a trial run, has witnessed the docking of a total of 70 cargo ships. Close to 90% of the port infrastructure work has been completed, and the remaining work will be done in the coming months, but it is not a hindrance to the full-scale commercial operations of the port.



Key takeaways

- The Vizhinjam International Seaport is a significant infrastructure project located in Vizhinjam, Thiruvananthapuram, Kerala.
- Location: Situated about 16 kilometers south of Thiruvananthapuram, Kerala.
- It is India's First Deep-Water Container Transshipment Port.

Key Features

- Strategic Location: Just 10 nautical miles from the busy international shipping route connecting Europe, the Persian Gulf, Southeast Asia, and the Far East.
- Natural Depth: The port has a natural depth of 24 meters, reducing the need for extensive dredging.

- Capacity: Designed to handle ultra-large container ships with capacities exceeding 24,000 TEUs (Twenty-foot Equivalent Units).
- Infrastructure: The port will have two breakwaters, a harbor basin, and multiple berths, including a cruise berth.
- Economic Impact: Expected to handle 50% of India’s container transshipment needs currently managed by ports in Dubai, Colombo, and Singapore.

Development and Management

- Developer: The project is a joint venture between the Government of Kerala and Adani Vizhinjam Port Private Limited (AVPL).
- The port is developed in landlord model with a Public Private Partnership component on a design, build, finance, operate and transfer (“DBFOT”) basis.

BALTIC SEA

The Swedish prime minister, Ulf Kristersson, has said the Baltic sea is now a “high risk” zone as he met Nordic and Baltic leaders days after a suspected sabotage attack on undersea cables.

Background: -

- The Swedish PM declined to speculate on who may have been responsible for the severing of two fibre optic telecoms cables in the Baltic. A Chinese ship – the Yi Peng 3 – that sailed over the cables about the time they were severed has remained anchored in the Kattegat strait between Sweden and Denmark since 19 November.



About Baltic Sea

- The Baltic Sea is an arm of the Atlantic Ocean, extending northward from southern Denmark almost to the Arctic Circle. It separates the Scandinavian Peninsula from the rest of continental Europe.
- Boundaries:
 - West: Denmark and the Kattegat Strait connecting it to the North Sea via the Skagerrak.
 - North: Sweden and the Gulf of Bothnia.
 - East: Finland, Russia, and the Gulf of Finland.
 - South: Germany, Poland, Lithuania, Latvia, and Estonia.
 - Countries Bordering the Baltic Sea: Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, and Sweden.
- Brackish water due to limited exchange with the North Sea and high inflow of freshwater from rivers.
- Coastline: Rugged with numerous islands, peninsulas, and gulfs such as the Gulf of Bothnia and Gulf of Finland.
- Major Rivers Flowing into the Baltic Sea: Vistula (Poland), Oder (Germany/Poland), Neva (Russia), and Daugava (Latvia).
- Shipping and Trade:
 - Major shipping routes, linking Central and Eastern Europe to the global economy.
 - Ports like Gdańsk (Poland), Tallinn (Estonia), and St. Petersburg (Russia) are crucial for trade.
- Coastal resorts and historical cities like Stockholm, Helsinki, and Riga attract millions of tourists.

JARAWA TRIBES

In a historic move, the Jarawa tribe of the Andaman and Nicobar has been officially included in India's democratic fold with their enrolment in the electoral roll.

Background: -

- A total of 19 Jarawa tribe members were enrolled. For the first time, members of the Jarawa community will participate in the electoral process.

Key takeaways

- The Jarawa tribe is an indigenous group residing in the Andaman Islands, specifically on the western coast of the South and Middle Andaman Islands.
- Current Population: The Jarawa population is estimated to be between 250 to 400 individuals.
- Historical Population: The population declined significantly during British colonial rule but has since stabilized.
- They are classified as a Particularly Vulnerable Tribal Group (PVTG) due to their small population, primitive technology, and relative isolation.
- Jarawa Language: The Jarawa speak their own language, which is part of the Ongan language family. It is distinct from other languages spoken in the Andaman Islands.
- Lifestyle:
 - Hunter-Gatherers: The Jarawa are traditionally hunter-gatherers. They hunt wild pigs and monitor lizards using bows and arrows, and fish in coastal waters.

- Diet: Their diet includes wild fruits, roots, honey, and fish. They are known for their excellent nutritional health and robust physique.
- Housing: They build temporary huts in their camps and use crude rafts to cross creeks and streams.
- Contact with Outsiders:
 - Historical Isolation: The Jarawa have largely shunned interaction with outsiders until the 1990s.
 - Recent Interactions: Since the 1990s, contact with settled populations has increased, with some Jarawa visiting nearby towns and settlements.



DIGITAL BHARAT NIDHI

Minister of State for Communications, Dr. Pemmasani Chandra Sekhar addressed question regarding Digital Bharat Nidhi in Lok Sabha.

Background:

- Of the more than ₹1.6 lakh crore collected by the central government under the Digital Bharat Nidhi (earlier known as the Universal Service Obligation Fund) until March 31 this year, only 51.4% allocated by the finance ministry has been fully utilised until September 30 this year.

About Digital Bharat Nidhi (DBN)

- The Digital Bharat Nidhi (DBN) is an initiative by the Indian government aimed at enhancing telecom connectivity across rural and underserved areas in the country.

Background:

- Universal Service Obligation Fund (USOF): DBN replaces the erstwhile USOF, which was established to provide telecom services in remote and rural areas at affordable prices through a universal access levy.
- Telecommunications Act, 2023: The DBN was established under this act, which replaced the Indian Telegraph Act.

- **Initiative:** Digital Bharat Nidhi (DBN) draft rules released by DoT on July 4.
- **Objective:** Improve internet connectivity in rural, remote, and poor urban areas.
- **Funding Change:** Replaces Universal Service Obligation Fund (USOF) to enhance phone service accessibility.
- **Target:** Bridging digital divide, ensuring broader access to telecommunications services.
- **Consultation:** Draft rules open for public feedback before finalization.

Objectives:

- **Enhanced Connectivity:** To provide widespread and non-discriminatory access to quality ICT services at affordable prices in rural and remote areas.
- **Targeted Access:** To ensure equitable access to telecommunication services for underserved groups such as women, persons with disabilities, and economically and socially weaker sections.
- **Research and Development:** To fund research and development of telecom services, technologies, and products.

Projects and Schemes:

- **BharatNet:** Connecting Gram Panchayats (GPs) across India.
- **4G Saturation Project:** Expanding 4G coverage to uncovered villages in rural and remote areas.

- Mobile Services in Aspirational Districts: Providing mobile services in uncovered areas of Aspirational Districts.
- Submarine Optical Fiber Cable (OFC) Connectivity: Establishing OFC connectivity between Chennai and Andaman & Nicobar Islands, and between Kochi and Lakshadweep Islands.

Funding:

- Funding: Telecom companies contribute to the DBN through a 5% Universal Service Levy on their Adjusted Gross Revenue (AGR).

PLACES OF WORSHIP ACT

Context: A week after a district court in Sambhal ordered a survey of the Shahi Jama Masjid, the town in western Uttar Pradesh has been rocked with violence. The court's order came in a plea which claimed that Sambhal's Jama Masjid was built on the site of a Hindu temple.

Background: -

- The claim on masjid is similar to claims made in the cases of Gyanvapi mosque in Varanasi, the Shahi Idgah in Mathura etc. The claims in all of these disputes essentially seek to change the religious character of a place of worship, something that is prohibited by the Place of Worship Act, 1991.

Key takeaways

- Purpose: The Act was enacted to prohibit the conversion of any place of worship and to maintain the religious character of any place of worship as it existed on August 15, 1947.

Key Provisions:

- Prohibition of Conversion (Section 3): **No person shall convert any place of worship of any religious denomination or any section thereof into a place of worship of a different section of the same religious denomination or of a different religious denomination or any section thereof.**
- Maintenance of Religious Character (Section 4): **The religious character of a place of worship existing on August 15, 1947, shall continue to be the same as it existed on that day.**
- Exceptions: The Act does not apply to ancient and historical monuments, archaeological sites, and remains covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- It also excludes cases that have already been settled or resolved and disputes that have been resolved by mutual agreement or conversions that occurred before the Act came into effect.
- Penalties (Section 6): Specifies penalties, including a maximum imprisonment term of three years and fines, for violating the Act.

Significance:

- Communal Harmony: The Act was introduced to promote communal harmony and prevent future clashes over religious sites.
- Legal Framework: It provides a legal framework to maintain the status quo of religious places of worship as they existed on Independence Day.
- Exclusion of Ayodhya Dispute: The Act does not extend to the Ram Janmabhoomi-Babri Masjid dispute in Ayodhya, which was already sub-judice at the time the Act was enacted.

ANTHRAX

A female elephant died due to suspected anthrax at the at the Bandipur Tiger Reserve.

Background:

- The incident came to light during the regular patrolling of the forest department staff in the area.

Key takeaways

- Anthrax is a serious infectious disease caused by the spore-forming bacterium *Bacillus anthracis*.
- The bacteria produce spores that can live in the ground for years. Wild animals like deer, and livestock such as cattle or sheep, can inhale or ingest the dormant (inactive) spores while grazing.
- After mixing with bodily fluids, anthrax bacteria activate, multiply and spread throughout body. The bacteria cause a toxic, potentially deadly reaction. The same process happens to people who inhale, ingest or come into skin contact with the spores.
- Anthrax isn't contagious like chickenpox or the flu. Rarely, people develop cutaneous anthrax after coming into direct contact with another person's infected skin lesion.
- Antibiotics are the first line of treatment for this potentially deadly infection. There are other treatments, including a vaccine.
- Types of anthrax: The types of anthrax reflect the different ways the bacteria enter your body.
- Anthrax types include –
 - Cutaneous (skin): Bacteria infect your body through a wound in your skin. Cutaneous anthrax is the most common and least deadly form.
 - Gastrointestinal: This type affects people who eat undercooked or raw meat from an infected animal.
 - Inhalation: People who breathe in anthrax spores can develop this deadly form of anthrax.
 - Injection: People who inject heroin can get injection anthrax.
- Anthrax is found all over the world. Disease outbreaks tend to occur in developing countries that don't vaccinate livestock against the infection.

Is anthrax a biological weapon?

- A bioterrorism anthrax attack using anthrax spores is a possibility.
- In 2001, a U.S. military researcher mailed envelopes containing anthrax powder to members of Congress and the media. Five of the 22 people who developed cutaneous or inhalation anthrax died.

KORAGA TRIBE

The Revenue department in Kerala has initiated steps to provide land titles (patta) to the Koraga community.

Background: -

- The initiative is aimed at addressing longstanding issues of missing land documents and undefined boundaries, which have hindered the Koraga community's access to government housing schemes and left their lands uncultivated and forest-covered.

Key takeaways

- The Koraga tribe is a Particularly Vulnerable Tribal Group (PVTG) found primarily in the southern Indian states of Karnataka and Kerala. Here are some key details about the Koraga tribe:

Geographic Distribution:

- Karnataka: The Koraga tribe is mainly found in the Dakshina Kannada and Udupi districts, often referred to as Tulunaad. They are also present in small numbers in Uttara Kannada, Shimoga, and Kodagu districts.
- Kerala: The tribe is found in the Kasaragod district.
- Current Population: According to the 2011 census, the Koraga population is estimated to be around 16,376.
- Historical Population: The population was recorded as 16,071 in the 2001 census.
- Koraga Language: The Koraga tribe has its own language, which is classified as an independent Dravidian language. However, most Koragas also speak Tulu, Kannada, and Malayalam.
- The Koraga tribe is classified as a Particularly Vulnerable Tribal Group (PVTG) due to their primitive traits, geographical isolation, low literacy, and backwardness.
- Social Structure:
 - Clans: The Koraga tribe is divided into exogamous clans or sects known as balis.
 - Matrilineal Descent: The family structure is matrilineal, with descent reckoned along the female line. However, residence after marriage is patrilocal.
 - Property Inheritance: Property is equally divided among both sons and daughters.
- Economy:
 - Agriculture: The Koragas are primarily agriculturists, relying on forest produce such as bamboo, cane, and creepers for basketry.
 - Livelihood: They also engage in basket-making and other traditional crafts.
- Cultural Practices:
 - Folklore and Music: The Koragas have rich folklore, songs, and folk dances.
 - Rituals: They perform rituals and magics to appease their deities for bountiful crops and to ward off epidemics.
 - Bhuta Worship: They worship various Bhas (deities) such as Panjurli, Kallurti, Korathi, and Guliga.

APAAR ID

Several state governments are introducing the Automated Permanent Academic Account Registry (APAAR), which is part of the 'One Nation, One Student ID' program and stems from the 2020 National Education Policy. The system aims to streamline academic record tracking and secure document management.



Overview of APAAR

APAAR provides students with a unique, lifelong ID that tracks their educational journey from preschool to higher education. Each student receives an APAAR ID linked to the Academic Bank Credit (ABC), a digital platform that securely stores credits and certificates.

Integration with Digilocker

The APAAR system connects with Digilocker, which allows students to access important documents online. Students can view exam results and certificates without needing physical copies.

Addressing Certificate Issues

Launched under the National Education Policy 2020, APAAR combats issues like fake or duplicate certificates. Only authorised institutions can add data to a student's account. This ensures reliability for students and educational institutions.

Key Features

Each student receives a unique ID, which facilitates easy transfer of academic records when changing schools. Optional Aadhaar integration verifies student details. Parental consent is required for students under 18 for Aadhaar-based verification.

Some parents express concerns about privacy and data misuse. The government assures that all data will be secure and used solely for educational purposes. Parents and students can withdraw consent at any time to halt further data sharing.

Joining APAAR

To join APAAR, students must provide basic information. This includes name, age, date of birth, gender, and a photograph. Aadhaar verification is optional and requires parental approval for minors.

The government guarantees that data sharing with other systems, like UDISE+, occurs only with explicit consent. Students can choose to stop data sharing whenever they wish, ensuring control over their personal information.

ANNA CHAKRA

The Government of India has introduced an innovative tool, 'Anna Chakra' to enhance the Public Distribution System(PDS), which aims to streamline food supply chains and improve subsidy processes.

Introduction of Anna Chakra

Anna Chakra is a new tool launched by Food and Public Distribution Minister Pralhad Joshi. It is designed to optimize the logistics of the PDS. This tool will facilitate the efficient movement of food grains across India, which aims to enhance the overall efficiency of the supply chain.

Benefits of Anna Chakra

The tool will modernize PDS logistics, which will allow for better route optimization. This means quicker and more efficient transportation of food grains. The focus is on reducing delays and improving service delivery.

Launch of SCAN Portal

The government also introduced the Subsidy Claim Application for the National Food Security Act (SCAN). This portal automates subsidy processes. It will streamline the release and settlement of food subsidies for states. The aim is to reduce bureaucratic hurdles and improve access to funds.

Goals of the New Initiatives

The primary goals include enhancing transparency in the PDS, which aim to boost accountability in food distribution. They are also focused on modernising subsidy claim processes. This will help states manage resources more effectively.

During the launch, Minister Joshi emphasised the importance of these tools. He stated that they will improve the PDS framework. The initiatives are part of a broader strategy to modernise food distribution in India. The government is committed to ensuring food security for all citizens.

INDIA TO CHAIR 68TH SESSION OF UN COMMISSION ON NARCOTIC DRUGS

India has achieved a significant milestone by being named to chair the **68th Session of the UN Commission on Narcotic Drugs (CND)**, marking the first time the country has been chosen for this prestigious role. **Ambassador Shambhu S Kumaran**, India's Permanent Representative to the **United Nations in Vienna**, officially assumed the chairmanship of this crucial forum.

- The CND, a key policy-making body of the UN, focuses on addressing global drug-related issues and promoting international collaboration on drug control measures.



