KERALA STATE CIVIL SERVICE ACADEMY

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GOVERNOR'S POWER OF WITH HOLDING A BILL

The Supreme Court questioned Tamil Nadu Governor R N Ravi's decision to withhold assent to some Bills presented to him by state legislature and said "he seems to have adopted his own procedure".

Background:

- On November 13, 2023, the Governor R.N. Ravi had declared that he was withholding assent on 10 bills passed by the Tamil Nadu state assembly. Subsequently, the assembly convened a special session on November 18, 2023, and re-enacted the same bills.
- This time, the governor had to proceed to refer all 10 bills to the President for consideration; the President had assented to one Bill, rejected seven and did not consider two proposed laws.
- The state government argued that the governor's conduct was that of a political opponent.

Key takeaways

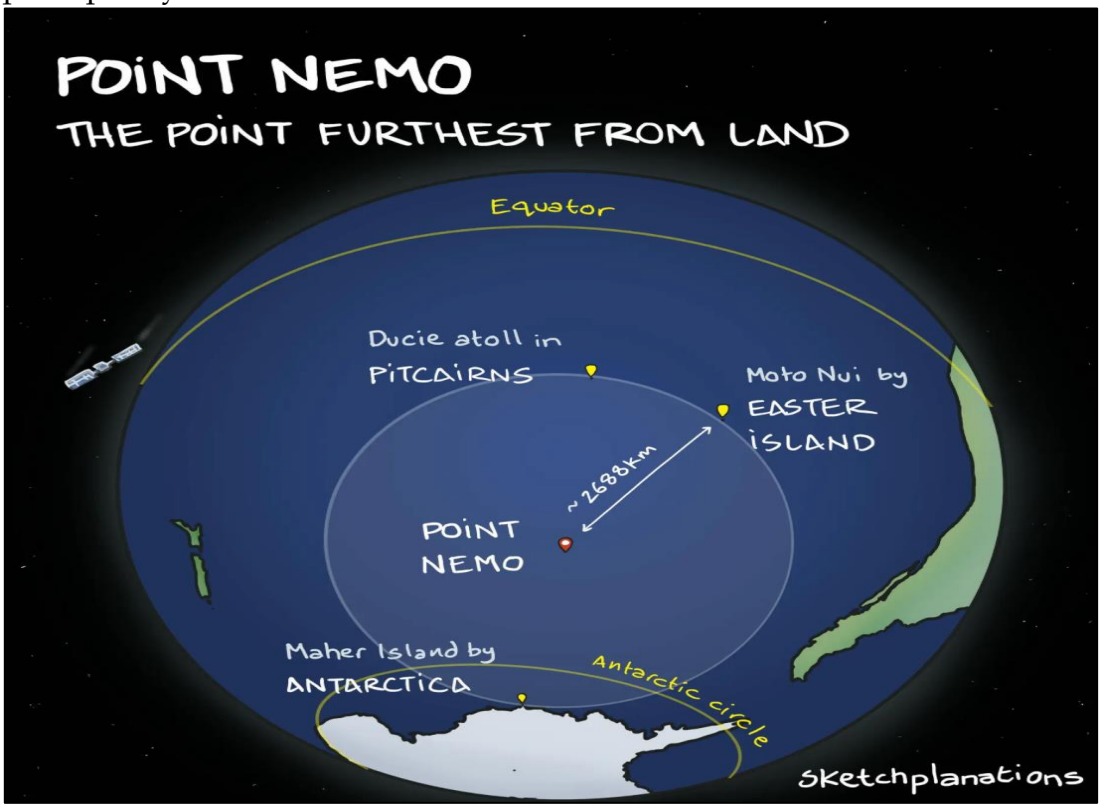
- While Article 163 of the Constitution deals with the powers of the Governor generally, Article 200 specifically deals with the issue of granting assent to Bills.
- Both the provisions are read together to determine the contours of the power the Governor holds on this issue.
- When a Bill passed by the legislature of a state is presented to the Governor, the Governor has four options: (1) grant assent to the Bill; (2) withhold assent to the Bills; (3) return the Bills for reconsideration; or (4) reserve the Bill for the consideration of the President.
- Article 200 reads: When a Bill has been passed by the Legislative Assembly of a State or, in the case of a State having a Legislative Council, has been passed by both Houses of the Legislature of the State, it shall be presented to the Governor and the Governor shall declare either that he assents to the Bill or that he withholds assent therefrom or that he reserves the Bill for the consideration of the President.
- However, the Article has a key provision. It says that the Governor "may, as soon as possible" return Bills other than money Bills, with a message requesting that the House reconsider it in parts or in whole.
- However, once the Legislative House reconsiders the Bill and sends it to the Governor once again, the Governor "shall not withhold assent therefrom".
- An indefinite timeline in deciding on Bills can paralyse the elected government. At the same time, giving assent to Bills is one of the few areas in which the Governor can exercise his discretion.
- But again, this discretion cannot be used arbitrarily or based on a personal preference, but only in Constitutional terms with cogent reasons.
- Additionally, Article 200 uses the word "shall" which indicates that the framers of the Constitution intended a mandatory tone for the Governor on this aspect. The Supreme Court in its landmark 2016 ruling in the Arunachal Pradesh Assembly case (Nabam Rebia and Bamang Felix vs Deputy Speaker) discussed this aspect briefly.

POINT NEMO

Two young women officers of the Indian Navy recently crossed the Point Nemo, as a part of their efforts to circumnavigate the globe in a sailboat.

Background: –

- A Spanish research vessel Hespérides in 1999 had become the first ship to sail to Point Nemo, but not many vessels passed through the point since then. The INSV Tarini passed through the point purely on sails.



Key takeaways

- Point Nemo is the most remote location in the world's oceans, also called the Oceanic Pole of Inaccessibility.
- It is situated in the South Pacific Ocean, 2,688 km (1,450 nautical miles) from the nearest land.
- Closest Humans: Astronauts aboard the International Space Station (ISS), orbiting at ~400 km above Earth, are often the closest humans to Point Nemo.
- Spacecraft Cemetery:
  - Used as a dumping ground for decommissioned spacecraft, including Russian, American, and European satellites.
  - The Mir Space Station and parts of the International Space Station are planned to be deorbited here.
- Extreme Isolation:
  - It lies within the South Pacific Gyre, a vast ocean current that blocks nutrient-rich waters.
  - As a result, marine life is scarce, and it is one of the least biologically active regions of the ocean.

Gyre Meaning

In simple words, Gyre means the movement of water in a circular motion. If we talk about the oceans, when the movement of ocean currents happen in the circular path, be it in a clockwise direction or anti-clockwise direction, this movement is known as a gyre. These ocean gyres are a combination of ocean currents that can be warm or cold and are found in all the oceans.

These ocean gyres lead to having great impacts on the surroundings whereas they are influenced by majorly two factors such as Coriolis force as well as the winds. Besides these, they are also driven by temperature, salinity and other factors.

GSLV-F15

ISRO successfully launched the GSLV-F15 rocket, placing the NVS-02 satellite into GTO. This milestone marks ISRO's 100th launch, boosting India's space prowess.

- The NVS-02 is part of **NavIC (Navigation with Indian Constellation)**, India's **regional navigation satellite system**, enhancing positioning accuracy.

About NVS-02 Satellite:

What is NVS-02?

- NVS-02 is a navigation satellite launched as part of NavIC (Navigation with Indian Constellation).
- It is the **second satellite in the NVS series**, replacing aging IRNSS satellites.

Orbital Placement:

- Placed in a **Geosynchronous Transfer Orbit (GTO)** by GSLV-F15.
- Final orbit at **36,000 km altitude** for regional positioning services.

Aim & Purpose

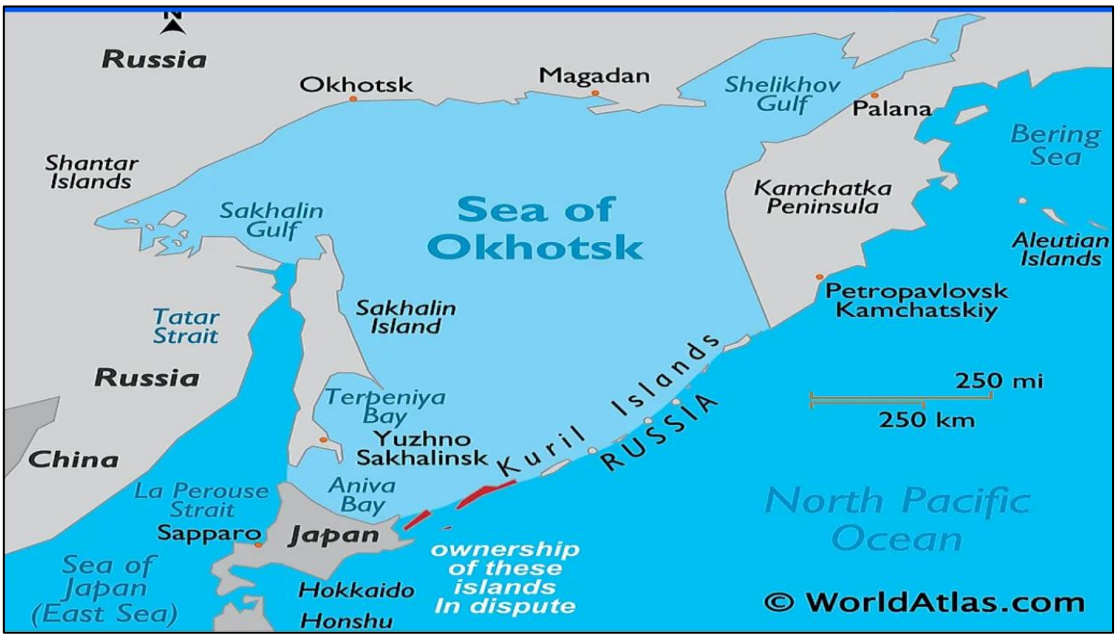
- To enhance navigation accuracy over India and surrounding regions (1,500 km beyond the Indian mainland).
- Supports military and civilian applications, including disaster management, fleet tracking, and precision agriculture.

SEA OF OKHOTSK

Japan scrambled fighter jets after Russian bombers flew over international waters around the country.

Background: –

- Russia's Defense Ministry said that two long-range bombers flew over international waters in the Sea of Japan and the Sea of Okhotsk.



Key takeaways

- The Sea of Okhotsk is a marginal sea of the Pacific Ocean, located between Russia and Japan.
- It is bordered by:
  - The Kamchatka Peninsula to the east
  - The Kuril Islands to the southeast
  - The Sakhalin Island to the west
  - The Siberian coast to the northwest
  - The Hokkaido Island (Japan) to the south

- The sea remains frozen for nearly six months a year, from November to May, due to extreme cold in Siberia.
- It is one of the world's iciest seas, significantly affecting navigation and fishing activities.
- Rich in Marine Resources: Supports fishing industries of Russia and Japan, with abundant salmon, herring, and crab.
- Energy Reserves: Contains oil and natural gas fields.
- Disputes exist between Russia and Japan over the Kuril Islands, which affect territorial claims in the Sea of Okhotsk.

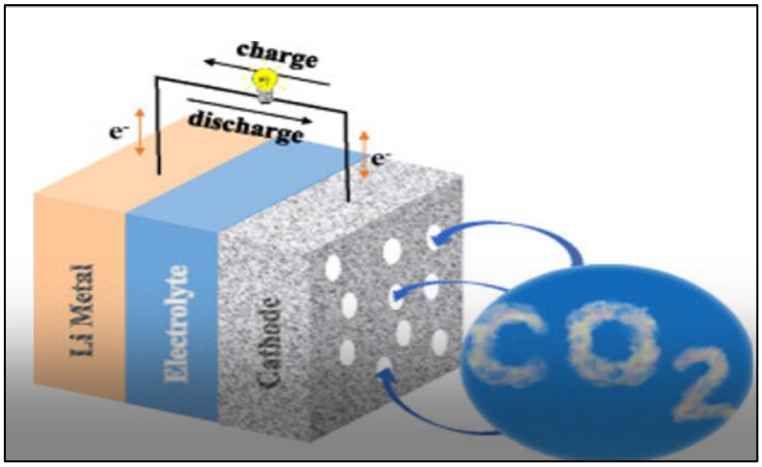
CO2 BATTERY

NTPC announced the launch of CO2 battery energy storage technology – a pioneering step towards sustainable and innovative energy solutions.

This cutting-edge project is spearheaded by NETRA, the R&D wing of NTPC, in collaboration with M/s Triveni Turbine Limited and M/s Energy Dome, Italy.

Background: –

- A CO2 Battery with an energy capacity of 160 MWh will be set up at NTPC Kudgi. This initiative is a part of NTPC's broader strategy to diversify its energy portfolio and enhance renewable power generation.



Key takeaways

- A CO_2 battery is an innovative energy storage system that utilizes carbon dioxide (CO_2) to store and release electrical energy, offering an alternative to traditional lithium-ion batteries.
- This technology is particularly suited for long-duration energy storage, addressing the intermittency of renewable energy sources like wind and solar.
- Unlike Battery Energy Storage Systems (BESS), which operate on electrochemistry, the CO2 Battery is based on specialized electro-mechanical turbomachinery.
- It functions on a 'Closed Brayton Thermodynamic Cycle' using anhydrous CO2 as the process fluid. The charging and discharging of electricity occur by manipulating the physical parameters of CO2 from vapor to liquid state and vice versa.
- How CO_2 Batteries Work:
    - Energy Storage (Charging):
        - CO_2 gas is compressed, which heats it to approximately 400°C.
        - The heated CO_2 is then cooled through a heat exchanger, allowing it to liquefy.
        - The liquid CO_2 is stored under pressure in specialized containers.

- Energy Release (Discharging):
  - When electricity is needed, the stored liquid CO_2 is evaporated and passed through the heat exchanger, where it absorbs heat and reverts to a gaseous state.
  - The expanding CO_2 gas drives a turbine, generating electricity.
  - CO_2 is re-captured and reused, creating a closed-loop system.
  - This closed-loop system efficiently stores energy and can release it over extended periods, making it ideal for balancing supply and demand in power grids.

- Advantages of CO_2 Batteries:

  - Cost-Effectiveness: Utilizing readily available CO_2 and standard industrial components reduces costs compared to lithium-ion batteries.

  - Scalability: The modular design allows for easy scaling to meet various energy storage needs.

  - Environmental Benefits: By using CO_2 in a closed-loop system, these batteries minimize greenhouse gas emissions and offer a sustainable energy storage solution.

  - No requirement for critical minerals like lithium and cobalt.