Role of the UN Commission on Narcotic Drugs (CND)

- The CND is responsible for monitoring global drug trends, advising member states on drug policy, and overseeing the implementation of international drug conventions. It serves as a governing body of the **United Nations Office on Drugs and Crime (UNODC)**, based in **Vienna**, and is a functional commission of the **UN Economic and Social Council (ECOSOC)**.

India's Leadership and Responsibilities

- India's new role as Chair reinforces its growing leadership in global forums. As Chair, India aims to represent the interests of the Global South, ensuring that the voices of developing nations are heard in global drug policy discussions.
- The country is expected to foster dialogue, promote balanced approaches, and integrate concerns of emerging economies with developed nations.

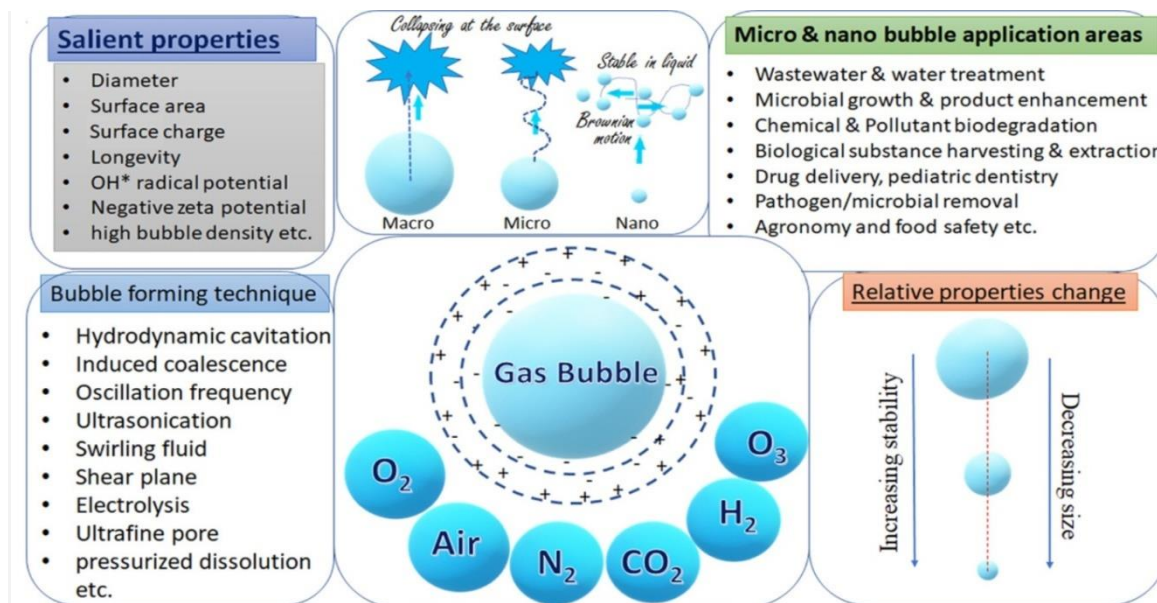
Focus Areas of the 68th Session

- The 68th session's agenda will prioritize international collaboration to address pressing issues like illicit drug trafficking, substance abuse, and health-related impacts.
- India will work to strengthen evidence-based solutions, enhance access to controlled substances for medical and scientific purposes, and continue its commitment to equitable, inclusive, and sustainable strategies in addressing these challenges.

NANO BUBBLE TECHNOLOGY

The Delhi Zoo has initiated a trial for a new water purification technology, which aims to enhance the health of aquatic animals and improve pond conditions.

Nano Bubble Technology: This innovative technology generates tiny bubbles that dissolve in water. It enhances oxygen levels, purifies water, and reduces pollutants, revolutionising water management in zoos.



Importance of Clean Water

Clean water is vital for the health of aquatic animals. Polluted water can emit foul odors and promote algae growth. Algae can obscure visibility and create murky conditions. Clear water helps maintain the ecosystem and supports animal well-being.

Nano Bubble Technology

Nanobubble technology generates tiny bubbles that dissolve in water. These bubbles enhance oxygen levels and purify the water. They can effectively reduce pollutants and improve water clarity. This technology is innovative and aims to revolutionize water management in zoos.

Current Pond Conditions

The Delhi Zoo has four ponds. One pond contains three gharials, while the other three house marsh crocodiles. Presently, these ponds face issues like bad smells and algae accumulation. Such problems hinder visibility, making it challenging for visitors to see the animals.

Expected Benefits of the Trial

If successful, the technology will be implemented on a larger scale. Cleaner water will improve the habitat for aquatic animals. Visitors will enjoy enhanced viewing experiences. The goal is to create a safe and visually appealing environment for both animals and guests.

This trial marks the first use of nano bubble technology in a zoo setting. Successful outcomes could lead to broader applications in wildlife conservation. Cleaner aquatic environments may also inspire similar initiatives in other zoos across the country.

PMGDISHA

The Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) aims to empower rural households, which targets training one individual from each of the 6 crore rural homes. On March 31, 2024, over 6.39 crore individuals have been trained, surpassing expectations.



PMGDISHA Overview

PMGDISHA is a flagship programme focused on digital literacy in rural India, which seeks to bridge the digital divide. The initiative empowers citizens to access digital services and resources and training is provided through local centres established nationwide.

Job Creation Schemes

The India BPO Promotion Scheme (IBPS) supports job creation in smaller towns and offers financial assistance of up to ₹1 lakh per seat for BPO units.

The North East BPO Promotion Scheme (NEBPS) aims to boost employment in the northeastern states. Both schemes encourage local entrepreneurship and promote inclusivity by hiring women and disabled individuals.

India's IT Leadership

India has emerged as a global leader in IT skills. Stanford University Ranks India among the top four countries in AI vibrancy. This recognition marks India's growing influence in technology sectors. The government is committed to maintaining this competitive edge through various initiatives.

FutureSkills PRIME Programme

The FutureSkills PRIME programme focuses on re-skilling and up-skilling, addresses the demand for expertise in emerging technologies. Key areas include Blockchain, AI, Robotics, Augmented Reality, Big Data, Cloud Computing, and Cyber Security. This initiative ensures that the workforce remains relevant in a rapidly evolving digital landscape.

The India AI Mission offers fellowships for B.Tech and M.Tech students. These fellowships are available to students from AICTE-approved engineering colleges. They aim to encourage talent in artificial intelligence and related fields. This initiative supports the growth of a skilled workforce for the future.

Training Centres in Haryana

Training centres under the PMGDISHA scheme have been established in Haryana. The Bhiwani-Mahendergarh districts are among the locations. These centres provide essential digital skills training to local residents. They play an important role in promoting digital literacy in rural areas.

MULE HUNTER.AI

The Reserve Bank of India's innovation unit, RBIH, has introduced MuleHunter.AI, which aims to combat financial fraud effectively and specifically targets mule accounts used in illegal activities.

Recent statistics show that online financial frauds account for 67.8% of cybercrime complaints, putting stress on the pressing need for advanced fraud detection tools.

About Mule Accounts

Mule accounts are bank accounts exploited by criminals, which facilitate the movement of stolen or illegal funds. Individuals often open these accounts due to misleading promises of easy money. In some cases, people are coerced into opening them. Mule accounts are frequently linked to various fraudulent activities, complicating the tracing and recovery of funds.

The Need for Advanced Detection

Traditional fraud detection methods often fall short. They tend to generate high false alarms and operate slowly. This inefficiency allows many fraud cases to go undetected.

RBIH collaborated with banks to analyze existing methods. They identified 19 distinct patterns of mule account behavior. This analysis was crucial for developing a more effective solution.

Features of MuleHunter.AI

MuleHunter.AI employs machine learning techniques, which enhances both detection accuracy and processing speed. The tool scrutinises transaction data and account details.

It identifies suspicious activities more effectively than older systems. By monitoring the flow of illegal funds, it aids banks in quickly spotting fraud.

Impact on Financial Security

The introduction of MuleHunter.AI signifies a shift towards innovative technology, which plays a vital role in addressing complex financial crimes. This initiative represents advancement in creating a safer financial system. The collaboration between RBIH and banks marks a proactive approach to fraud prevention.

MEKONG GANGA DHAMMAYATRA PILGRIMAGE

A group of over 20 Buddhist scholars and citizens from Thailand recently arrived in Delhi, which marks the 4th Mekong Ganga Dhammayatra pilgrimage.

The event aims to enhance connections between the Mekong and Ganga civilizations, led by Dr. Supachai Viraphuchong, a notable figure in promoting cooperation between Thailand and India.

Purpose of the Pilgrimage

The pilgrimage seeks to spread the message of Dhamma globally, which focuses on promoting peace and environmental awareness. The event is organized by BodhiGayaVijjalaya 980, with support from various Indian and Thai organizations.

Cultural Connections

Dr. Supachai emphasized the close ties between Buddhist and Hindu cultures. He believes both share common values rooted in Dhamma. He envisions cooperation among Thailand, Vietnam, Cambodia, Laos, and India.

Leadership and Vision

Dr. Supachai brought into light Indian Prime Minister Narendra Modi's support for this initiative. He referenced Modi's vision of the 21st century as the "Asian Century." Dhamma principles are seen as vital for connecting Asian nations.

Dr. Supachai spoke about the need for compassion in addressing global issues. He advocates for moral living and helping the underprivileged. His experiences as a monk influence his commitment to spreading Dhamma.

Historical Context

The "Declaration on Dhamma Century" aligns with PM Modi's vision. This pilgrimage follows the successful third Ganga-Mekong Yatra. Previous events have brought into light the cultural bond between India and Thailand.

Dr. Sacchidananda Joshi proposed a Mekong Ganga Museum. This museum would showcase the shared heritage of these civilizations. The Thai Ambassador praised the Yatra for deepening ties and promoting Dhamma diplomacy.

Commemoration and Legacy

The 4th Dhamma Yatra commemorates the 97th birth anniversary of King Bhumibol Adulyadej. It celebrates the ongoing efforts to unite countries through shared Dhamma values. The initiative transcends geopolitical, religious, and cultural differences.

SHe-BOX PORTAL

The SHe-Box portal has been launched to address workplace sexual harassment, which is part of the government's commitment to creating safer work environments and it has been operational since October 19, 2024.

The Ministry of Women and Child Development developed this platform, which aims to streamline the complaint process across various sectors.

Purpose of SHe-Box

SHe-Box serves as a centralized system for lodging complaints, which provides information about Internal Committees (ICs) and Local Committees (LCs). These committees are essential for addressing harassment cases in workplaces.

How to File a Complaint

Women facing harassment can file complaints directly. A representative can also file on their behalf. Complainants must log in to the portal. They need to provide the necessary personal details. Privacy is a priority; complainant information remains confidential.

Nodal Officer's Role

Each workplace must appoint a nodal officer, updates complaint data regularly. Their role is crucial for tracking complaints in real-time, also help ensure that the process runs smoothly.

Complainants select the appropriate IC or LC for their workplace. If the committees are registered, complaints go directly to them. If not, the portal prompts for additional workplace details. It alerts state and district officers to register the committee.

Monitoring and Reporting

The portal features a dashboard for nodal officers. They can monitor the number of complaints filed, resolved, and pending. Complainants can also track their case status. The system generates reports to ensure timely resolutions.

Legal Compliance

SHe-Box complies with the Sexual Harassment of Women at Workplace Act, 2013. This law mandates investigations within 90 days. All complaint details are confidential and accessible only to the committee chairperson. The SHe-Box portal represents advancement in addressing workplace harassment. It empowers women to voice their concerns safely and effectively.

IDRA

The International Drought Resilience Alliance (IDRA) was launched on November 7 during the 27th Conference of Parties (COP27) to the United Nations Framework Convention on Climate Change (UNFCCC).

What is IDRA?

Spain and Senegal jointly launched the IDRA to promote cooperation to increase preparedness against future droughts. The Alliance has 30 countries and 20 organisations. It seeks to create a shift in how the world responds to the growing drought risks by moving away from emergency responses to creating a long-term resilience.

Why in News?

The International Drought Resilience Alliance (IDRA) was launched during the ongoing to the UNFCCC in Egypt.

#UPSC #CSE

About

Launch: It was launched by a group of several countries & organizations led by Spain & Senegal.


- The IDRA was first announced by Spain at the **77th session of the UNGA.**

Objectives

- Give political impetus to make the land's resilience to drought and climate change a reality **by 2030.**
- The alliance will help countries to be better prepared for future droughts.

Significance

- The alliance is significant as there is **no global convention** for land, other than UNCCD, which mostly focuses on desertification.
- The alliance is now being seen as a **'specific solution'** for the United Nations to the impacts of climate change.



The IDRA was first announced by Spain at the 77th session of the UNGA in September this year. This grouping will make drought resilience a priority in the national development. It will also provide platform for sharing drought-related technology and expertise. It will be collaborating with other international platforms to achieve the universal coverage of early warning systems and regional initiatives to achieve maximum benefits.

The establishment of the IRDA is significant since there are no conventions for land other than the UNCCD, which mainly focuses on desertification. This alliance provides a “specific solution” for the UN to mitigate the impact of droughts.

Political commitments, including the 5 million euro (Rs 40.76 crore) seed fund announced by Spain, will fund the works of the IRDA. It will help the alliance to mobilize additional resources to achieve the goal of making the world resilient to drought by the end of this decade.

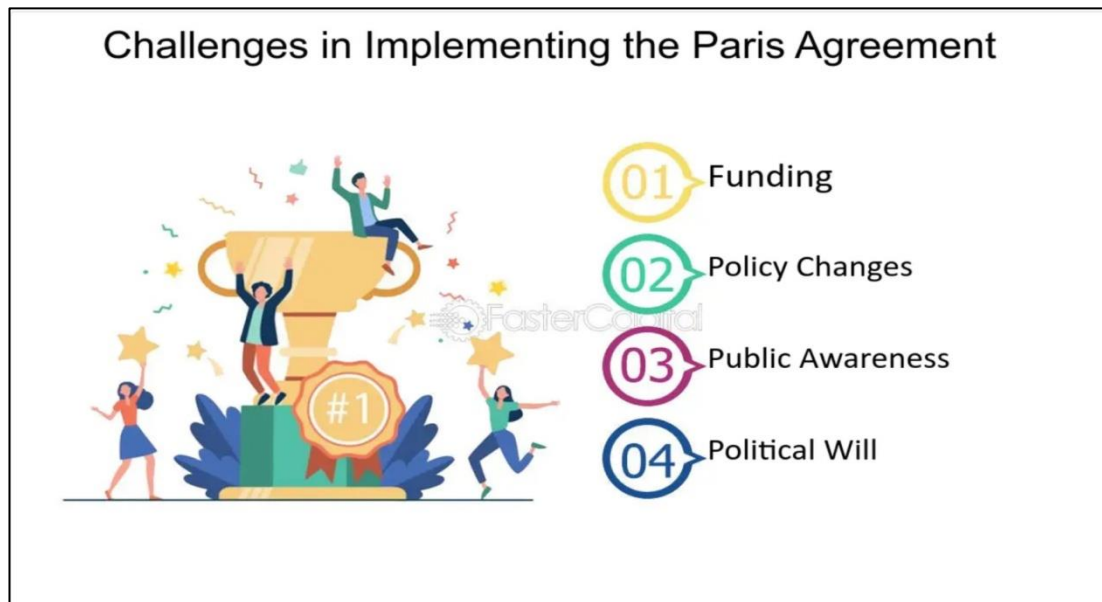
The recent occurrences of droughts have been more frequent and severe. According to the Drought in Numbers report compiled by the United Nations Convention to Combat Desertification (UNCCD), the frequency of droughts has surged by 29 per cent since 2000. Over 55 million people are affected each year. This year’s droughts in Europe, the United States, Australia, Chile, the Horn and Southern Africa showed that no country can escape the impact of droughts.

9 YEARS OF PARIS AGREEMENT

The Paris Agreement was supposed to save the world from the worst impacts of climate change. But nine years after it was finalised – on December 12, 2015 – it is perhaps more fragile than ever, appearing increasingly ineffective and helpless in containing worsening climate situation.