POTASH MINING IN INDIA

Punjab Mining Minister Barinder Kumar Goyal said the government will explore potash mining in Fazilka and Sri Muktsar Sahib districts, where surveys previously detected large mineral reserves in three mining blocks.

Background: –

- Surveys of the Geological Survey of India (GSI) have also identified reserves in parts of Rajasthan. These findings highlight the potential for potash mining in both states, reducing India's dependence on imports and bolstering the domestic fertilizer industry.

Key takeaways

- Potash refers to potassium-bearing minerals that are primarily used in fertilisers. Over 90% of potash is used as fertilizer and it is one of the three primary agricultural nutrients (Nitrogen, Phosphorus and Potassium or N-P-K).
- While all potash fertilizers contain potassium there are a number of different forms in which it exists. Among these forms is Sulphate of Potash (SOP), a premium potash fertilizer that is free of chloride (a compound considered harmful to plants). On the other hand, Muriate of Potash or MOP contains some chloride.
- While SOP is used primarily on high-value crops, usually leafy plants, fruits and vegetables, MOP is commonly used on carbohydrate-type crops, such as wheat.

Where were potash reserves found?

- Punjab is now the second state after Rajasthan to have significant potash reserves. In Rajasthan, potash deposits were mainly found in the northwestern Nagaur-Ganganagar basin.
- According to the National Mineral Inventory (NMI) database, the total potash resources are estimated at 23,091 million tonnes in 2020. Rajasthan alone contributes 89% to the total resources.
- However, despite having substantial reserves, exploration and extraction have been delayed. So far, India has not engaged in potash mining.
- As of now, the country is completely dependent on imports.

GARBH-INi-DRISHTI

India's commitment to cutting-edge biomedical research and innovation took a significant leap forward with the launch of the GARBH-INi-DRISHTI data repository.

Background: –

- It is part of the GARBH-INi program, which stands for Interdisciplinary Group for Advanced Research on Birth Outcomes – DBT India Initiative. This initiative is led by the Translational Health Science and Technology Institute (THSTI) in collaboration with the Department of Biotechnology (DBT), Government of India.

Key takeaways

- Garbhini-Drishti is a comprehensive data dashboard that provides an extensive overview of one of South Asia's largest pregnancy cohort datasets.

- Data Collection: The platform collects clinical, epidemiological, imaging, and biospecimen data from over 12,000 pregnant women, newborns, and postpartum mothers. This data is collected at multiple time points throughout pregnancy and the postpartum period.
- Research Focus: The primary aim is to improve maternal and neonatal health outcomes by enabling transformative research.
- Data Accessibility: Garbhini-Drishti provides clear guidance on accessing the dataset for approved research purposes, fostering collaboration and impactful discoveries.
- Comprehensive Assessments: Participants undergo detailed assessments during pregnancy, including clinical evaluations, ultrasound imaging, and collection of various biospecimens. Post-natal follow-ups continue to capture critical maternal and neonatal health outcomes.
- Quality Control: The platform ensures the accuracy, reliability, and consistency of data collection through regular training of the research team and concurrent monitoring for errors.

INDIA-MIDDLE EAST-EUROPE ECONOMIC CORRIDOR (IMEC)

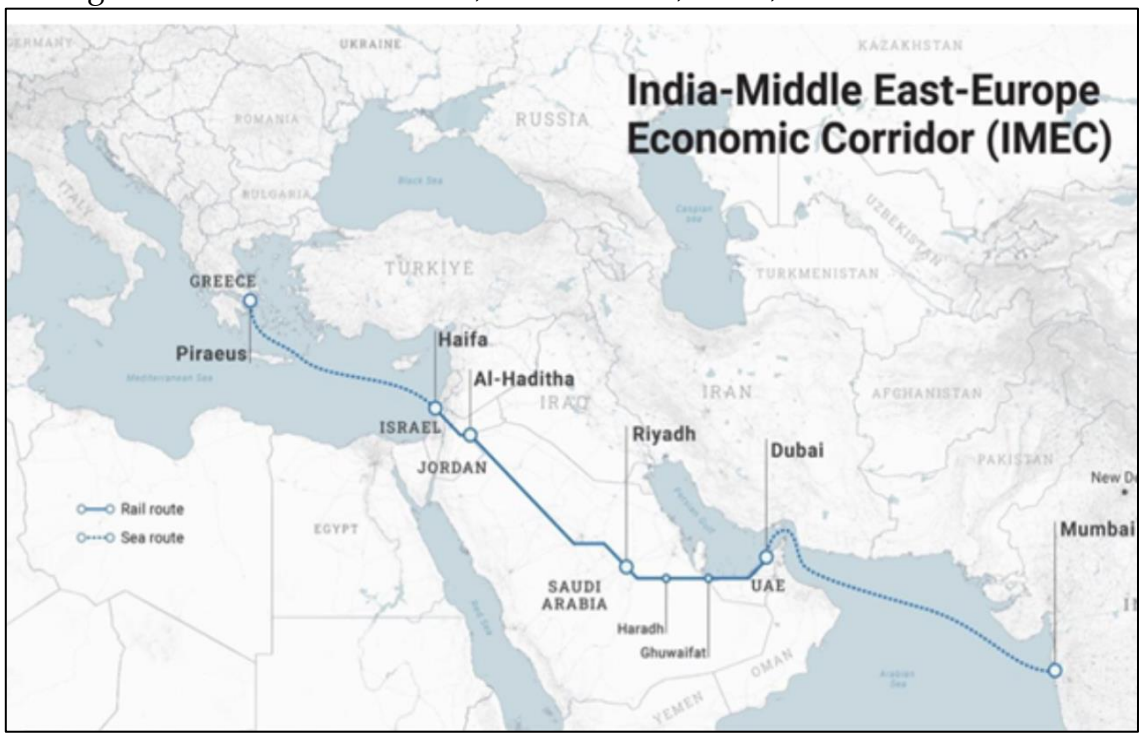
Greek Foreign Minister George Gerapetritis has affirmed Greece's full support for the India-Middle East-Europe Economic Corridor (IMEC), describing it as a project for peace.

Background: –

- Minister acknowledged that the initiative, launched in September 2023, has faced delays due to conflicts in West Asia, particularly the Israel-Gaza war.

Key takeaways

- The India–Middle East–Europe Economic Corridor (IMEC) aims at boosting economic development and enhancing inter-regional connectivity between Asia, the Persian Gulf, and Europe.
- Announced during the 2023 G20 New Delhi summit, the project seeks to create a modern trade route that reconnects historical pathways, linking India to Europe via key partners including the United Arab Emirates, Saudi Arabia, Israel, and Greece.



Key Features and Objectives

- Bifurcated Route: IMEC is envisioned with two main legs: an eastern corridor that channels container traffic from India to the Gulf region and a northern corridor that connects the Gulf to Europe.
- This multimodal pathway will integrate high-speed rail, shipping lanes, digital connectivity (through undersea cables), and even renewable energy infrastructure like clean hydrogen pipelines.

- Economic and Logistical Advantages: The corridor is expected to reduce transit times by up to 40 percent and lower logistics costs significantly. It is seen as a strategic tool to diversify trade routes away from traditional chokepoints like the Suez Canal.
- Counterbalance to China's Belt and Road Initiative: IMEC is interpreted as a counterweight to China's Belt and Road Initiative (BRI).

MARINE HEATWAVES

The marine heatwaves (MHWs) linked to the death of more than 30,000 fish off the coastal Western Australia in January were made up to 100 times more likely to occur due to climate change.