Background: -

- The main goal of the Paris Agreement – holding global annual average temperatures within 1.5 degree Celsius of pre-industrial averages, two degrees Celsius in the worst case scenario – seems more distant than ever.



Key takeaways

- In the nine years, annual global emissions have grown 8% from about 49 billion tonnes of CO2 equivalent to 53 billion tonnes.
- Average annual global temperatures have increased from 1.1 degree Celsius above the pre-industrial average to 1.45 degree Celsius above that level.

Erosion of Trust Among Developing Nations

- **Unmet Financial Obligations:**
 - Developed countries failed to meet the \$100 billion annual climate finance goal by 2020.
 - A finance deal in Baku only proposed increasing this to \$300 billion by 2035, which is grossly inadequate given the trillions needed annually by developing nations.
- **Equity Concerns:**
 - The Paris Agreement replaced the Kyoto Protocol, which held developed countries primarily accountable for emissions reductions.
 - The Kyoto Protocol had assigned specific emissions reduction targets on developed countries, but placed virtually no responsibilities on the rest of the world.
 - The Paris Agreement mandated everyone to take climate actions, but only in a “nationally-determined” manner, essentially freeing developed countries of their assigned responsibilities.

Geopolitical Dimensions

- **Role of Developed Nations:**
 - Developed nations have consistently resisted stringent climate obligations, fearing economic repercussions.
 - The United States’ potential withdrawal under Donald Trump’s presidency could further weaken global climate action.
- **Emerging Economies:** The growing economic power of countries like China has shifted the climate narrative, with developed nations demanding greater contributions from such nations while ignoring their historical emissions.

Alternative Strategies by Developing Nations

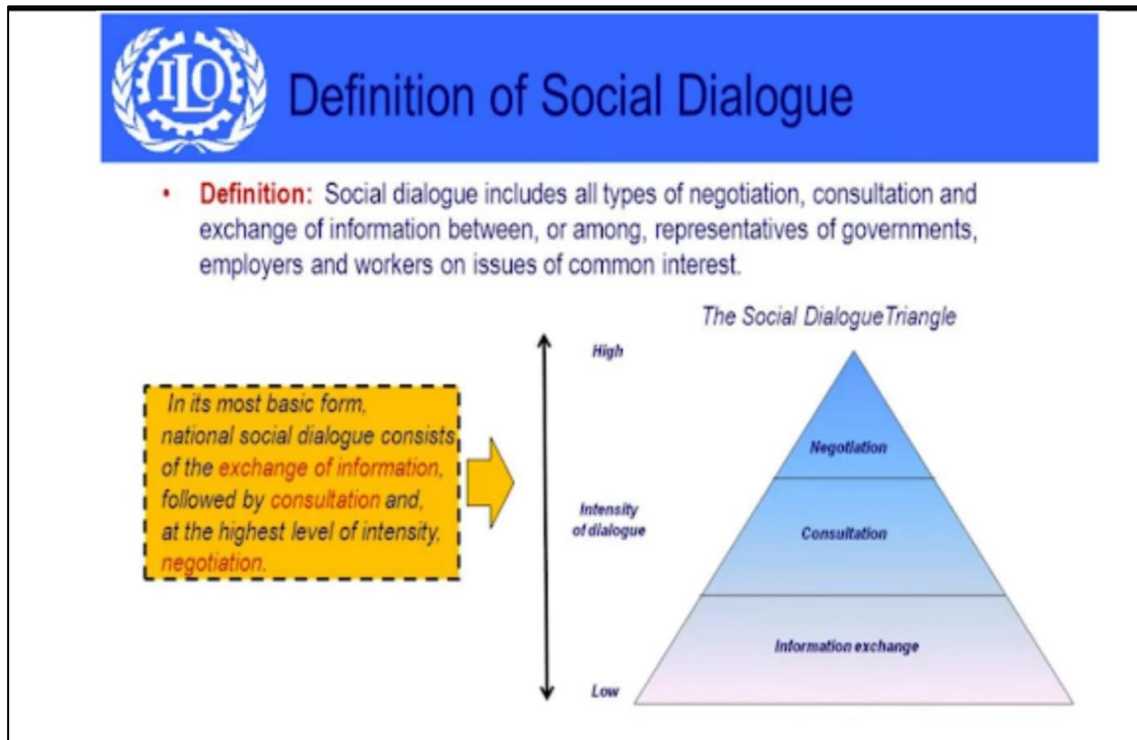
- **Vanuatu’s Initiative:** The resolution passed by the UN General Assembly to seek the ICJ’s advice on defining countries’ climate obligations is a significant step by vulnerable nations.
- **Small island nations** aim to establish clearer legal consequences for failing to meet climate commitments.

SOCIAL DIALOGUE REPORT

The Social Dialogue Report of the International Labour Organisation (ILO), released recently, has recommended the governments to uphold fundamental principles and rights at work, especially freedom of association and the effective recognition of the right to collective bargaining.

Background: -

- Report found that countries’ compliance with freedom of association and the effective recognition of the right to collective bargaining had deteriorated by 7% between 2015 and 2022.



Key takeaways

What is Social Dialogue?

- Definition: Social dialogue refers to discussions, consultations, negotiations, and other interactions between governments, employers, and workers on issues related to economic and social policy.
- Purpose: To promote consensus-building, resolve workplace conflicts, and ensure equitable economic and social development.
- The International Labour Organisation (ILO), a United Nations agency, champions social dialogue as one of its four strategic objectives under the Decent Work Agenda.
- The Social Dialogue Report provides a global perspective on:
 - The effectiveness of social dialogue in different countries.
 - The role of tripartite structures (governments, employers, and workers) in promoting decent work.
 - Best practices and challenges in achieving workplace harmony.

Highlights of the Latest Social Dialogue Report:

- The report has highlighted the experience of Rajasthan that brought in the Platform Based Gig Workers (Registration and Welfare) Bill to provide for the establishment of the Rajasthan Platform Based Gig Workers Welfare Board.
- The report argues that social dialogue can enable countries to pursue economic development alongside social progress, while ensuring fair and inclusive low-carbon and digital transitions.
- The ILO has also recommended the national social dialogue institutions (NSDI) of various countries to expand their outreach to under-represented groups.

PORT OF LATAKIA

Israel Defense Forces (IDF) has attacked Syria's naval fleet at the ports of Al-Bayda and Latakia.

Background:

- Attacks are part of Israel's effort to neutralise military assets in the country after the fall of the Assad regime.



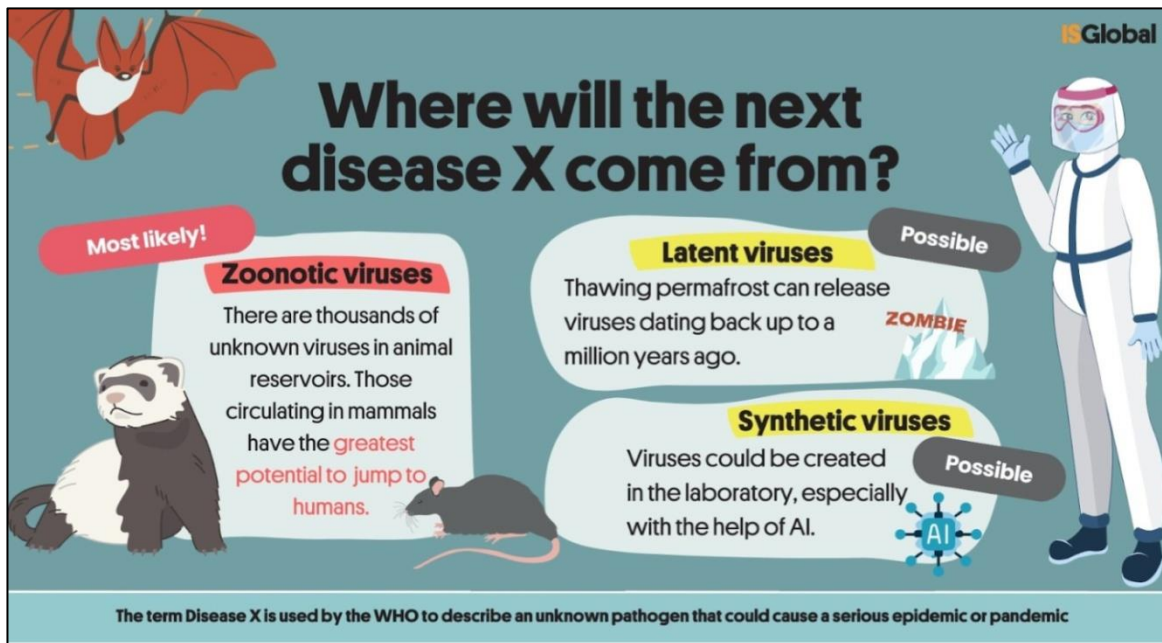
- The Port of Latakia is a significant seaport located on the Mediterranean coast in the city of Latakia, Syria.
- When Syria became independent in 1945 it was the only seaport in the country.
- Since 2019, Iran leases parts of the port of Latakia for civilian and military use. This was followed closely by Russia, which operates its only naval base in the Mediterranean in nearby Tartus.

DISEASE X

The recent outbreak reported in the first week of December 2024 in the Democratic Republic of Congo, which has claimed over 400 lives and remains unclassified, has raised concerns that it could be an instance of Disease X.

Background:

- While investigations continue to determine the cause in Congo, the outbreak underscores the importance of Disease X.



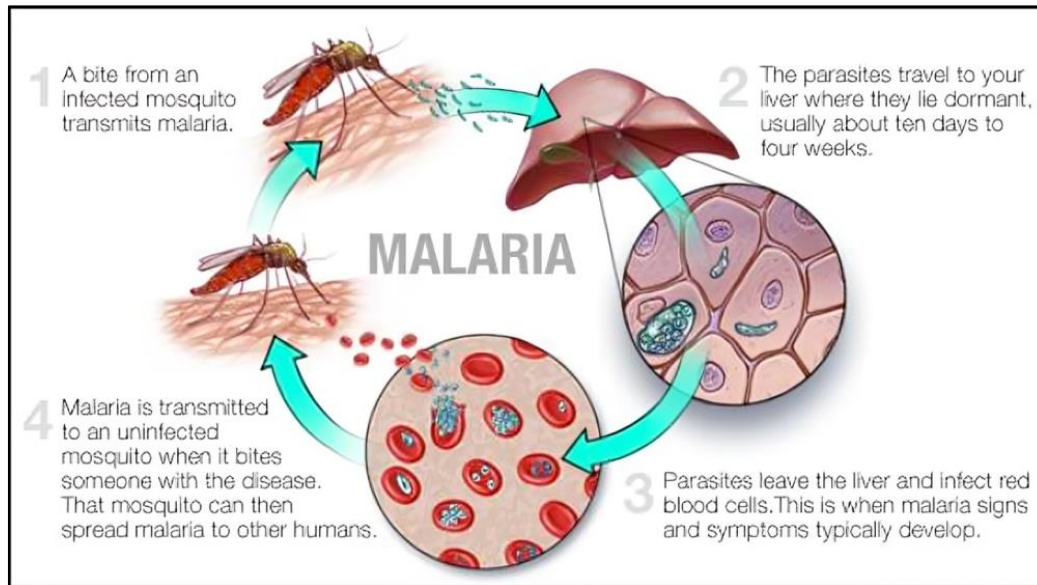
Key Concerns:

- Disease X is not an actual but a hypothetical disease or in other words, disease X is not a specific illness but a placeholder for an unpredictable and as-yet-undiscovered pathogen capable of sparking a global health crisis.
- The World Health Organization (WHO) coined the term in 2018.
- It was conceptualised by the WHO to prepare for future outbreaks that are difficult to predict or identify.
- COVID-19 is widely regarded as the first instance of a real Disease X. When SARS-CoV-2 emerged as an unknown pathogen causing a global pandemic, it exemplified the scenario that Disease X was meant to represent – an unpredictable, novel threat requiring rapid global response and adaptation.
- Forecasting the next Disease X is daunting, as its emergence depends on numerous unpredictable factors.
- Zoonotic diseases are the most likely source, given their history of driving major epidemics.
- However, other scenarios, such as pathogens mutating to evade treatment, laboratory mishaps, or deliberate biological attacks, cannot be ruled out.

WORLD MALARIA REPORT

According to the World Malaria Report 2024 by WHO, the South East Asia Region contributes about 1.5% of global malaria cases, with India accounting for nearly half of all estimated cases in the region in 2023.

- New data from the WHO revealed that an estimated 2.2 billion cases of malaria and 12.7 million deaths have been averted since 2000, but the disease remains a serious global health threat, particularly in the WHO African Region.



About Malaria

- Malaria is a life-threatening disease caused by Plasmodium parasites, transmitted to humans through the bites of infected female Anopheles mosquitoes.
- Not all Anopheles mosquitoes have malaria, but if they bite a person with malaria, they can become infectious.
- People do not spread malaria to other people, like the common cold or the flu. Also, malaria is not sexually transmitted.
- Because the parasites that cause malaria affect red blood cells, people can catch malaria from exposure to infected blood, including:
 - From mother to unborn child
 - Through blood transfusions
 - By sharing needles used to inject drugs.

Symptoms

- Fever, chills, headaches, muscle pain, vomiting.
- Severe cases: Organ failure, cerebral malaria, or death.
- Global Initiatives: WHO's Global Technical Strategy for Malaria (2016-2030) aims to reduce global malaria cases by 90% by 2030.

India's Measures:

- National Malaria Control Programme (NMCP): Aims to eliminate malaria by 2030.
- National Vector Borne Disease Control Programme (NVBDCP): Comprehensive approach to combat mosquito-borne diseases.
- Use of insecticide-treated bed nets (ITNs), indoor residual spraying (IRS), and rapid diagnostic tests (RDTs).

Vaccination:

- RTS,S/AS01 (Mosquirix): First malaria vaccine approved by WHO in 2021 for pilot projects in high-burden regions.

CASPIAN SEA

Kazakhstan's state-owned energy company said recently that it had decontaminated Soviet-era oil waste on the shores of the Caspian Sea.

Background: -

- In Central Asia, work to remove toxic waste dating back to Soviet times has gathered pace in recent years, particularly in Tajikistan and Kyrgyzstan, where millions of cubic metres of radioactive waste are stored.



- Location: Lies between Europe and Asia, bordered by five countries: Russia, Kazakhstan, Turkmenistan, Iran, and Azerbaijan.
- Unique Feature: Largest enclosed inland water body, often called a sea due to its size and salinity.

Geographical Features

- Salinity: Lower than seawater but higher than freshwater.
- Important Rivers: Volga, Ural, and Kura rivers flow into the Caspian Sea.

Economic Importance

- Energy Resources: Rich in oil and natural gas reserves, contributing significantly to regional economies.
- Fishing Industry: Famous for sturgeon and caviar production.
- Trade and Transportation: Strategic hub for trade routes connecting Europe and Asia.

Environmental Significance

- Biodiversity: Home to unique species, including the endangered Caspian seal.
- Environmental Concerns: Pollution from oil exploration, industrial activities, and declining water levels due to climate change.

IMPEACHMENT AGAINST VICE PRESIDENT

In an unprecedented move, about 60 Opposition MPs belonging to the INDIA bloc submitted a notice in New Delhi on Tuesday at the Rajya Sabha Secretary General P.C. Mody's office, seeking the removal of the Chairperson of the Upper House, Vice President Jagdeep Dhankhar.

Background: -

- Alleging that Mr. Dhankhar, since assuming the office of Chairperson of the Rajya Sabha, had conducted the proceedings in an "extremely biased" manner, the Opposition members also presented a six-point "charge-sheet" against him in the notice.

Key takeaways

- The Vice President of India can be removed from office through a resolution passed by Parliament under Article 67(b) of the Constitution. While often referred to as "impeachment," the process for the Vice President's removal is distinct from the impeachment process for the President.