Background: –

- The MHWs began in September 2024 and are still ongoing in the region.
- The current MHWs are the second-worst in Western Australia's recorded history. The region saw its most intense MHWs during the 2010–11 summer, when temperatures soared to 5 degrees Celsius above average.

Key takeaways

- A marine heatwave occurs when the surface temperature of a particular region of the sea rises to 3 or 4 degrees Celsius above the average temperature for at least five days.
- MHWs can last for weeks, months or even years.
- A 2021 report by the International Union for Conservation of Nature (IUCN) said MHWs have increased by 50% over the past decade and now last longer and are more severe.
- MHWs have been recorded in surface and deep waters, across all latitudes, and in all types of marine ecosystems, the report said.

Why have marine heatwaves intensified?

- The primary reason is the climate crisis. As global temperatures have soared to 1.3 degrees Celsius above the pre-industrial levels, 90% of the extra heat has been absorbed by the ocean.
- Global mean SST increased close to 0.9 degrees Celsius since 1850, and the rise over the last four decades is around 0.6 degrees Celsius. As a result, MHWs have become more frequent, long-lasting, and severe.

Impact Of Marine Heatwaves

- MHWs can be devastating for marine life. For example, the 2010-11 MHWs in Western Australia caused large-scale fish kills. It also destroyed kelp forests and fundamentally altered the ecosystem of the coast. Kelps usually grow in cooler waters, providing habitat and food for many marine animals.
- These heatwaves contribute to coral bleaching, which reduces the reproductivity of corals and makes them more vulnerable. Thousands of marine animals depend on coral reefs for survival and damage to corals could, in turn, threaten their existence.

REBELS IN AFRICA

Days after the capture of Goma, M23 rebels and allied Rwandan forces have launched a new offensive in the eastern Democratic Republic of Congo (DRC).

Background:

- The ongoing insurgency in the DRC, which is the continuation of protracted turmoil and insecurity that has plagued the region for generations, is intertwined with the region's geography and resources.

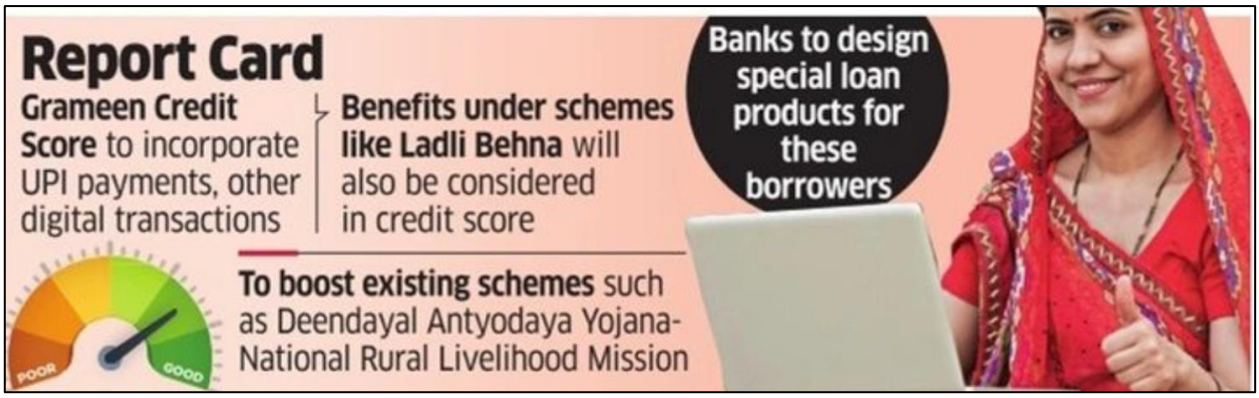
The Great Lakes Region of Africa

- The Great Lakes Region of Africa, located in East and Central Africa, is a series of lakes in and around the East African Rift Valley.
- This network of large freshwater lakes in the heart of Africa is endowed with various natural resources, which give the East African Rift Valley a unique ecology and socioeconomic significance.

- These lakes include Lake Victoria, Lake Tanganyika, Lake Malawi, Lake Albert, Lake Kivu and Lake Edward. They are surrounded by ten riparian states that include Burundi, the DRC, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, and Zambia.
- Most of them have a traumatic past, while violent conflict is endemic in the region.
- The resource curse—whereby abundant natural wealth spurs conflict and corruption—is a recurring theme.

GRAMEEN CREDIT SCORE

The Grameen Credit Score Scheme was announced by Finance Minister Nirmala Sitharaman in the 2025 budget. This initiative aims to enhance financial inclusion for Self Help Groups (SHGs) and rural women entrepreneurs in India. It represents shift in assessing the creditworthiness of millions of women involved in SHGs. The scheme seeks to align these women with the formal financial system of India.



About Grameen Credit Score

- The Grameen credit score is a new framework designed specifically for rural women.
- It focuses on providing support to women entrepreneurs in SHGs.
- This score will help in evaluating their creditworthiness.

Objectives of the Scheme

The primary goal is to address the barriers women face in obtaining credit. Many SHGs are not connected to formal credit systems. This lack of connection hinders financial inclusion.
The Grameen credit score aims to formalise SHG transactions within the central credit system. This will enable financial institutions to assess creditworthiness more accurately.

Positive Changes Expected

The introduction of the Grameen credit score is anticipated to bring several benefits. Firstly, it enhances financial access for rural women, allowing them to expand their businesses.
Secondly, it introduces concepts such as credit cards and loan repayment. Thirdly, it will improve credit assessment through a digital framework. This framework will help bridge gaps in the current credit bureau system.

Customized Financial Products

The scheme will offer customised financial products, including credit cards for micro-enterprises. These cards will have limits of up to ₹5 lakh. This move is expected to empower grassroots-level entrepreneurs . It will provide them with the necessary tools to manage their finances effectively.

Economic Impact

The Grameen credit score is poised to promote economic stability in rural areas. Increased access to credit will enable women-led SHGs to contribute more effectively to their households.
This, in turn, will encourage growth in the rural community. The scheme aligns with the government's broader goals of sustainable development and poverty alleviation.

Monitoring and Improvement

The initiative allows women to monitor their credit scores and loan capacities continuously. This ongoing assessment will help them improve their financial standing. It also encourages responsible borrowing and repayment practices.

OCEAN COORDINATION MECHANISM

The Ocean Coordination Mechanism (OCM) was launched by the Intergovernmental Oceanographic Commission of UNESCO. This initiative aims to address the critical challenges facing marine environments in the Caribbean and the North Brazil Shelf.

These regions are vital for biodiversity, local economies, and climate resilience. The OCM seeks to enhance the management of shared ocean resources through collaboration and clear objectives.

Importance of Healthy Oceans

- Oceans cover over 70% of the Earth's surface.
- They play an essential role in regulating climate and supporting billions of livelihoods.

- Healthy oceans are crucial for biodiversity, fisheries, and coastal communities.
- They also mitigate the impacts of climate change and provide essential resources for human sustenance.

Challenges Facing Marine Environments

- Marine ecosystems are under threat from pollution, overfishing, climate change, and habitat destruction.
- These threats endanger marine life and the well-being of communities that depend on ocean resources.
- Effective coordination and management are needed to combat these challenges and ensure sustainable use of marine resources.

Objectives of the Ocean Coordination Mechanism

- The OCM aims to build on lessons learned from previous initiatives like the Pacific Islands Regional Ocean Policy.
- It sets clear objectives for sustainable marine resource management.
- The initiative promotes collaboration among stakeholders to create an inclusive approach to ocean conservation.