Constitutional Provisions

- Article 63: Establishes the office of the Vice President.
- Article 64: States that the Vice President is also the ex-officio Chairman of the Rajya Sabha.
- Article 67(b): Outlines the removal procedure of the Vice President.

Procedure for Removal :

- Initiation:
 - The removal resolution must be moved in the Rajya Sabha.
 - The motion must be signed by at least one-fourth of the total members of the Rajya Sabha.
- Notice Period: A 14-day prior notice is required before the motion is taken up for consideration.

Special Majority:

- The resolution must be passed by a majority of all members of the Rajya Sabha whose seats are not vacant and agreed to by the Lok Sabha through a simple majority (majority of members present and voting).

Grounds for Removal :

- The Constitution does not specify the grounds for the removal of the Vice President. It is left to the discretion of Parliament, making the process political rather than judicial.

Comparison with Presidential Impeachment

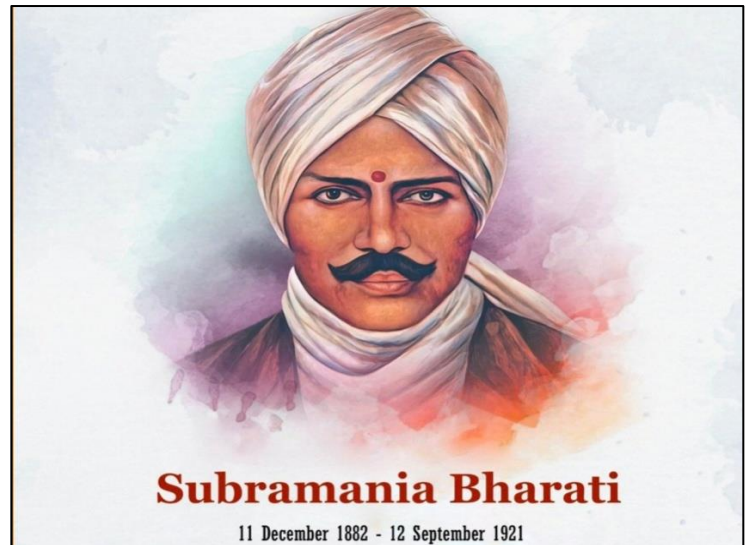
- Impeachment of the President (Article 61) involves:
 - Judicial Inquiry: Charges of violation of the Constitution.
 - Special Procedure: A more stringent process requiring two-thirds majority in both Houses.
 - In contrast, the removal of the Vice President is simpler and purely a parliamentary procedure.

C.SUBRAMANIA BHARATI

A complete and annotated version of the works of C. Subramania Bharati will be released by Prime Minister Narendra Modi.

Background: -

- The release will be the first time that the writings of Mr. Bharati, a prominent leader of the Independence movement and a prolific writer and poet, are compiled in one place. Mr. Bharati's writings were nationalised by the Madras government in 1949, a rare honour.



Key takeaways

- Subramania Bharati, also known as Bharathiyar, was a renowned Indian writer, poet, journalist, teacher, Indian independence activist, social reformer, and polyglot.

Early Life:

- Birth: Born on December 11, 1882, in Ettayapuram, Tirunelveli district, Madras Presidency (present-day Thoothukudi district, Tamil Nadu).
- Education: Bharati had his early education in Tirunelveli and later lived in Varanasi, where he was exposed to Hindu theology and new languages.
- He considered Sister Nivedita, a disciple of Swami Vivekananda, as his guru.

Career and Contributions:

- Journalism: Bharati worked as a journalist with several newspapers, including Swadesamitran, The Hindu, Bala Bharata, Vijaya, Chakravarthini, and India.
- He belonged to the Extremist wing of the Indian National Congress.
- Exile: In 1908, the British Government issued an arrest warrant for Bharati, leading him to live in exile in the French-controlled Pondicherry for about ten years until 1918.
- Literary Works: Bharati was a pioneer of modern Tamil poetry and wrote extensively on political, social, and spiritual themes.
- Some of his notable works include PanjaliSabatham, Kannan Paatu, KuyilPaatu, PaapaPaatu, ChinnanchriuKiliye, VinayagarNanmanimalai, and Tamil translations of Patanjali's Yoga Sutra and Bhagavat Gita.

Social Reforms:

- Women's Emancipation: Bharati fought for the emancipation of women and opposed child marriage.
- Caste System: He opposed the caste system and advocated for social reforms.
- Religious Reforms: Bharati promoted reforms in society and religion, emphasizing the importance of unity and equality.

AMRIT GYAANKOSH

Union Minister Dr. Jitendra Singh launched "Amrit GyaanKosh" Portal to strengthen governance training.

Background: -

- The Minister underscored the importance of Amrit GyaanKosh as more than a repository – it is a platform to promote self-reliance in governance training.

Key takeaways

- The Amrit GyaanKosh portal is a comprehensive repository designed to strengthen governance training and capacity building for public administrators in India.
- Development: It is jointly developed by the Capacity Building Commission and Karmayogi Bharat.
- Platform: The portal is hosted on the iGOT (Integrated Government Online Training) platform.

Purpose:

- Governance Training: The primary aim is to enhance governance training by providing a repository of best practices and case studies.
- Self-Reliance: It promotes self-reliance in governance training by offering indigenous resources.
- Global Standards: The resources align with global standards while addressing India's unique administrative challenges.

Content:

- Case Studies: The portal features case studies that bridge the gap between theory and practice in governance training.
- Teaching Notes: It includes teaching notes to help educators develop structured case studies and enhance their teaching methods.
- Policy Themes: The repository covers diverse policy themes such as health, education, agriculture, and digital governance.

Significance:

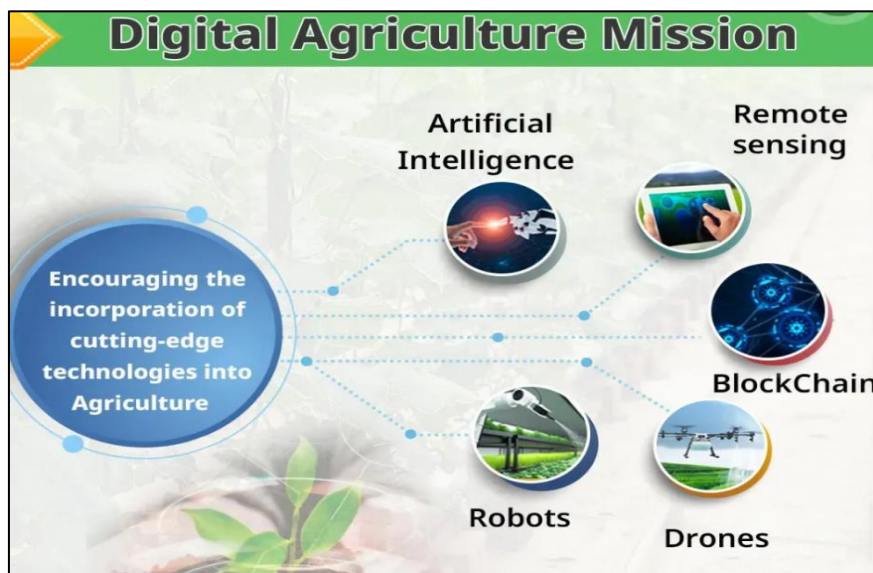
- Sustainable Development Goals: The portal aligns with 15 of the 17 Sustainable Development Goals (SDGs).
- Collaboration: It fosters collaboration and innovation across academies and sectors.
- Transformative Outcomes: The initiative aims to empower educators and public administrators with advanced skills in case writing and teaching methodologies.

DIGITAL AGRICULTURE MISSION

Gujarat became the first State in the country to generate Farmer IDs for 25% of the targeted number of farmers in the State. The Farmer ID is part of Digital Agriculture Mission.

Background: -

- A Farmer ID is a unique digital identity of farmers based on Aadhaar, linked dynamically to the State's land records system, which means the Farmer ID gets automatically updated with the changes in the land record details of an individual farmer.
- The Digital Agriculture Mission is designed as an umbrella scheme to support various digital agriculture initiatives. These include creating Digital Public Infrastructure (DPI), implementing the Digital General Crop Estimation Survey (DGCES), and supporting IT initiatives by the Central Government, State Governments, and Academic and Research Institutions.



- The scheme is built on two foundational pillars:
 - Agri Stack
 - Krishi Decision Support System.
- Additionally, the mission includes 'Soil Profile Mapping' and aims to enable farmer-centric digital services to provide timely and reliable information for the agriculture sector.

AGRISTACK: KISANKIPEHCHAAN :

AgriStack is designed as a farmer-centric Digital Public Infrastructure (DPI) to streamline services and scheme delivery to farmers. It comprises three key components:

- 1. Farmers' Registry
 - 2. Geo-referenced village maps
 - 3. Crop Sown Registry
- A crucial feature of AgriStack is the introduction of a 'Farmer ID', similar to Aadhaar card, serving as a trusted digital identity for farmers.

Krishi Decision Support System :

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

Soil Profile Mapping

- Under the mission, detailed soil profile maps on a 1:10,000 scale for approximately 142 million hectares of agricultural land have been envisaged, with 29 million hectares of soil profile inventory already being mapped.
- The Digital Agriculture Mission focuses on grassroots implementation, targeting farmers as the primary beneficiaries.

Some of the key benefits of the mission include:

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

MARKHOR

A male markhor, one of the most elusive large mammals in India, was rescued by wildlife authorities after straying into Noorkhah village near Baramulla in north Kashmir.



Background: -

- The village, located close to the Kazinag National Park and the Line of Control, forms part of the species.

Key takeaways

- The Markhor (*Capra falconeri*) is a large wild goat species native to the mountainous regions of South Asia and Central Asia, particularly in Pakistan, Afghanistan, and parts of India (Jammu and Kashmir).
- Conservation Status: Listed as Near Threatened on the IUCN Red List since 2015.
- CITES: Listed under Appendix I, prohibiting international trade of the species.
- National Animal: The national animal of Pakistan, where it is also known as the “screw-horned goat” due to its distinctive corkscrew-shaped horns.
- Etymology: The name “Markhor” comes from the Pashto and Persian words meaning “snake-eater,” referencing an ancient belief that the Markhor would consume snakes.

Physical Characteristics:

- Horns: Both males and females have tightly curled, corkscrew-like horns, with males’ horns growing up to 160 cm (63 in) long.
- Coat: The coat is grizzled, light brown to black in color, and varies in length and thickness with the seasons.

Habitat:

- Elevation: They inhabit mountainous terrain between 600 and 3,600 meters (2,000 and 11,800 feet) in elevation.
- Environment: They are typically found in shrub forests with oaks, pines, and junipers.

Behavior:

- Activity: Diurnal, with peak activity in the early morning and late afternoon.
- Diet: Herbivorous, grazing on grasses in spring and summer, and browsing on leaves and shoots in winter.
- Reproduction: Mating season occurs in winter, with males engaging in horn-locking fights to establish dominance.

Threats:

- Habitat Loss: Deforestation and land conversion for agriculture.
- Illegal Wildlife Trade: Poaching for meat and prized horns.
- Predation: Natural predators include snow leopards, brown bears, lynxes, jackals, and golden eagle.

DISASTER MANAGEMENT AMENDMENT BILL 2024

The Lok Sabha has recently passed the Disaster Management (Amendment) Bill, 2024, which aims to enhance the effectiveness of disaster management in India by modifying the existing Disaster Management Act of 2005.

Key Changes Introduced

- The Bill transfers the responsibility for disaster plans from the National Executive Committee and State Executive Committees to the National Disaster Management Authority (NDMA) and State Disaster Management Authorities (SDMA).
- It also allows states to establish Urban Disaster Management Authorities for cities and capitals.
- One provision of the Bill is the establishment of disaster databases at both national and state levels. These databases will help in better planning and response during emergencies.

Government's Commitment to Funding

Minister of State for Home, Nityanand Rai, brought into light the government's increased funding for disaster management. The budget for State Disaster Relief Funds (SDRF) rose from ₹38,000 crore between 2004 and 2014 to ₹1,24,000 crore from 2014 to 2024. The National Disaster Response Fund also experienced similar growth.

Support for Urban Management

Kesineni Sivanath welcomed the Bill, particularly the creation of Urban Disaster Management Authorities. He advocated for district-level authorities to address local disaster management needs effectively.

Staffing Issues Within Authorities

Congress MP Saptagiri Sankar Ulaka pointed out the staffing shortages within the NDMA. He noted that the authority is meant to have 80,557 members but only has 14,197, leading to concerns about operational effectiveness.

Dinesh Chandra Yadav stressed the importance of incorporating global warming effects into disaster management strategies. He indicated that the Bill's proposals are based on recommendations from a task force aimed at strengthening disaster management frameworks.

PAATHAI INITIATIVE

The PAATHAI initiative was recently launched in Chennai by Social Welfare and Women Empowerment Minister Geeta Jeevan and aims to support first-time child offenders, addressing their unique needs through a comprehensive approach.

It is a collaborative effort between the Children Welfare and Special Services Department and PRISM, with a budget of ₹40 lakh for a one-year pilot project at the Government Observation Home in Chennai.

Objectives of PAATHAI

The primary objective of PAATHAI is to provide mental health counselling and behavioural therapy to children. It focuses on rehabilitation and offers treatment for alcohol and drug addiction.

The initiative aims to ensure ongoing support and monitoring to help children avoid reverting to harmful behaviours after their release.

Key Components of the Programme

The programme encompasses several key components, including mental health support, behavioural therapy, and addiction treatment.

Continuous follow-up is essential, as many children face peer pressure that can lead them back to negative influences. The initiative is designed to provide consistent support until the child is fully reintegrated into society.

Training and Support Mechanisms

Additional training and counselling will be provided to equip children with the skills necessary for positive decision-making.

This training aims to empower them to resist negative influences and build a healthier future. The initiative will also include collaboration with various stakeholders to enhance its effectiveness.

Future Expansion Plans

The PAATHAI initiative is set to expand to other observation homes in the near future. This expansion will involve a coordinated effort among PRISM staff, judicial committee members, probationary officers, District Child Protection Officers, psychologists, and Child Welfare Committees. The goal is to create a supportive environment for children in need across multiple locations.

Ongoing monitoring will be a critical aspect of the programme's success. Regular assessments will ensure that children receive the necessary support and resources.

This approach aims to track progress and make adjustments as needed to improve outcomes for participants.

GENCAST

Google's DeepMind team recently launched GenCast, a new AI model that excels in weather prediction and has surpassed the European Centre for Medium-Range Weather Forecasts (ECMWF). GenCast provides faster and more accurate forecasts, extending up to 15 days ahead.



GenCast Overview

GenCast is an enhancement over previous weather models. Unlike earlier versions, it offers multiple forecasts. Users receive at least 50 different weather scenarios. This variety allows for a comprehensive understanding of potential weather outcomes.

GenCast employs a diffusion model and has effectively generated images, videos, and music. However, GenCast is tailored specifically for weather prediction. It considers the Earth's shape and recent weather data to generate outputs.

Benefits of Improved Predictions

Enhanced weather predictions are crucial for disaster preparedness. They enable officials to respond effectively to extreme weather events. For instance, GenCast provides precise forecasts for tropical storm paths. This accuracy can save lives and mitigate property damage.

Accessibility of GenCast Data

Google plans to make GenCast data widely available. Users will access both real-time and historical weather predictions. This resource will support individual research and analysis, aims to empower scientists and researchers in their weather-related studies.

GenCast is part of a broader initiative by Google, complements other advanced weather AI models. These include medium-range forecasts and flood prediction models. The focus remains on improving weather accuracy and accessibility for all users.

LFPR

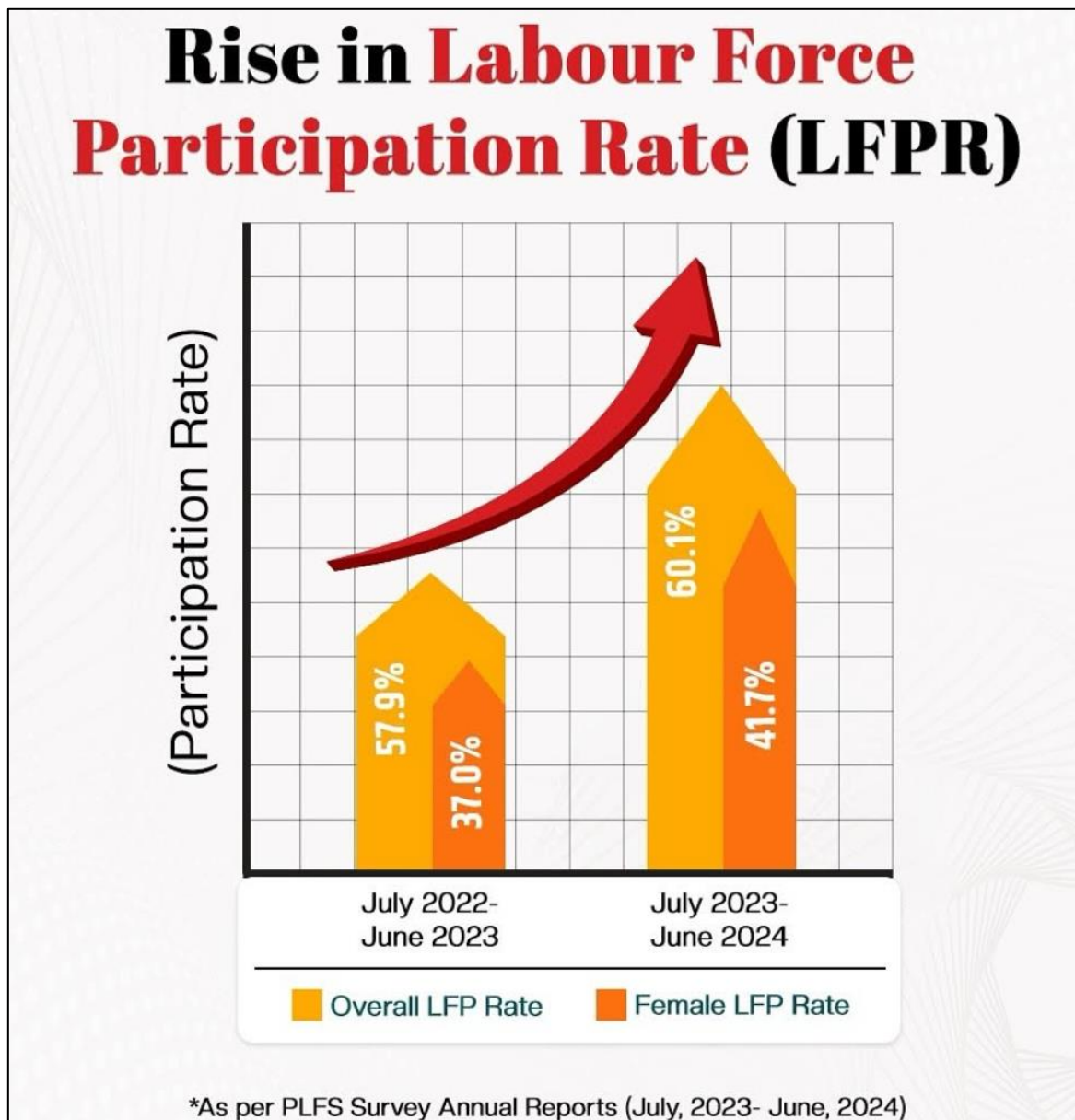
India has witnessed a notable increase in women’s participation in the workforce, particularly in rural regions, from 2017 to 2023.

Government initiatives have played an important role in this development. The Economic Advisory Council to the Prime Minister conducted a study denoting these changes.

Government Initiatives

Various government programmes have been instrumental in boosting rural women’s employment.

Key initiatives include ‘Mudra’ loans, which provide financial support, the ‘Drone Didi’ initiative for technology training, and Self-Help Groups (SHGs) under the ‘DeendayalAntyodayaYojana’ aimed at economic empowerment.



Labour Force Participation Rate (LFPR)

The Female Labour Force Participation Rate (LFPR) measures the employment status of women aged 15 and above.

Nationally, rural women's LFPR rose from 24.6% to 41.5%, reflecting a growth of about 69%. Urban areas experienced a more modest increase from 20.4% to 25.4%.

Regional Variations

The study reveals substantial regional disparities in LFPR. Rural Jharkhand saw an astounding increase of over 230%, while Bihar's rate improved sixfold.

In the Northeast, Nagaland's rural LFPR surged from 15.7% to 71.1%. Urban areas generally showed minor improvements, though Gujarat's urban LFPR increased considerably.

Married women in rural areas exhibited the highest participation growth, particularly in states like Rajasthan and Jharkhand.

Conversely, northern states such as Punjab and Haryana continue to report low LFPR. Rural Bihar has shown remarkable progress, especially among married women.

Age and Marital Status Effects

The study indicates that women's LFPR peaks between ages 30 and 40, then declines sharply. In contrast, men's LFPR remains high until age 50.

Marriage positively affects men's LFPR but negatively impacts women's, especially in urban settings. The presence of children under 14 further diminishes women's participation, particularly for younger women.

The research marks the complex interplay of gender, age, and marital status in influencing women's workforce participation. About these dynamics is vital for developing effective policies aimed at improving women's employment opportunities.

MARBLE DUCK

A marbled duck was spotted at Sultanpur National Park, marking the first sighting since 1990. The discovery was made by park guide Sanjay Singh and he shared photos with local birdwatchers, prompting a visit to the park.

Marbled Duck Overview

The marbled duck, scientifically known as *Marmaronetta angustirostris*, is a rare species, native to Europe and breeds during the summer months. The duck prefers shallow freshwater areas for breeding.

Breeding and Habitat

Marbled ducks breed in three key regions – the eastern Mediterranean, western Mediterranean, and Iran.

They require lowland freshwater habitats. Their historical range included many Mediterranean areas, but their numbers have declined.



Sightings in Delhi-NCR

Sightings of the marbled duck in Delhi-NCR are infrequent. The last recorded sighting was in Bhindawas wetland in 2022.

This species has only been observed a handful of times in Haryana. Some sightings occurred in Gurgaon during the 2000s.

Marbled ducks can be identified by their distinctive features. They have grey-white feathers, a large head, and noticeable light eye patches. Their unique appearance makes them easier to recognise among other duck species.

Diet and Feeding Habits

These ducks primarily feed on fish and aquatic plants. Their diet supports their survival in freshwater habitats. About their feeding habits is essential for conservation efforts.

DESERT KNIGHT

India, France, and the UAE have commenced an air combat exercise named “Desert Knight” over the Arabian Sea, which aims to enhance defence cooperation among the three nations. The exercise focuses on improving the air forces’ ability to operate collaboratively in complex combat scenarios.



Exercise Overview

“Desert Knight” is a three-day event designed to strengthen military ties, taking place approximately 350-400 km southwest of Karachi.

The exercise involves a variety of aircraft, including the Indian Air Force’s Sukhoi-30MKIs, Jaguars, IL-78 refuellers, and AEW&C systems.

The Indian Air Force is deploying advanced fighter jets and support aircraft from Jamnagar. The French military contributes to Rafale jets, renowned for their versatility and combat capabilities. The UAE is utilising F-16 fighters, which are stationed at Al Dhafra airbase.

Objectives of the Exercise

The primary goal of “Desert Knight” is to enhance interoperability among the air forces of the participating countries. The exercise includes intense combat manoeuvres to simulate realistic scenarios. It serves as a platform for sharing tactics and improving operational readiness.

This exercise is crucial for boosting defence ties in strategic regions, particularly the Indo-Pacific and the Persian Gulf. It reflects a collective response to growing concerns regarding China's influence in these areas. Strengthening military cooperation is vital for regional stability.

Historical Context

“Desert Knight” builds on a trilateral framework established in 2022 by the foreign ministers of India, France, and the UAE. This framework encompasses collaboration in defence, technology, energy, and environmental issues.

The exercise marks the second trilateral military operation this year, underscoring the commitment to joint defence initiatives.

ATHLETE BIOLOGICAL PASSPORT

The World Anti-Doping Agency (WADA) approved the National Dope Testing Laboratory (NDTL) in New Delhi, enabling NDTL to manage the Athlete Biological Passport (ABP). The ABP is an advancement in anti-doping efforts, allowing for the monitoring of an athlete's biological markers over time.

Athlete's Biological Passport (ABP)

The Athlete Biological Passport is a sophisticated system that tracks biological variables, and focuses on changes in blood and steroid levels. This tool aims to detect potential doping practices by comparing an athlete's biological data over time.

Importance of the Approval

WADA's approval marks an important milestone for India in its anti-doping initiatives. India is now among 17 countries with a recognized Athlete Passport Management Unit (APMU). This recognition enhances India's credibility in the global anti-doping movement.



Role of the National Dope Testing Laboratory (NDTL)

The NDTL in New Delhi will oversee the administration of the ABP. It will conduct tests and manage data related to athletes' biological markers. This role is essential for ensuring compliance with international standards in anti-doping.

The APMU in India will not only serve Indian athletes but also support anti-doping organisations in neighbouring countries. This collaborative approach strengthens regional efforts against doping in sports.

Significance for Clean Athletes

- The establishment of the ABP system is designed to protect clean athletes, promotes fair play by ensuring that athletes who adhere to the rules are not unfairly disadvantaged. The initiative aims to encourage a culture of integrity in sports.
- With the approval of the NDTL, India is positioned to enhance its anti-doping framework. This development is expected to lead to more rigorous testing and monitoring practices. The commitment to clean sports will continue to grow in the coming years.

NUPI LAL NUMIT

Manipur recently commemorated Nupi Lal Numit 2024, honouring the valiant women who fought for justice and freedom, led by Chief Minister N. Biren Singh, at the Nupi Lal Memorial Complex, marking the significance of the event.

Historical Significance

The Nupi Lal uprisings of 1904 and 1939 are very important moments in Manipuri history. Women protested against British colonial injustices, demonstrating remarkable courage. Their actions contributed to political and social changes in the state.



Today, Manipuri women continue to make strides in various fields. They excel in social work, economics, arts, culture, and sports. Their leadership is crucial for the state's progress and development.

Government Initiatives for Women

The Chief Minister announced several initiatives to empower women. The Ima NongthangleimaYaiphaTembang Scheme provides financial support to unemployed women over 40. Additionally, Ima markets are established in every district to enhance women's economic participation.

Financial assistance is also available for women athletes. This support aims to establish training centres for aspiring sports enthusiasts, encouraging a new generation of talent.

The government has introduced educational initiatives like the Chief Minister's Scholarship for Civil Service Coaching. Schemes for NEET and JEE preparation are also in place, promoting academic excellence among women.

The Chief Minister addressed ongoing crises in Manipur, emphasising collaboration between State and Central governments. He acknowledged the need for a lasting solution and brought into light efforts to locate missing individuals.

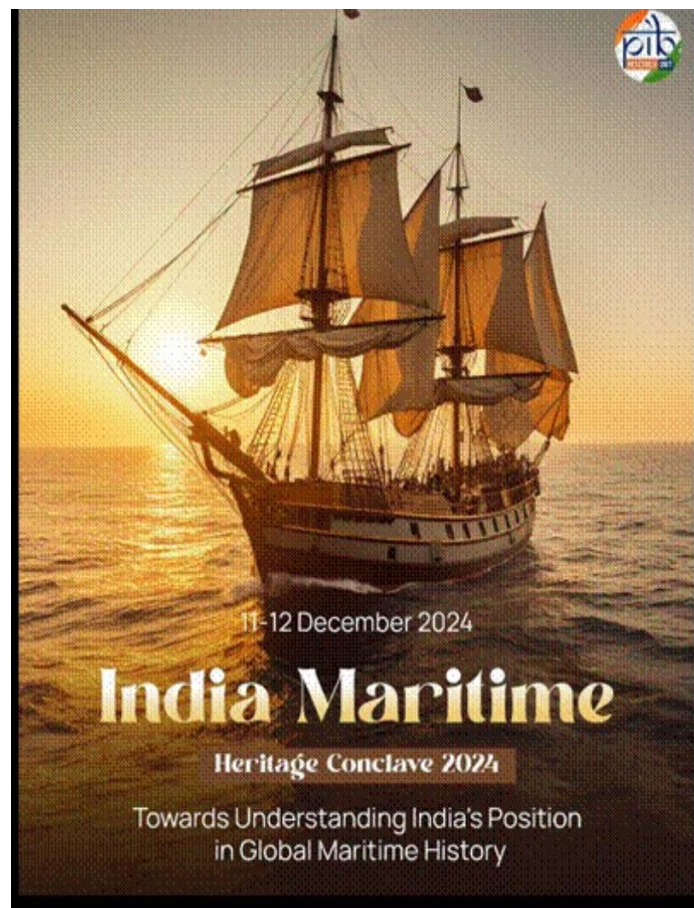
Call for Unity and Peace

Minister Th. Biswajit Singh stressed the importance of gender equality and women's involvement in decision-making. He urged citizens to set aside differences and work collectively towards peace and development.

The event featured a Nupi Lal drama and performances by local artists. It brought together ministers, MLAs, officials, students, and women from across the state, celebrating the rich cultural heritage of Manipur.

INDIA MARITIME HERITAGE CONCLAVE

The Ministry of Ports, Shipping, and Waterways is hosting the inaugural India Maritime Heritage Conclave (IMHC) on December 11-12, 2024, at the Yashobhoomi Convention Center in New Delhi, which aims to celebrate India's extensive maritime history and its cultural significance.



Event Launch and Dignitaries

Union Minister Shri Sarbananda Sonowal will officially launch the event. Other notable attendees include the Vice President of India and the Chief Minister of Gujarat. Their presence puts stress on the importance of the conclave.

The conclave will explore various aspects of India's maritime heritage and will highlight the lives of coastal communities and ancient trade routes. Significant maritime events that shaped India's culture and economy will also be discussed.

Historical Significance

Topics will include ancient ports like Lothal and Muziris. These locations were very important in commerce and cultural exchange. The conclave will also address innovative navigation techniques used by Indian sailors.

Maritime History Discussions

Experts will present insights on India's 10,000-year-old maritime history. The influence of this history on language, literature, art, and architecture will be examined. Unique traditions, cuisine, sports, and clothing of coastal states will also be showcased.