Financial Sustainability of OCM

- The OCM has secured an initial investment of $15 million from the Global Environment Facility.
- Additional co-financing of $126.02 million has also been facilitated by the GEF.
- However, this funding is less than other global conservation initiatives, raising concerns about the OCM's ability to meet its ambitious goals.

Community Involvement in Conservation Efforts

One of the OCM's strengths is its commitment to involving local communities. By integrating traditional knowledge with scientific research, the initiative ensures that conservation efforts are culturally relevant. This approach enhances the effectiveness of marine conservation strategies.

Blue Carbon Projects

The OCM promotes blue carbon projects that utilise coastal ecosystems for carbon storage. These projects benefit both the environment and local communities. They contribute to climate change mitigation while supporting economic development in coastal areas.

AADHAR AUTHENTICATION AMENDMENT RULES 2025

The Aadhaar Authentication for Good Governance (Social Welfare, Innovation, Knowledge) Amendment Rules, 2025 were recently published by the Ministry of Electronics and Information Technology (MeitY). This amendment aims to improve transparency and inclusivity in governance.

It expands the use of Aadhaar authentication for both governmental and non-governmental entities. The goal is to enhance service delivery and ease of living for residents.

Enhancing Aadhaar's Scope

- The amendment broadens the application of Aadhaar authentication.
- It allows both government and private entities to use Aadhaar for various services.
- This includes sectors like e-commerce, travel, tourism, hospitality, and healthcare.
- The primary aim is to facilitate trusted transactions between service providers and seekers.

Streamlined Approval Process

- Entities wishing to use Aadhaar authentication must apply through a designated portal.
- They need to provide details of their intended use.
- The Unique Identification Authority of India (UIDAI) will review these applications.
- MeitY will grant approval based on UIDAI's recommendations.
- This process aims to simplify access to Aadhaar-enabled services.

Promoting Innovation and Knowledge Dissemination

The amendment encourages the development of innovative digital solutions. By leveraging Aadhaar authentication, entities can improve service delivery. This will promote knowledge dissemination and enhance the ease of living for residents. The focus is on creating partnerships between the government and private sectors.

Changes to Previous Rules

The 2025 amendment modifies language from earlier rules established in 2020. The previous emphasis on preventing leakage of public funds has been removed. The new rules allow a broader range of entities to propose Aadhaar authentication use. This shift reflects a move towards more inclusive governance practices.

Potential Use Cases

The amendment opens up various use cases for the private sector. Hotels can implement better authentication processes for guests. The healthcare industry can also benefit from streamlined Aadhaar verification. These applications are expected to enhance service efficiency and customer satisfaction.

SPHERE-X TELESCOPE

NASA is on the brink of launching SPHEREx, a groundbreaking space telescope. Scheduled for launch no earlier than February 27, 2025, SPHEREx aims to provide a comprehensive view of the cosmos.

With a budget of just $488 million, it promises to deliver capabilities that may surpass those of the James Webb Space Telescope (JWST), which cost $10 billion. SPHEREx's mission is to unravel the mysteries of the universe, particularly the events surrounding the Big Bang.

About SPHEREx

- SPHEREx is designed to survey the entire sky.
- Unlike JWST, which focuses on specific targets, SPHEREx will collect data across 102 different infrared colours.
- This will allow it to capture a vast amount of information about millions of celestial objects.
- The telescope measures 8.5 feet tall and 10.5 feet wide, slightly larger than JWST.
- It will take 600 images daily, creating a comprehensive all-sky map every six months.

Cosmic Mapping and Data Collection

- Over its 27-month mission, SPHEREx will complete four full scans of the night sky.

- This extensive mapping will provide vital information about the distribution of over 450 million galaxies.
- Such data will be crucial for understanding cosmic evolution and the formation of galaxies over billions of years.
- SPHEREx will serve as a vital resource for future telescopes, including JWST and the Nancy Grace Roman Space Telescope.

Investigating the Big Bang

- One of SPHEREx's primary objectives is to explore the origins of the universe.
- Scientists theorise that the universe underwent rapid expansion during a phase known as cosmic inflation, shortly after the Big Bang. SPHEREx will help map this structure, potentially revealing how matter was distributed in the early universe.
- This could lead to breakthroughs in our understanding of galaxy formation.

Studying the Milky Way

In addition to its cosmic surveys, SPHEREx will focus on our own galaxy, the Milky Way. It aims to map over 100 million stars and identify organic molecules within interstellar clouds. These molecules could provide vital information about the origins of life, not only on Earth but also on other planets.

Impact on Future Space Exploration

NASA has termed SPHEREx has the potential to revolutionise space exploration. The telescope's findings will guide astronomers towards regions that warrant deeper investigation. By capturing the collective light of the universe, SPHEREx will enhance our understanding of galaxy structure and evolution across cosmic time.

UNION BUDGET 2025

In the Union Budget 2025, Finance Minister Nirmala Sitharaman introduced a five-year mission aimed at improving productivity and sustainability in cotton farming.

A key focus of this initiative is the promotion of Extra-Long Staple (ELS) cotton varieties. This move is as it seeks to elevate the quality of Indian cotton and enhance farmers' incomes.

What Is Extra-Long Staple Cotton?

- Extra-Long Staple cotton is defined by its fibre length, which exceeds 30 mm.
- It is primarily derived from the species Gossypium barbadense, often referred to as Egyptian or Pima cotton.
- In contrast, the predominant cotton variety in India, Gossypium hirsutum, falls under the medium staple category, with fibres measuring between 25 to 28.6 mm.
- ELS cotton is renowned for its superior quality and is mainly cultivated in countries like China, Egypt, Australia, and Peru.

Current ELS Cotton Cultivation in India

In India, ELS cotton is grown in limited regions, specifically in the rain-fed areas of Atpadi taluka in Maharashtra and around Coimbatore in Tamil Nadu. Despite its high quality, the cultivation of ELS cotton remains low due to several challenges faced by farmers.

Challenges in ELS Cotton Adoption

Farmers in India are hesitant to adopt ELS cotton primarily due to lower yields. While medium staple cotton yields between 10 to 12 quintals per acre, ELS cotton yields only 7 to 8 quintals. Additionally, farmers struggle to sell ELS cotton at premium prices, as adequate market linkages are not readily available. This lack of access to markets hampers the financial viability of ELS cotton farming.

Potential of the Cotton Mission

- The Cotton Mission aims to provide advanced scientific and technological support to farmers.
- This includes enhancing pest management and increasing yields through better seed varieties and agronomic practices.
- Adoption of genetically modified (GM) technologies, such as herbicide-resistant HtBT cotton, could improve weed management and overall productivity.
- Currently, India's average yield per acre is substantially lower than that of countries like Brazil and China.
- This mission follows the 5 F principle: Farm to Fibre, Fibre to Factory, Factory to Fashion, Fashion to Foreign.
- It aims to raise farmers' incomes and enhance India's textile sector globally.
- Mission aims to reduce dependence on cotton imports and ensure stable raw material supply.
- It will help India's textile industry grow sustainably, with 80% of the sector driven by MSMEs.

Other Government Measures for Textile Industry

Increased Budget Allocation for Textiles

- 2025-26 budget allocation for the Ministry of Textiles is ₹5272 crore.
- Represents a 19% increase from ₹4417.03 crore in the previous year.
- Demonstrates the government's focus on boosting the textile sector.