Sustainable Practices and Ocean Health

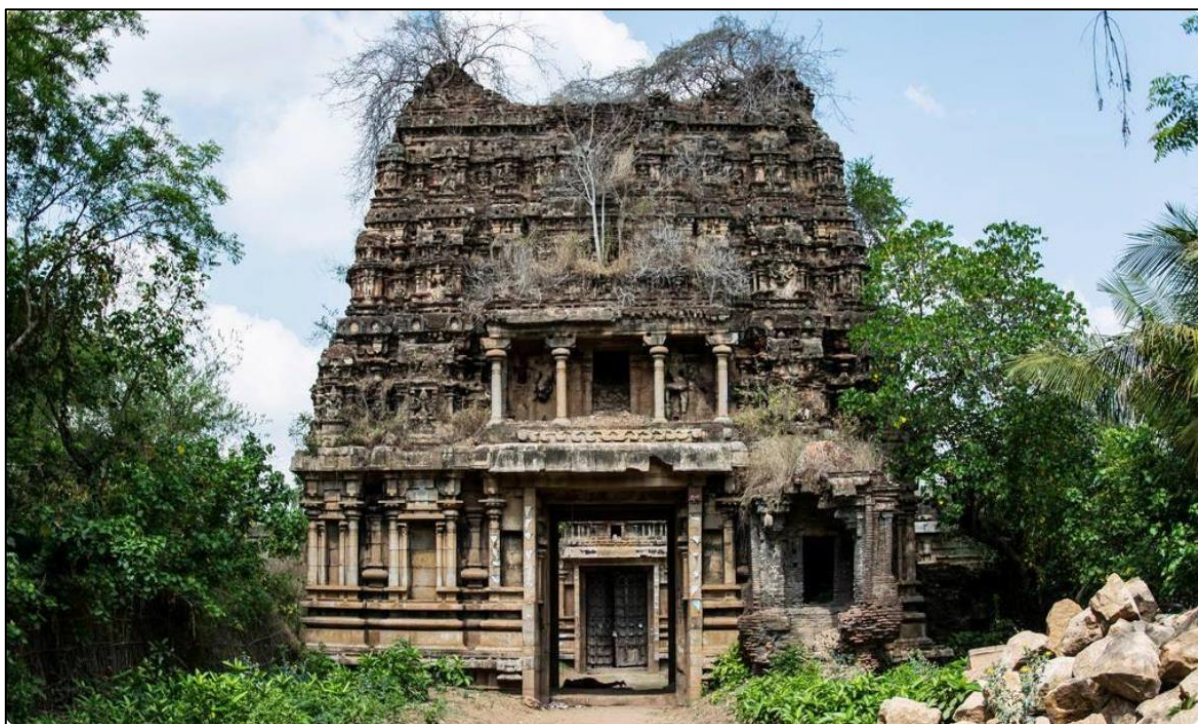
Shri SarbanandaSonowal will emphasise sustainable practices. The conclave aligns with the Prime Minister's vision for India as a Vishwaguru. Key issues like ocean health and marine biodiversity will be addressed.

Two-Day Session Overview

The first day will cover ancient trade networks and maritime heritage in the Lothal Museum. Discussions will include early trade with the Greco-Bactrian and Roman worlds. The second day will focus on Indian naval power and the Chola dynasty's contributions.

ABATHSAHAYESHWARAR TEMPLE

The Abathsahayeshwarar Temple in Thukkatchi, a 1,300-year-old Chola dynasty structure in Tamil Nadu's Thanjavur district, has gained international recognition by UNESCO's 2023 Award of Distinction for its exceptional conservation efforts.



Historical Significance

The temple was constructed by Kings VikramaChola and KulothungaChola and featured five prakarams or enclosures. The village was known as VikramaChozheeswaram and KulothungaCholaNallur.

KulothungaChola established the idol for AadhiSarabeshwarar. The temple houses many deities, including SoundaryanayakiAmbal and Ashtabhuja Durga Parameshwari.

Restoration Process

Before restoration, the temple was in poor condition. The restoration involved repairing two prakarams. Overgrown plants and trees were removed. The structures were reinforced and the gopurams were repainted. The last consecration ceremony occurred in September 2023, following the restoration.

UNESCO's Recognition

UNESCO praised the restoration for revitalising the temple, combined modern conservation techniques with traditional methods. Local craftsmen, known as sthapatthis, ensured the integrity and aesthetics were preserved and this project sets a precedent for restoring other historic temples in Tamil Nadu.

Government Support

The Hindu Religious and Charitable Endowments (HR&CE) department announced the recognition. Minister P.K. Sekarbabu brought into light government efforts. Chief Minister M.K. Stalin has allocated ₹100 crore annually for temple restorations. More temples have been identified for similar renovations, ensuring their heritage is maintained.

IMPEACHMENT AGAINST HC JUDGE

Recently, a motion to impeach a Judge of Allahabad High Court was submitted in Rajya Sabha. Impeachment process is aimed at ensuring accountability and preserving judicial integrity. None of six attempts at impeaching a judge since Independence have been successful.

HOW IS A JUDGE REMOVED?

1 Notice for removal can be presented in both Houses of Parliament. In Lok Sabha, it has to be signed by at least 100 MPs. In Rajya Sabha, a minimum 50 MPs have to sign it

2 If motion is admitted, a 3-member panel is set up to probe allegations. The panel must include an SC judge, a Chief Justice of any high court, and a distinguished jurist, to be nominated by the Speaker/Vice-President

3 The panel submits its

report to the Speaker/Vice-President, and it is shared with the other House. If the report establishes "misbehaviour" or "incapacity" then both Houses need to pass an 'address to the President' that the judge be removed

4 The 'address' has to be passed by 2/3rds of the members present and voting in each House, and the number should be more than the halfway mark for each House

5 Once passed by both, the President can remove the judge through a Prez Order



Constitutional Provisions Related to Impeachment of Judges

While constitution does not use word 'impeachment', it is colloquially used to refer to the proceedings under Article 124 (for the removal of a Supreme Court judge) and Article 218 (for removal of a high court judge).

Grounds: Proven misbehaviour and incapacity (Not defined in the Constitution).

Procedure is regulated by Judges Enquiry Act (1968).

Steps in the Impeachment Process :

Initiation: A motion must be signed by at least 100 Lok Sabha members or 50 Rajya Sabha members. Submitted to presiding officer of respective House.

Investigation: If motion is admitted by presiding officer, then it is referred to a three-member committee comprising-Chief Justice of India or a judge of Supreme Court, a High Court Chief Justice, and a distinguished jurist.

Committee investigates charges and submits report to Speaker/ Chairman with its findings and observations. Speaker/ Chairman will then place report before Lok Sabha/ Rajya Sabha.

◆ If committee finds judge guilty, its report is adopted by House where it was introduced.

Parliamentary Approval: Debate and voting in both Houses of Parliament requires special majority (Two-thirds majority of members present and voting and a majority of total membership).

Presidential Action: If passed by both houses, motion is sent to President for final approval.

IBC REFORMS

Report **acknowledged that** IBC has made significant strides in improving resolution of distressed corporate assets, enhancing credit discipline, and revival of unproductive assets in India.

- However, Committee **observed persistent challenges** that hinder its full effectiveness.

Issues highlighted by committee on IBC:

- **Competence and conduct issues** against Resolution Professionals (RPs).
- **Lack of clarity on government creditors' claims** and issues around stakeholder representation.
- **Delays** at the admission and adjudication stage at the National Company Law Tribunal (NCLT).
 - Nearly 64% of Corporate Insolvency Resolution Processes (CIRPs) exceeded statutory 330-day limit

Key recommendations of committee

- Establishing **fast track tribunals** with **strict timelines** for high priority cases, adopting an **urgent list system** to prioritize time-sensitive matters.

- **Introduction of provisions** similar to Article 226(3) of Constitution, **to mandate the processing of applications within 14 days.**
- **PPP models to improve judicial processes**, drawing on success of privatized SevaKendras.
- **Ensuring NCLT members possess specialized knowledge**, as specified by **Supreme Court** in the Finolex Industries case.
- **Providing clearer guidelines on treatment of government dues**, especially taxes and penalties, etc.

About Insolvency and Bankruptcy Code, 2016:

- **Purpose:** To reorganize insolvency resolution process in a time bound manner.
- **Four pillars of Code:**
 - **Insolvency Professionals (IPs):** Manage insolvency, liquidation and bankruptcy process.
 - **Information Utilities (IUs):** Store facts about lenders and terms of lending.
 - **Adjudicating Authority (AA):** NCLT for corporate insolvency and Debt Recovery Tribunal for individual insolvencies.
 - **Insolvency and Bankruptcy Board of India (IBBI):** Responsible for specifying regulations for various processes.

KEN-BETWA RIVER-LINKING PROJECT

Prime Minister Narendra Modi laid the foundation stone for the Ken-Betwa river-linking project in Madhya Pradesh's Khajuraho, aimed at solving the water woes of the Bundelkhand region, spread across parts of Uttar Pradesh and Madhya Pradesh.

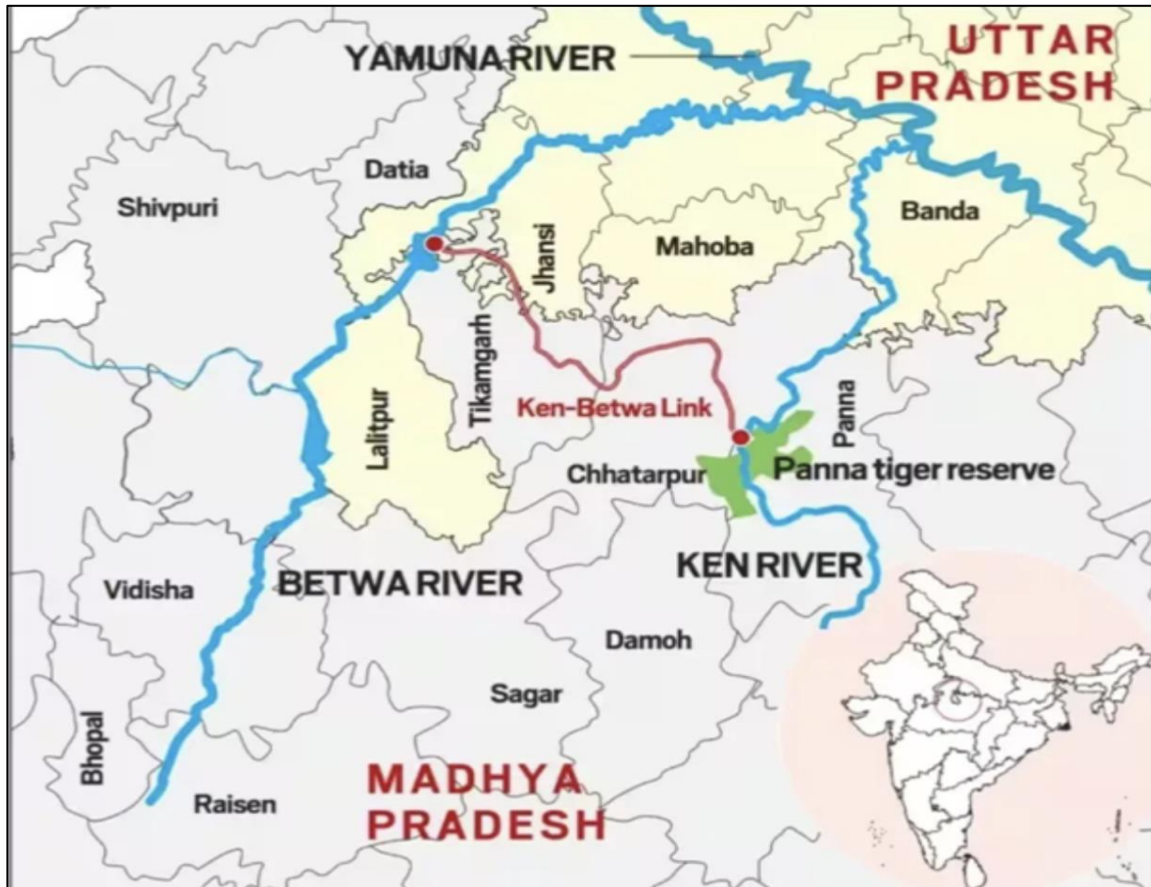
Background:

- The Ken-Betwa Link Project is the first project under India's National Perspective Plan for interlinking rivers, which was prepared in 1980.
- This plan has 16 projects under its peninsular component, including the KBLP. Apart from this, 14 links are proposed under the Himalayan rivers development plan.

Key takeaways

- The Ken-Betwa Link Project (KBLP) is a major river interlinking project in India with a project outlay of ₹45,000 crore.
- **Objective:** The project aims to transfer water from the Ken River to the Betwa River, both tributaries of the Yamuna. This will provide irrigation to 10.62 lakh hectares (8.11 lakh hectares in Madhya Pradesh and 2.51 lakh hectares in Uttar Pradesh), supply drinking water to about 62 lakh people, and generate 103 MW of hydropower and 27 MW of solar power.
- **Components:** The project includes the construction of the Daudhan Dam, a 77-meter-high, 2.13-kilometer-long dam within the Panna Tiger Reserve, and a 221-kilometer canal linking the Ken and Betwa Rivers.
- The Ken-Betwa Link Project has two phases.

- Phase-I will involve building the Daudhan Dam complex and its subsidiary units such as the Low Level Tunnel, High Level Tunnel, Ken-Betwa Link Canal and power houses.
 - Daudhan dam is 2,031 m long, out of which 1,233 metre will be earthen and the rest 798 m will be of concrete. According to the Jal Shakti Ministry, the dam will submerge about 9,000 hectares of land, affecting 10 villages.
- Phase-II will involve three components – Lower Orr Dam, Bina Complex Project and Kotha Barrage.



What are the project’s likely environmental and social impacts?

- The Supreme Court’s Central Empowered Committee (CEC) had questioned the project on multiple counts while examining its wildlife clearance.
- The CEC had raised questions on the economic viability of the project, advocating for first exhausting other irrigation options in the upper Ken basin.
- The submergence of around 98 sq km of Panna national park and felling of about two to three million trees has been one of the most controversial aspects of the project. The Daudhan dam is situated inside the national park.
- The Union environment ministry approved its construction inside the core of the Panna tiger reserve, despite no precedent of such heavy infrastructure projects deep within national parks and tiger reserves.
- Downstream of the national park, the Daudham dam is also likely to affect the Gharial population in the Ken Gharial sanctuary along with vulture nesting sites, the CEC had noted.

PM SVAMITVA

Four years after the Union government launched the Svamitva scheme to digitise property records in rural areas, Prime Minister Modi will distribute 58 lakh property cards providing a “record of rights” to owners in over 50,000 villages across 12 States on Friday at a virtual event.



Background: -

- The Ministry of Panchayati Raj (MoPR) is the Nodal Ministry for implementation of the scheme. In the States, the Revenue Department / Land Records Department will be the Nodal Department and shall carry out the scheme with support of State Panchayati Raj Department. Survey of India is the technology partner for implementation.

Key takeaways

- The SVAMITVA Scheme (Survey of Villages Abadi and Mapping with Improved Technology in Village Areas) is a central sector scheme launched by the Government of India on April 24, 2020, aimed at empowering rural property owners by providing them with official documentation of their residential properties.

Objectives of the SVAMITVA Scheme:

- Financial Empowerment: Enable rural property owners to use their property as a financial asset for securing loans and other financial benefits.
- Accurate Land Records: Create precise land records for rural planning and reduce property disputes.
- Property Tax Assessment: Facilitate accurate determination of property tax, enhancing revenue for Gram Panchayats.
- Infrastructure Development: Establish survey infrastructure and GIS maps that can be utilized by various departments.
- Improved Planning: Support the preparation of better-quality Gram Panchayat Development Plans (GPDP) by utilizing GIS maps.

Key Features:

- Drone Technology: Utilizes drone surveying technology for the demarcation of rural inhabited areas, ensuring high accuracy in mapping.
- Property Cards: Issuance of property cards (also known as ‘Title Deeds’) to property owners, providing them with legal ownership documents.

Benefits to Rural Communities:

- **Legal Recognition:** Provides official recognition of property rights, reducing disputes and enhancing security.
- **Economic Opportunities:** Empowers property owners to leverage their assets for economic activities, including securing loans.
- **Enhanced Governance:** Assists local governments in effective planning and resource allocation through accurate land records.

STATE OF FOREST REPORT -ISFR2023

The 18th biennial State of Forest Report (ISFR-2023) by the Forest Survey of India (FSI) found a marginal gain of 156 sq km in forest cover, and a sizable increase of 1,289 sq km in tree cover since 2021.

Background: -

- Irrespective of land use or ownership, tree patches measuring 1 hectare or more with a minimum canopy cover of 10% are counted as forests in India :
 - Very dense forest: Canopy density of 70% or more
 - Moderately dense forest: Canopy density of 40–70%
 - Open forest: Canopy density of 10–40%



Key takeaways

- For the first time, India's green cover has exceeded the 25% threshold with 8,27,357 sq km (25.17%) of the country now under forest (21.76%) and tree (3.41%) cover. Of this, 4,10,175 sq km is classified as dense forests.
- Tree patches smaller than 1 hectare do not count as forests, and have been measured separately by FSI as tree cover since 2001. IFSR-2023 recorded a 0.5 percentage point jump in two years, with tree cover rising to 3.41%.
- In comparison, India's forest cover has increased by only 0.05 percentage points since 2021. This is consistent with the trend of diminishing growth since India's forest cover crossed the 20% threshold at the turn of the millennium.
- Between 2003 and 2013, forest cover increased by 0.61 percentage points, from 20.62% to 21.23%. In the next 10 years, it grew by only 0.53 percentage points to 21.76%.

- Depending on factors such as climate and biotic pressure, a forest can improve or degrade to the next density category – a VDF patch may thin to become a moderately dense forest (MDF) or an OF may get upgraded as an MDF – during a 2-year IFSR cycle.
- SFR-2023 shows that 3,913 sq km of dense forests – an area larger than Goa – have disappeared in India in just two years since 2021.
- This is consistent with the worsening trend over the past two decades: 17,500 sq km of dense forests were wiped out between 2013 and 2023, while 7,151 sq km disappeared between 2003 and 2013.
- The bulk of this loss has been offset by the rapid transformation of 15,530 sq km of non-forested or scantily forested land to dense or even very dense forests in successive two-year windows during 2003-2023. These are plantations, say experts, because natural forests do not grow this fast.
- The trend of steady replacement of natural dense forests with plantations has been criticised by experts.
- Plantations usually have trees of the same age (and often the same species), are vulnerable to fire, pests and epidemics, and often act as a barrier to the regeneration of natural forests which are more biodiverse, perform a wider range of ecological functions, and support numerous species.

GOOD GOVERNANCE DAY

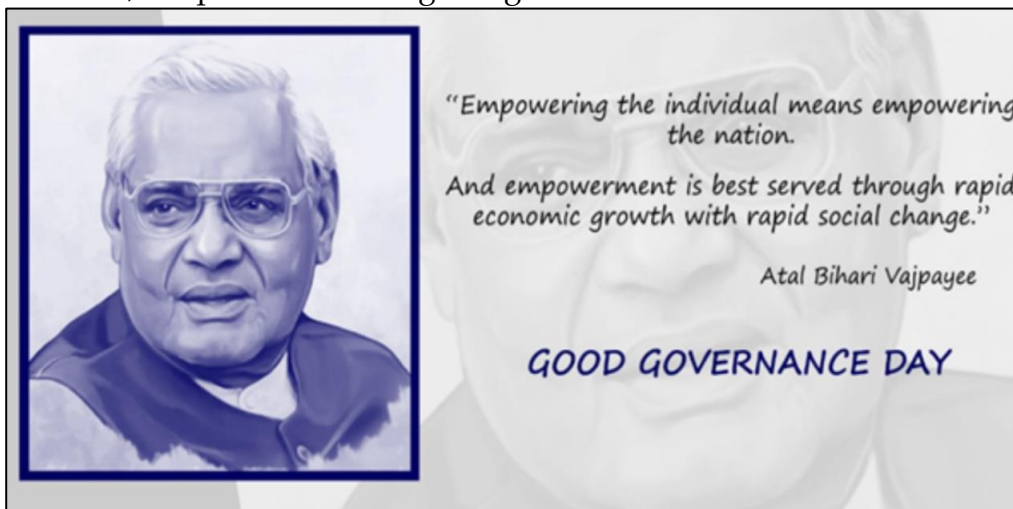
Every year, Good Governance Day is celebrated on December 25th.

Background: -

- This day aims to raise awareness among citizens about government accountability and effective administration while promoting the practice of “good governance” among civil servants.

Key takeaways

- In 2014, the Union government announced that December 25 would be celebrated as “Good Governance Day.” This day honors the birth anniversary of former Prime Minister Atal Bihari Vajpayee.
- According to Good Governance Index Report, “Good governance can be referred as an effective and efficient process of decision making and the process by which decisions are implemented (or not implemented) keeping the amelioration of citizens as the topmost priority. Resource allocation, creation of formal establishments, setting up rules and regulations etc., are part of achieving this goal.”



Atal Bihari Vajpayee

- Atal Bihari Vajpayee was born on December 25, 1924 in Gwalior, present-day Madhya Pradesh.
- He held his first major national position as the External Affairs Minister in Morarji Desai's post Emergency government.
- Eventhough he resigned and the government soon fell, Vajpayee had earned major plaudits for his tenure, with his UN General Assembly speech in Hindi drawing praise.
- While he first became Prime Minister in 1996 (for 16 days) it was his 1998-1999 and 1999-2004 terms that left a lasting impact on the nation. He was the first non-Congress prime minister to serve a full term in the office.
- Under his tenure, India formally became a nuclear power (Pokhran-II nuclear tests in 1998) despite criticism from the West, ably faced war and peace with Pakistan, undertook massive public welfare projects including SarvaShikshyaAbhiyaan and PM GraminSadak Yojana, and ushered in a new era of foreign investment and international relations, especially with the US.
- In 2015, he was honoured India's highest civilian honour – Bharat Ratna.
- When Prime Minister Narendra Modi announced the new “Good Governance Day” in 2014, there were two primary reasons cited.
 - First was to commemorate the life of Atal Bihari Vajpayee.
 - Second, was to use the day as a way to increase awareness of government services and accountability among people and inculcate “good governance” as a habit for civil servants.

ROHINGYAN REFUGEES CASE

A recent study examining the plight of Rohingya refugees detained in India has highlighted gross violations of constitutional and human rights and criticised India's failure to uphold its obligations under international human rights treaties.

Background:

- According to the United Nations High Commissioner for Refugees (UNHCR), nearly 22,500 Rohingya refugees currently reside in India.

How are Rohingya refugees protected under international law?

- The Rohingya of Myanmar constitute the world's largest stateless population, estimated to number approximately 2.8 million.
- The 1951 Refugee Convention and its 1967 Protocol enshrine the principle of non-refoulement, which prohibits states from expelling individuals when evidence suggests they would face persecution, torture, or other severe human rights violations upon return.
- Moreover, its status as customary international law imposes binding obligations on states regardless of formal assent.
- In a 2007 advisory opinion, the UNHCR affirmed that non-refoulement constitutes customary law and is binding on all states, including those not parties to the Refugee Convention or the 1967 Protocol.

India's stand

- As India is neither a signatory to the Refugee Convention nor a party to key international instruments such as the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment and the International Convention for the Protection of All Persons from Enforced Disappearance, it maintains that it bears no legal obligation to provide asylum or adhere to non-refoulement.
- India continues to detain Rohingya refugees under domestic legal frameworks, notably the Foreigners Act, 1946, and the Passport Act, 1967.
- In response to a public interest litigation (PIL) in the Supreme Court seeking the release of detained Rohingya refugees, the Union government clarified that while they are entitled to the right to life under Article 21, they do not possess the right to reside or settle in India.
- In 2021, the top court in *Mohammad Salimullah and Anr. v. Union of India*, rejected a plea to prevent the deportation of Rohingya refugees detained in Srinagar accepting the Centre's national security concerns.

What are India's international obligations?

- The International Covenant on Civil and Political Rights, to which India is a party, implicitly obligates member states under Article 7 to refrain from refouling individuals to places where they may face torture or cruel, inhuman, or degrading treatment.
- Similarly, the principle of non-refoulement is enshrined in other instruments, including the International Convention on the Elimination of All Forms of Racial Discrimination and the Convention on the Rights of the Child, both of which India has ratified.
- Further, the Convention Against Torture makes an express mention of non-refoulement under Article 3. While India's position as a signatory but not a ratifier renders it non-binding, any deviation from the principles would compromise the commitment India demonstrated by signing the treaty.
- Although India lacks a domestic refugee law, the Supreme Court in landmark rulings such as *Vishaka & Ors. v. State of Rajasthan* (1997) and *National Legal Services Authority v. Union of India* (2014), has affirmed that in the absence of domestic legislation on a matter, international conventions and norms must be applied to ensure the dignity of human life. Additionally, Article 51(c) of the Constitution mandates that the State must strive to promote respect for international law and treaty obligations.
- Several High Courts in India have also interpreted the principle of non-refoulement as integral to Article 21 of the Constitution.

What are the existing concerns?

- The absence of a standardised refugee policy has led to disparate treatment of different refugees, driven by India's shifting geopolitical and diplomatic interests.
- While groups such as Tibetans, Sri Lankans, and Afghans are granted refugee certificates or long-term visas, most Rohingya refugees – despite being registered with the UNHCR – often face arbitrary detention and imprisonment. Further, the Citizenship Amendment Act, 2019, excludes Muslim minorities, such as the Rohingya, from its ambit.
- The lack of legal representation and aid for detained Rohingya refugees also poses a concern.
- Detention centres housing Rohingya refugees are plagued by dehumanising conditions. In light of the appalling conditions at the Matia Transit Camp, the Supreme Court in October, directed the Assam State Legal Services to conduct surprise visits and evaluate the conditions in which the refugees are living.

PAPIER-MÂCHÉ

This Christmas, papier-mâché artisans in Srinagar have created thousands of dodos, a bird that went extinct in 1681.

Background: -

- This year, over 50,000 papier-mâché dodos have been exported to markets in Europe and Mauritius, just in time for Christmas.

Key takeaways

- Kashmiri papier-mâché is a traditional handicraft of Jammu and Kashmir, known for its intricate designs and vibrant colors.
- The tradition of the Kashmir Papier Machie has its origin rooted in the 15th century when king Zain-ul-Abidin invited accomplished artists and craftsmen from Central Asia.
- Over time, the craft evolved, and during the Mughal era, it gained significant popularity. The Mughal emperors patronized this art, and it became an integral part of Kashmiri culture.
- Derived from the French term “papier-mâché,” meaning “chewed paper.”
- Process of Making:
 - Raw Material: Waste paper soaked, pulped, and molded into various shapes.
 - Lacquer Work: Layers of glue and adhesive applied for durability.
 - Painting: Hand-painted using natural pigments and intricate floral or geometric patterns.
 - Varnishing: Polished to give a glossy finish.
- Papier-mâché is deeply embedded in Kashmiri culture and is protected under the Geographical Indication (GI) Act, 1999.



BIO-BITUMEN

Union minister for road transport and highways, Nitin Gadkari, inaugurated a 1km stretch of Asia’s first highway with a bio-bitumen blended surface. The highway stretch is located on NH-44 in Mansar, Nagpur, Maharashtra.



Background: -

- The project's success is still two years away. Central Road Research Institute (CRRI), a govt body, will observe whether the road withstands heavy traffic and changing seasons.

Key takeaways

- Bitumen, a black, viscous material derived from crude oil, is commonly used as a binder in road construction. Lignin, on the other hand, is a natural polymer found in plant cell walls and is abundant in agricultural waste.
- Processing lignin into bio-bitumen offers an environmentally friendly solution with up to a 70% reduction in greenhouse gas emissions compared to conventional bitumen.

Composition and Production of bio bitumen

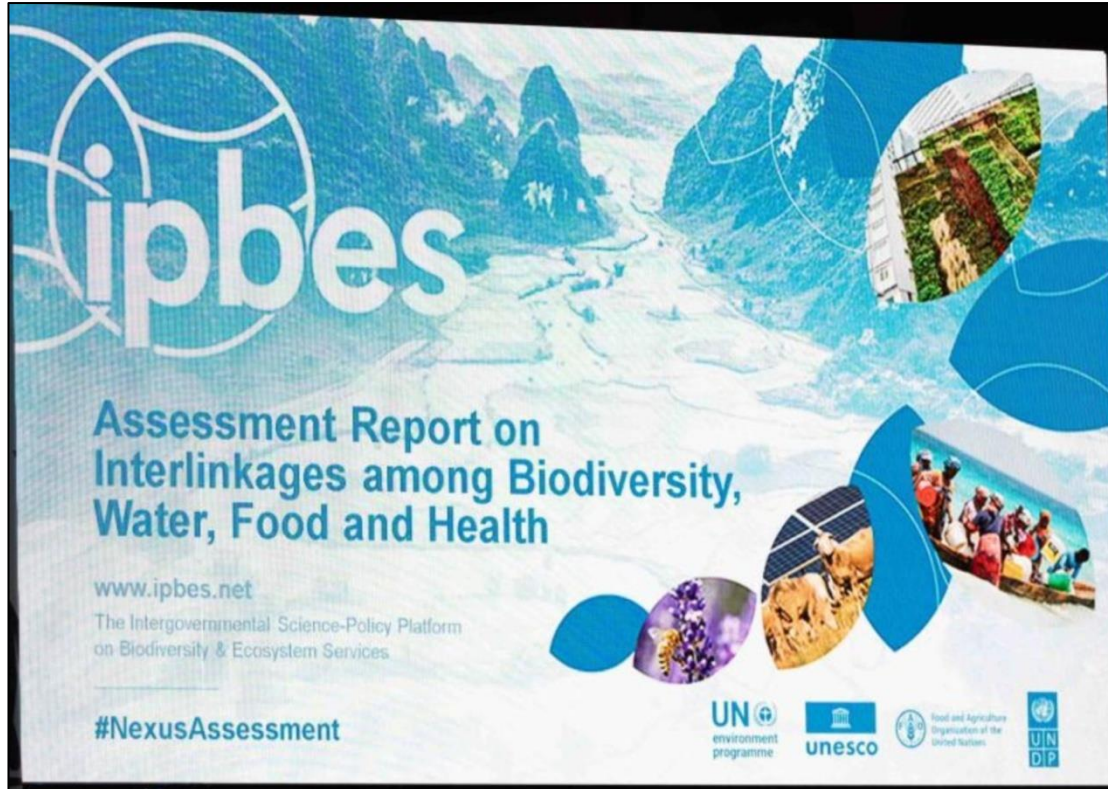
- Feedstock:
 - Agricultural residues (e.g., straw, husks, and lignocellulosic biomass).
 - Algae, waste cooking oil, and animal fats.
 - Organic waste from municipal solid waste (MSW) and industrial processes.
- Process:
 - Pyrolysis: Thermal decomposition of biomass in the absence of oxygen to produce bio-oil, which is refined into bio-bitumen.
 - Hydrothermal Liquefaction: Converts wet biomass into bio-bitumen through high temperature and pressure.
 - Catalytic Upgradation: Enhances the physical and chemical properties of bio-bitumen for improved performance.

Benefits

- Reduced Imports: Bio-bitumen helps reduce dependency on imported bitumen.
- Environmental Impact: It addresses issues like stubble burning by utilizing agricultural waste as feedstock. It is estimated to cut greenhouse gas emissions by at least 70% compared to fossil-based alternatives.

NEXUS REPORT

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), a global group of scientific experts, has released an Assessment Report on the Interlinkages among Biodiversity, Water, Food and Health – known as the Nexus Report.



Background: -

- This is a first-of-a-kind report looking at the interconnections between the multiple crises. The group examined five major challenges – climate change, biodiversity loss, food insecurity, water scarcity, and health risks – and found that they were strongly interconnected.

What is IPBES?

- IPBES is to biodiversity and natural ecosystems what Intergovernmental Panel on Climate Change (IPCC) is to climate change. It periodically examines all the existing scientific knowledge on biodiversity and nature to make an assessment of their current state.
- Just like IPCC, IPBES too does not produce new science. It only evaluates the existing knowledge to make consolidated assessments.
- IPBES, set up in 2012, informs several multilateral environmental processes, including the UN Convention on Biological Diversity (CBD), the Convention on Combating Desertification (CCD), the Ramsar Convention on Wetlands, Convention on International Trade in Endangered Species, and the Cartagena Protocol on Biosafety.
- IPBES produced its first report in 2019 in which it assessed the threat to global biodiversity. The information in this report became the basis for the Kunming-Montreal Global Biodiversity Framework.

What does the latest report say?