Promotion of Technical Textiles

- Focus on domestic production of agro-textiles, medical textiles, and geo-textiles.
- Two new types of shuttle-less looms exempted from customs duty, reducing costs for modern machinery.

Customs Duty on Knitted Fabrics

- Increased to "20% or ₹115 per kg, whichever is higher."
- Aims to protect domestic producers from cheap imports and enhance competitiveness.

Support for Handicraft Exports

- Export time extended from 6 months to 1 year, with an additional 3-month extension option.
- Nine new items, including sea shells and cattle horn, added to the duty-free list for export production.

Support for MSMEs in Textile Sector

- Introduction of National Manufacturing Mission, Export Promotion Mission, and Bharat Trade Net to aid exports.
- Enhanced credit and coverage for MSMEs, along with the Fund of Funds, to promote growth and employment.
- Revised MSME classification criteria for broader access to resources and support.

Future Prospects for Indian

Cotton

The introduction of the Cotton Mission presents an opportunity for Indian farmers to improve their practices and yields. By leveraging modern technologies and improving market access, the mission aims to elevate the status of Indian cotton on the global stage. This could lead to an increase in the cultivation of premium varieties like ELS cotton, benefiting both farmers and the textile industry.

GOLDEN HEADED CISTICOLA

The Golden-headed Cisticola (Cisticola exilis) has made headlines following its recent sighting in Mathikettan Shola National Park, Idukki. This discovery marks addition to the avian diversity of the southern Western Ghats. Bird watchers identified the species after an extensive absence in this region.

Background of the Species

- The Golden-headed Cisticola is a small bird typically found in grasslands.
- It is known for its vibrant golden-orange plumage, especially in males during the breeding season.
- The species is characterised by its pinkish beak and black streaks on its back.
- Its distinctive call makes it easier to identify in the wild.

Significance of the Discovery

- This sighting is noteworthy as it represents the first observation of the Golden-headed Cisticola in the southern part of the Palakkad Gap.
- Previously, the bird had only been documented in parts of Karnataka, Tamil Nadu, and northern Kerala.
- The discovery puts stress on the rich biodiversity of the Western Ghats and marks the need for further research in this ecological hotspot.

Conservation Status

While the conservation status of the Golden-headed Cisticola is not critically endangered, habitat preservation is essential. The Western Ghats are under threat from various anthropogenic activities. Protecting grassland habitats is vital for sustaining the populations of this and other bird species.

Mathikettan Shola National Park

- Mathikettan Shola National Park is situated in Kerala's Idukki district.
- It was notified as national park in 2008 due to its significance as an elephant strip and the unique nature of the shola forest.

GAMBUSIA AFFINIS

The use of invasive fish species for mosquito control has sparked controversy in India. The National Green Tribunal recently directed the Centre to respond regarding the release of two alien fish species – Gambusia affinis (Mosquitofish) and Poecilia reticulata (Guppy). These species are employed in various states to manage mosquito populations. However, concerns have arisen regarding their impact on local ecosystems.

Invasive Species

- Invasive species are non-native organisms that disrupt local ecosystems.
- They often outcompete indigenous species for resources.
- The introduction of invasive species can lead to ecological imbalances.

Details of Fish Species

- Gambusia affinis, commonly known as Mosquitofish, is widely used for mosquito control. It is effective in consuming mosquito larvae. However, its introduction has been banned in countries like Australia and New Zealand due to its invasive nature.
- Poecilia reticulata, or Guppy, is also used for similar purposes. Both species have been released in various state of Indias, raising ecological concerns.
- The National Biodiversity Authority has classified Gambusia affinis and Poecilia reticulata as invasive due to their detrimental effects.

States Involved in Fish Release

- The release of Mosquitofish occurred in states including Assam, Arunachal Pradesh, Gujarat, Karnataka, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, Odisha, Punjab, and Andhra Pradesh.
- Guppies were released primarily in Maharashtra, Karnataka, Punjab, and Odisha.
- The widespread distribution of these species poses risks to local biodiversity.

Ecological Impact

- The introduction of these invasive fish can lead to food scarcity for native fish species.
- They compete for food and habitat, potentially leading to the decline or extinction of indigenous species.
- This disruption can have cascading effects on the entire aquatic ecosystem.

Legal and Regulatory Response

The National Green Tribunal is addressing the issue through legal channels. It has sought responses from the Union Ministry of Health and Family Welfare, the National Biodiversity Authority, and the National Centre for Vector Borne Diseases Control. The tribunal's involvement marks the need for careful consideration of ecological impacts before implementing biological control measures.

MOUNT TARANAKI

Recently, New Zealand's Mount Taranaki, also known as Taranaki Maunga, was officially recognised as a legal person.
This landmark decision acknowledges the mountain's significance to Indigenous Māori people, granting it all the rights and responsibilities of a human being. The law is part of a broader movement to address historical injustices faced by Māori following colonisation.

Historical Context of Taranaki Maunga

- Mount Taranaki has been a revered ancestor to the Māori for centuries.
- The mountain is a dormant volcano, standing at 2,518 meters.
- Its name, Taranaki, holds deep cultural significance.
- The British colonisation in the 18th and 19th centuries led to the appropriation of Māori land and resources.
- The Treaty of Waitangi, signed in 1840, was intended to protect Māori rights but was often breached.

Legal Recognition and Personhood

- The new law establishes Taranaki Maunga as Te Kāhui Tupua, viewing it as a living entity.
- This legal framework acknowledges the mountain's rights and responsibilities.
- A governing body will represent Taranaki, consisting of local Māori iwi members and appointees from the Conservation Minister.
- This structure aims to ensure that Māori voices are integral to the mountain's management.

Cultural and Spiritual Significance

For Māori, Taranaki is not just a geographical feature but a source of cultural and spiritual sustenance. The mountain is seen as a guardian and a resting place for ancestors. The recent legal recognition is viewed as a step towards healing and restoring the connection between Māori and their ancestral lands.

PARIS AI SUMMIT

The Paris AI Summit was co-chaired by India and France at the Grand Palais, Paris. The summit builds on previous AI summits held in UK (November 2023) and South Korea (May 2024).

First AI Summit (2023, UK) & Bletchley Park Declaration

- Known as the AI Safety Summit.
- 28 countries, including India, US, UK, EU, and China, signed the Bletchley Park Declaration.
- The declaration aimed to regulate Frontier AI systems (advanced AI) to prevent misuse (terrorism, crime).

Second AI Summit (2024, Seoul)

- 16 major AI companies pledged to develop AI with transparency.
- It highlighted the need for responsible AI development.

About the Third AI Summit (2o25, Paris)

Jointly chaired by PM Narendra Modi and French President Emmanuel Macron, it witnessed the participation of over 90 countries.

Main Goals of the Summit

- Make AI independent, safe, and accessible to everyone.
- Develop environmentally friendly AI.
- Create a global AI governance system that is effective and inclusive.

Key Themes Discussed

- AI in public services.
- Future of work and AI's impact.
- Innovation and AI's role in culture.
- Building trust in AI.
- Global governance of AI.

Foundation for Global South

- A new initiative will be launched to support AI development in developing countries.

What is Tech Sovereignty?

- During the summit, French President Macron is pushing for tech sovereignty.
- Tech sovereignty is a country's ability to control and develop its own technology for economic, political, and social well-being.
- Germany defines it as the ability of a state to implement policies without being dependent on foreign technology.
- It is linked to terms like strategic autonomy, digital sovereignty, and regulatory sovereignty.
- The concept gained importance due to Western sanctions on countries like Iran, North Korea, Venezuela, and Russia.

Importance of Tech Sovereignty

- **Reduces dependence** on foreign technology.
- **Strengthens national security** by limiting foreign influence.
- **Boosts economic growth** through innovation and skilled job creation.
- **Protects digital infrastructure**, ensuring resilience in critical sectors.
- **Encourages a democratic digital order**, preventing monopoly by a few tech giants.

India's Perspective

- India's push for tech sovereignty aligns with Digital India and initiatives in AI, semiconductor manufacturing, and cybersecurity.
- The Digital Personal Data Protection (DPDP) Act, 2023 allows India to regulate data sharing with other nations.
- India's involvement in global AI and digital policies reflects its growing focus on technological self-reliance.

India-France AI Roundtable

- A side event to discuss global AI policies and India-France cooperation was organized during the summit.
- The Second India-France Al Policy Roundtable was organized by the Principal Scientific Adviser (PSA) to the Indian Government, along with IISc Bengaluru, IndiaAI Mission, and Sciences Po Paris.

Key Discussion Points:

- Data protection & sovereignty
- AI foundation models
- Cross-border data flows & global AI governance

Important AI Strategies:

- Democratizing AI access (making AI available for all)
- Developing sovereign AI models (country-specific AI models)
- Creating multilingual AI models
- Federated AI infrastructure (decentralized AI networks)
- Sustainable AI practices

India-France AI Collaboration: Both countries plan to work together on:

- Building indigenous AI models
- Cross-border AI research
- Data-sharing initiatives

PM YUVA SCHEME

Union Minister for Education, Shri Dharmendra Pradhan, launched 41 new books under the PM YUVA 2.0 scheme at the New Delhi World Book Fair 2025 today.

Background: –

- The Pradhan Mantri YUVA (Young, Upcoming and Versatile Authors) Scheme is an initiative by the Indian government aimed at nurturing young literary talent.

Key takeaways

- Launched on May 29, 2021, by the Ministry of Education, PM YUVA is designed to mentor young authors below the age of 30. The scheme aims to cultivate a new generation of writers who can contribute to the literary landscape of India.
- The primary objectives of PM YUVA include:
    - Mentorship: Providing guidance and support to young authors through experienced mentors.
    - Literary Development: Encouraging the creation of high-quality literary works in Indian languages.
    - Cultural Promotion: Highlighting Indian culture, heritage, history, and languages through literature.
    - Global Reach: Expanding the reach of Indian literature to a global audience.

Key Features

- Selection Process:
    - An all-India contest is conducted to select 75 young authors.
    - Participants submit a manuscript based on a specified theme.
    - A committee constituted by the National Book Trust (NBT) evaluates the submissions.

- Mentorship and Scholarship:
    - Selected authors receive guidance from established mentors to develop their manuscripts into full-fledged books.
    - A consolidated scholarship of ₹50,000 per month is provided for six months to each author.
- Publication and Royalty:
    - The developed manuscripts are published by the NBT.
    - Authors receive a 10% royalty on the published books.

- Themes:
    - First Edition (2021): Focused on the "National Movement of India," highlighting unsung heroes and lesser-known aspects of India's freedom struggle.
    - Second Edition (2022): Centered on "Democracy (Institutions, Events, People, and Constitutional Values)," aiming to develop writers who can explore various facets of democracy in India.

BALTIC STATES

Three Baltic states disconnected their electricity systems from Russia's power grid, the region's operators said, part of a plan designed to integrate the countries more closely with the European Union and boost security.

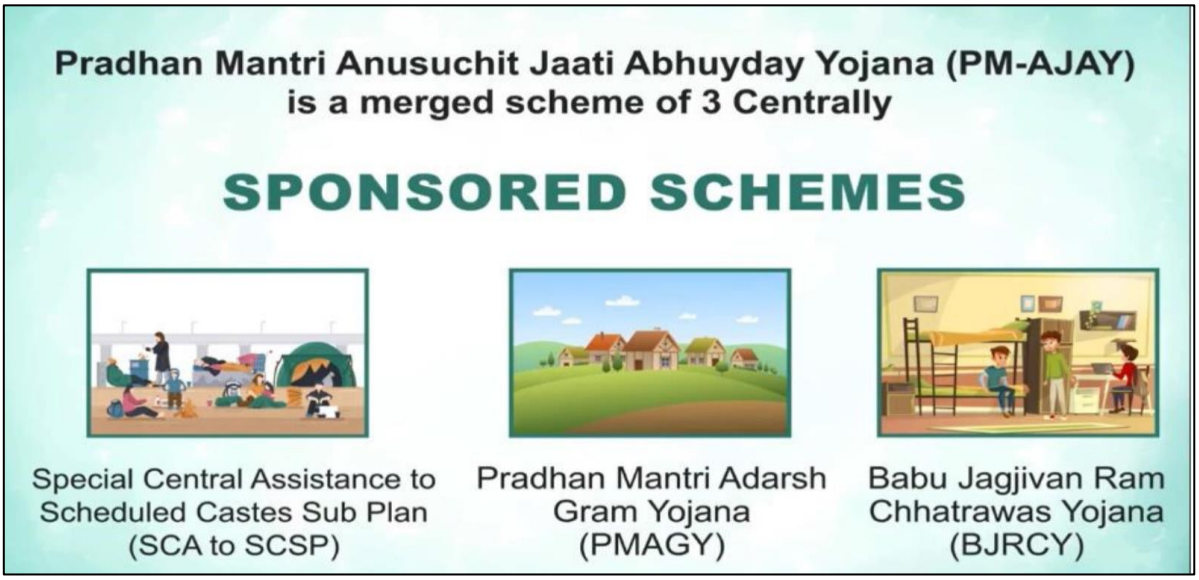
- Estonia, Latvia and Lithuania disconnected from the IPS/UPS joint network and, subject to last-minute tests, they will synchronise with the EU's grid after operating on their own in the meantime.

Key takeaways

- Plans for the Baltics to decouple from the grid of their former Soviet imperial overlord, debated for decades, gained momentum following Moscow's annexation of Crimea in 2014.
- The grid was the final remaining link to Russia for the three countries, which reemerged as independent nations in the early 1990s at the fall of the Soviet Union, and joined the European Union and NATO in 2004.
- The three staunch supporters of Kyiv stopped purchases of power from Russia following Moscow's invasion of Ukraine in 2022, but have relied on the Russian grid to control frequencies and stabilise networks to avoid outages.
- The Baltic Sea region is on high alert after power cable, telecom links and gas pipeline outages between the Baltics and Sweden or Finland. All were believed to have been caused by ships dragging anchors along the seabed following Russia's invasion of Ukraine. Russia has denied any involvement.
- For Russia, the decoupling means its Kaliningrad exclave, located between Lithuania, Poland and the Baltic Sea, is cut off from Russia's main grid, leaving it to maintain its power system alone.
- The Baltic countries spent nearly 1.6 billion euros ($1.66 billion) since 2018 to upgrade grids to prepare, while Moscow has spent 100 billion roubles ($1 billion), including on the building of several gas-fired power plants in Kaliningrad.

PM -AJAY

A meeting of the Central Advisory Committee (CAC) for the Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM-AJAY) was held under the Chairmanship of Dr. Virendra Kumar, Union Minister of Social Justice and Empowerment and Chairperson of the CAC.