- Nexus Report has highlighted the strong interlinkages between the five identified global challenges. Its key takeaway is that responses to all these challenges need to be harmonised so that positive actions taken on any one of these does not result in negative impacts on others.
- For example, an attempt to scale up food production, a positive action to deal with hunger and malnutrition, could have the unintended consequence of increasing stress on land and water resources and biodiversity. Exclusive focus on climate change could also go down on the same pathway.
- The report, therefore, argues that it was important to adopt synergistic approaches that deliver benefits across the spectrum.
- Report identified over 70 synergetic approach response options that produced positive outcomes across the five elements.
- Examples of such response measures included restoration of carbon-rich ecosystems such as forests, soils and mangroves, effective management of biodiversity to reduce risks of diseases spreading from animals to humans, promotion of sustainable healthy diets, and reliance on nature-based solutions wherever possible.
- The report pointed out that more than half of the global GDP – was moderately to highly dependent on nature.

Transformative Change Report

- In another report released simultaneously, IPBES called for fundamental and transformative shifts in the way people view and interact with the natural world in pursuit of its well-being.
- This report, being called the Transformative Change Report, said current, and previous, approaches to deal with ecological decline had failed, and a new and different approach was needed.
- This new and transformative approach, it said, must be based on four fundamental principles – equity and justice, pluralism and inclusion, respectful and reciprocal human-nature relationships, and adaptive learning and action.
- It said the world needed to act immediately on new approaches because the cost of delaying action would increase the costs. There were also benefits to be had from immediate action. It said recent estimates suggested that more than 10 trillion dollars in business opportunities, and about 400 million jobs, could be generated by 2030 through sustainable economic approaches that rely on nature-positive economic models.

SPADEX MISSION

The satellites for the SpaDeX mission are set to launch onboard the PSLV C60 mission on December 30, 2024.

Spadex Mission




CONTEXT

ISRO is gearing up for the Spadex mission, which is designed to demonstrate and showcase in-orbit docking capabilities.

The SPADEX mission is a collaborative initiative by the Indian Space Research Organisation (ISRO).

SPADEX, which stands for Space Docking Experiment, is a twin spacecraft mission with a focus on advancing technologies related to orbital rendezvous, docking, formation flying, and in-space satellite servicing.



ABOUT SPADEX MISSION

TWO SPACECRAFTS


The mission involves the launch of two spacecraft, namely the Chaser and the Target.



Importantly, the mission plays a crucial role in enhancing the functionality of space stations.

OBJECTIVE

A key objective of the SPADEX mission is to execute a complex and autonomous docking procedure in orbit.



CONSTITUTION

The technologies developed through SPADEX have applications in various areas, including human spaceflight, in-space satellite servicing, and other proximity operations.

INDIAN SPACE STATION

This development will position India alongside countries like the US, Russia, and China in having its own space station.




INDIA'S OWN SPACE STATION - BHARATIYA ANTARIKSHA STATION

SPACE STATION

India is set to launch its own space station, named Bharatiya Antariksha Station, by the year 2035.






The initial plan for the space station is to accommodate

SPACE STATION BENEFITS

The Indian space station is planned to be considerably smaller, with a mass of 20 tonnes, compared to the International Space Station. Its primary purpose



ISS

A space station is a habitable spacecraft designed to support human crewmembers and remain in space.

The SPADEX mission will play a

Background:

- If the SpaDeX test is successful, India will become the fourth country in the world to have a space programme capable of docking in space.

Key takeaways:

- The SpaDeX mission (Space Docking Experiment) is an ambitious project by the Indian Space Research Organisation (ISRO) aimed at demonstrating in-space docking technology.
- The primary goal of the SpaDeX mission is to develop and demonstrate the technology required for rendezvous, docking, and undocking of two small spacecraft in low-Earth orbit.
- ISRO needs to master in-space docking so that satellites launched in separate rocket launches can link up to perform more sophisticated tasks. The technology will be essential for the 'Bharatiya Antariksh Station,' a new India-made space station ISRO has begun work on.
- Mission Details:
 - Spacecraft: The mission involves two small spacecraft, SDX01 (Chaser) and SDX02 (Target), each weighing approximately 220 kg.
 - Launch: The spacecraft will be launched aboard the Polar Satellite Launch Vehicle (PSLV-C60) from the Satish Dhawan Space Centre.
 - Orbit: Both spacecraft will be injected into a 470 km circular orbit at a 55° inclination.
 - Docking Process: The mission will demonstrate the docking of the two spacecraft, followed by the transfer of electrical power between them. After successful docking, the spacecraft will undock and operate their respective payloads for up to two years.

GREEN DEPOSITS

Considering the threat that climate change poses globally, the Reserve Bank of India (RBI) in April last year issued a comprehensive framework for lenders to accept green deposits. However, more than 20 months after the framework has been issued, lenders have made little to no progress in garnering green deposits.

Background: -

- Bankers say a reduction in cash reserve ratio (CRR) requirement for green deposit will help.

What is green deposit?

- Green deposits are essentially interest-bearing deposits, received by the lenders for a fixed period and the proceeds of which are earmarked for being allocated towards green finance.
- The deposits shall be denominated only in Indian rupees as per RBI norms.
- Capital raised via green deposits can be used in funding projects related to solar, wind, biomass, and hydropower energy projects that integrate energy generation and storage.
- Further, the funds can be used in sectors which enable energy efficiency, clean transportation, climate change adaptation and sustainable water and waste management.
- Green deposits also can be used for funding green buildings, projects relating to coastal and marine environments, certified organic farming, among others.
- To ensure compliance, RBI said that allocation of funds raised through green deposits during a financial year shall be subject to an independent third-party audit.

Challenges to Green Deposits in India

- Limited Customer Interest and Awareness : Many customers lack awareness of these products and their potential impact. Without a strong alignment of values or incentives, green deposits fail to attract interest from the general public.
- Lower Interest Rates : Green deposits typically offer lower interest rates compared to standard deposit products.
- Slow Adoption Among Private Banks : While most public sector banks have started offering green deposits, private banks have been slower to adopt these products. This hesitance limits the overall availability and visibility of green deposit options.
- Competing Priorities for Lending : Given the country's population and economic structure, banks must prioritize lending to sectors like small and medium enterprises (SMEs) and job creation. This focus can divert attention and resources away from green projects.

PANAMA CANAL

Incoming U.S. President Donald Trump slammed unfair fees for U.S. ships passing through the Panama Canal and threatened to demand that control of the waterway be returned to Washington.

Background: -

- Trump's comments were an exceedingly rare example of a U.S. leader saying he could push a sovereign country to hand over territory.

Key takeaways

- The Panama Canal is an artificial 82-kilometer (51-mile) waterway in Panama that connects the Atlantic Ocean with the Pacific Ocean, cutting across the Isthmus of Panama.
- It greatly reduces the time for ships to travel between the Atlantic and Pacific oceans, enabling them to avoid the lengthy, hazardous route around the southernmost tip of South America via the Drake Passage, the Strait of Magellan or the Beagle Channel.
- Early Attempts: The idea of creating a water passage across the isthmus of Panama dates back to at least the 1500s. The French first attempted to build a canal in the 1880s but failed due to disease and financial difficulties.
- U.S. Construction: The United States took over the project in 1904, and the canal was completed in 1914. The U.S. maintained control over the canal zone until 1999, when it was handed back to Panama.
- Modern Era: Panama took full control of the canal in 1999, and it continues to be a vital artery for international shipping.



Structure:

- Locks: Locks at each end lift ships up to Gatun Lake, an artificial fresh water lake 26 meters above sea level, created by damming up the Chagres River and Lake Alajuela to reduce the amount of excavation work required for the canal. Locks then lower the ships at the other end.
- Water Usage: An average of 200 million liters (52 million gallons) of fresh water is used in a single passing of a ship.

STARLINK SATELLITE

Elon Musk has denied claims that his space company SpaceX’s satellite internet technology Starlink is being used by militants in Manipur.

Background: -

- This came after the Indian Army and police seized weapons and what looked like a Starlink-branded satellite router and antenna. Starlink is still pending regulatory approval in India, though it will be starting in neighbouring Bangladesh and Bhutan in 2025.

What is Starlink and how does it work?

- Starlink uses an extensive low Earth orbit satellite constellation to deliver broadband internet that has high speeds and low latency.
- It is a popular choice for users worldwide in remote areas, sea vessels, disaster-struck regions, or places where oppressive regimes have throttled access to more mainstream internet services.



- There are thousands of satellites in the Starlink system, and they orbit Earth at around 550 km. Though they cover the entire globe, per SpaceX, the company is not authorised to provide its services to users in some regions.

What is the controversy surrounding Starlink?

- Indian army on December 16 shared photos of guns, ammunition, and country-made mortars seized from Manipur in X.
- X users spotted a small satellite device and router, with the latter bearing the SpaceX logo sparking speculation that Musk's technology was being used by terrorists. Elon Musk responded that Starlink satellite beams are turned off over India.
- This is not the first time SpaceX has become embroiled in controversy in India. Last month, smugglers originating from Myanmar were caught by the Andaman and Nicobar islands police with over 6,000 kg of meth and a Starlink device that was allegedly used for navigation and communication, despite service being prohibited in Indian waters.
- Furthermore, in August this year, Starlink equipment was seen being sold on the B2B platform IndiaMART.

Can Starlink satellite internet be controlled ?

- International borders are not solid and it is not easy to refine satellite internet coverage to such a precise degree that service is activated or halted exactly in line with a nation's border. An additional complication is that many international borders are contested or unclear.
- More information is needed from SpaceX to understand how the company ensures that Starlink satellite internet does not reach the countries yet to allow Starlink, while enabling service for neighbouring countries or waters that do allow Starlink service.

What does Indian law say?

- India strictly regulates and restricts the use of satellite-based communication devices. Everyday gadget users within the country would have noticed that even key satellite-based emergency features on premium phones that are easily available for users overseas are not enabled for use in India.
- Under section 6 of the Indian Wireless Act and Section 20 of the Indian Telegraph Act, the use of thuraya/iridium satellite phones is illegal in the country. Indian embassies worldwide warn both Indian and foreign travellers that they cannot carry satellite phones into the country and may face confiscation and legal action if they do so without permission.
- These restrictions are in place largely to combat militancy and terrorism. In 2022, Indian officials reported that evidence of iridium satellite phone usage was discovered in the Kashmir Valley.
- Starlink is currently trying to enter the Indian market. The latest discovery of the Starlink hardware in Manipur could further affect SpaceX's entry, due to doubts over its compliance with Indian regulations and possible misuse by non-state actors.

HYDROTHERMAL VENT

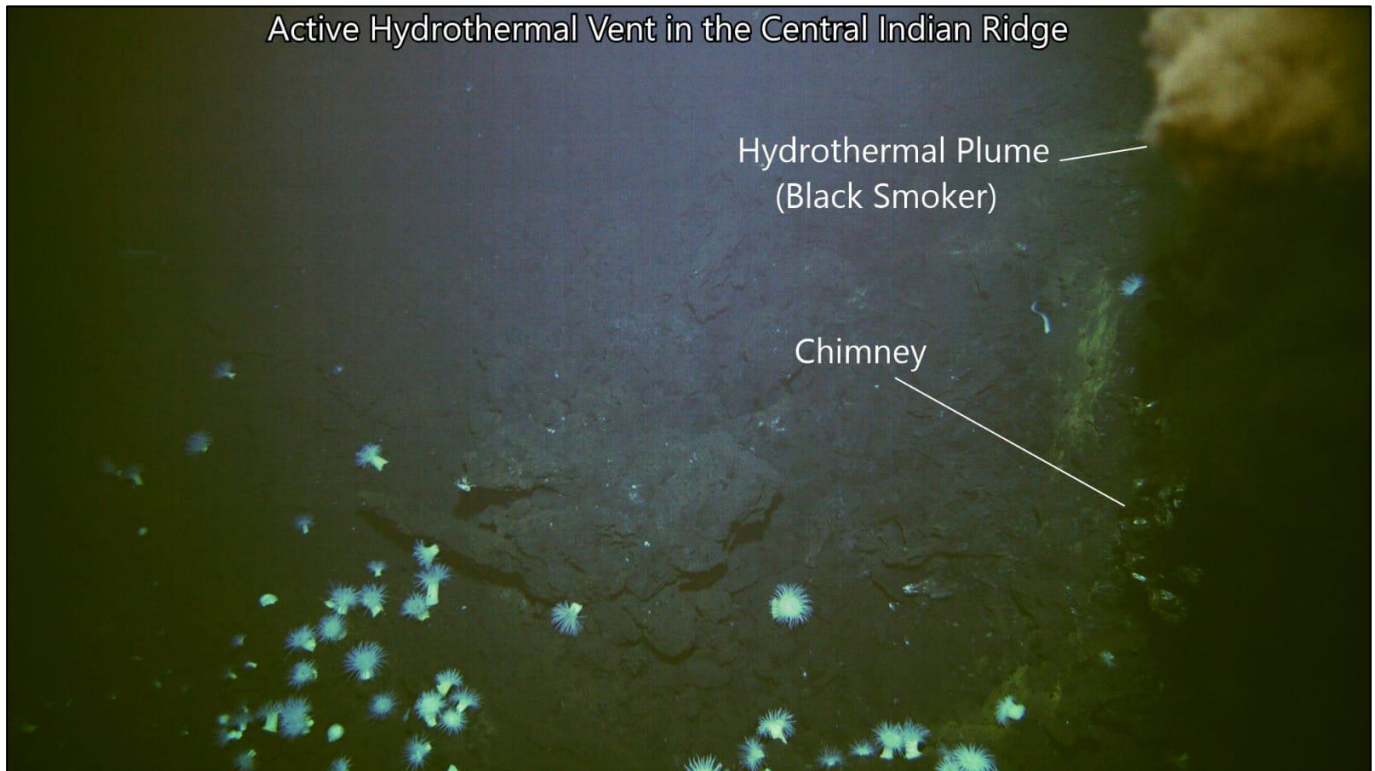
In a first, Indian oceanographers have captured the image of an active hydrothermal vent located 4,500 metres below the surface of the Indian Ocean.

Background: -

- This discovery could significantly enhance India's Deep Ocean mission, especially the Samudrayaan mission, focusing on mineral exploration from inactive vents.

Key takeaways

- Hydrothermal Vents are underwater geothermal systems found on the ocean floor, typically near tectonic plate boundaries. These vents emit mineral-rich, superheated water due to volcanic activity beneath the Earth's crust.
- Formation:
 - Occur at mid-ocean ridges or subduction zones where tectonic plates diverge or converge.
 - Cold seawater infiltrates the Earth's crust, heats up due to magma, and re-emerges through cracks, carrying dissolved minerals.
- Types of Vents:
 - Black Smokers: Emit dark, mineral-rich plumes due to high concentrations of metals like iron and sulfides.
 - White Smokers: Release cooler, lighter-colored fluids rich in silica and barium.
- Chemical Composition: Rich in sulfides, methane, and minerals like iron, manganese, and copper.



Ecological Importance

- **Unique Ecosystems:**
 - Support chemosynthetic organisms (e.g., bacteria and archaea) that derive energy from chemical reactions rather than sunlight.
 - Host diverse life forms like giant tube worms, clams, and shrimp.
- **Biological Discoveries:**
 - Provide insights into extremophiles, organisms thriving in high-pressure, high-temperature environments.
 - Offer clues about the origins of life on Earth.

Scientific and Economic Importance

- **Mineral Deposits:**
 - Potential sources of valuable metals like gold, silver, and copper.
 - Can aid in deep-sea mining initiatives.
- **Astrobiology:** Analogous environments might exist on other planets or moons, like Europa or Enceladus, offering insights into extraterrestrial life.
- **Climate Studies:** Play a role in understanding carbon and sulfur cycles in Earth's oceans.



കേരള സ്റ്റേറ്റ് സിവിൽ സർവീസ് അക്കാദമി



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