Background:

- Scheduled Castes (SCs), who constitute 16.6% of our population as per 2011 Census, have historically suffered social and educational disabilities and economic deprivation arising therefrom. Accordingly, special provisions have been enshrined for advancement of their interests.

Key takeaways

- The Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM-AJAY) is a Centrally Sponsored Scheme launched in the fiscal year 2021-22 by the Ministry of Social Justice & Empowerment. It was established by merging three existing schemes:
  - Pradhan Mantri Adarsh Gram Yojana (PMAGY)
  - Special Central Assistance to Scheduled Castes Sub Plan (SCA to SCSP)
  - Babu Jagjivan Ram Chhatrawas Yojana (BJRCY)
- Objectives:
  - Reduce poverty of the SC communities by generation of additional employment opportunities through skill development, income generating schemes and other initiatives.
  - Improve socio-economic developmental indicators by ensuring adequate infrastructure and requisite services in the SC dominated villages.
  - Increase literacy and encourage enrolment of SCs in schools and higher educational institutions by providing adequate residential facilities in quality institutions, as well as residential schools where required, especially in the aspirational districts/ SC dominated blocks and elsewhere in India.

Key Components:

- Development of SC-Dominated Villages into "Adarsh Gram":
  - Transform villages with significant SC populations into model villages with access to basic services and infrastructure necessary for dignified living.
  - As of the latest data, a total of 29,881 villages have been covered under this component, with 6,087 declared as Adarsh Gram.
- Grants-in-Aid to States/Districts:
  - Provide financial assistance for projects aimed at socio-economic betterment of SC communities, including comprehensive livelihood projects and infrastructure development.
  - Central assistance of ₹3,242.07 crore has been released, benefiting 850,611 individuals.
- Construction/Repair of Hostels:
  - Build and repair hostels to support SC students, particularly those from rural and remote areas, in accessing quality education.
  - Since 2021-22, 46 hostels have been sanctioned for 5,185 beneficiaries, with an allocation of ₹126.30 crore.
- The scheme is 100% funded by the Central Government. However, the States/UTs are free to provide additional funds from their own resources if they so desire.

Exercise cyclone

India- Egypt joint special forces exercise cyclone commences in rajasthan.

Background: –

- Exercise Cyclone is an annual event conducted alternately in India and Egypt. The previous edition was held in Egypt in January 2024.

Key takeaways

- Exercise Cyclone is a joint military exercise between the Special Forces of India and Egypt, aimed at enhancing bilateral military cooperation, interoperability, and the exchange of special operations tactics. The exercise focuses on high levels of physical fitness, joint planning, and tactical drills in desert and semi-desert terrains.
- Third Edition: The third edition of Exercise Cyclone commenced on February 10, 2025, at the Mahajan Field Firing Ranges in Rajasthan, India, and is scheduled to conclude on February 23, 2025.
- Participants: The Indian contingent comprises troops from two Special Forces Battalions, while the Egyptian contingent includes members from the Special Forces Group and Task Force.
- The exercise aims to:
    - Promote military-to-military relations between India and Egypt.
    - Enhance interoperability and jointness in special operations.
    - Facilitate the mutual exchange of special operations tactics, techniques, and procedures.

GROSS DOMESTIC KNOWLEDGE PRODUCT (GDKP)

In a revival of an idea that had been shelved in 2021, the government is looking to capture the knowledge economy as a metric to supplement the Gross Domestic Product (GDP).

Background: –

- The Ministry of Statistics and Programme Implementation (MoSPI) had a session on "Conceptual Framework of Gross Domestic Knowledge Product (GDKP) Measurement", chaired by Principal Scientific Advisor Ajay Kumar Sood.

Key takeaways

- The Gross Domestic Knowledge Product (GDKP) is an innovative metric designed to assess a nation's economic progress by focusing on its knowledge-based assets and activities.
- The concept of Gross Domestic Knowledge Product (GDKP) is not a standard economic term like Gross Domestic Product (GDP), but it can be understood as a theoretical or emerging framework that measures the economic value generated from knowledge-based activities, innovation, and intellectual capital within a country.
- Focus: It emphasizes the role of knowledge, information, and creativity as key drivers of economic growth in the modern economy.
- At present, all expenditures on Intellectual Property Products (IPP) are recorded under Gross Fixed Capital Formation (GFCF) — the indicator for capital investments in the GDP dataset for the economy.
- GDKP was discussed earlier in 2021 when NITI Aayog made a presentation on the concept note. The National Statistical Commission had pointed out then that the concept note did not provide the methodology for capturing the data and computation of GDKP.

ATACAMA DESERT

Astronomers are sounding alarm bells as a precious sky-observing location faces risk of being blinded by light pollution due to a planned renewable energy project.

U.S. company AES Energy wants to build a large renewable hydrogen manufacturing complex in Chile, only a few kilometers from the summit of Mount Paranal, the site of the European Southern Observatory's (ESO) Very Large Telescope (VLT).

Background: –

- Mount Paranal, an 8,740-foot-high (2,664 m) peak in the Atacama Desert of Northern Chile, is one of the last spots on Earth free from urban and industrial light pollution.

Key takeaways

- The Atacama Desert, located in northern Chile, is one of the driest places on Earth and holds significant geographical, climatic, and scientific importance.
- Location: Western South America, along the Pacific coast, between the Andes Mountains and the Chilean Coastal Range.
- Climate: Hyper-arid with minimal rainfall due to the rain shadow effect of the Andes and the influence of the Humboldt Current and Subtropical High-Pressure Belt.
- Temperature: High diurnal temperature variation with hot days and cold nights.

Importance

- The desert contains several salt flats (salares) and high-altitude lagoons, such as the Salar de Atacama, which is rich in lithium deposits.
- The Salar de Atacama holds one of the largest lithium reserves globally, which is crucial for battery production in electric vehicles and renewable energy storage.
- The Atacama Desert is rich in mineral resources, particularly copper and lithium. Chile is one of the world's largest producers of both.
- Home to unique microbial life, studied for its resemblance to Martian conditions.
- Ideal for astronomical observations due to its clear skies, low humidity, and high altitude.
- Hosts world-class observatories like the European Southern Observatory (ESO) and ALMA (Atacama Large Millimeter Array).

SHATAVARI

In a bid to raise awareness about the health benefits of medicinal plants, a species-specific campaign titled "Shatavari –For Better Health" was launched today by Shri Prataprao Jadhav, Minister of State (Independent Charge), Ministry of Ayush.

Background: –

- The campaign marks another significant step in the Ministry of Ayush's continued efforts to promote traditional medicine and medicinal plants for better health and well-being in India.

Key takeaways

- Shatavari is a medicinal herb widely used in Ayurveda for its adaptogenic and rejuvenating properties.
- Native to India, Sri Lanka, and the Himalayas, it thrives in tropical and subtropical climates.

Figure 1. *Asparagus racemosus* (Shatavari)

Table 1: Taxonomy of *Asparagus racemosus*

Taxonomical Rank	Taxon
Kingdom	Plantae
Division	Angiosperms
Class	Monocots
Order	Asparagales
Family	Asparagaceae; Liliaceae
Genus	*Asparagus*
Species	*Racemosus*
Common Name	Shatavari

Medicinal & Health Benefits

- Known as the "Queen of Herbs" in Ayurveda for its role in women's reproductive health.
- Used as a galactagogue (enhances breast milk production) and supports hormonal balance.
- Contains saponins, flavonoids, and alkaloids, which provide anti-inflammatory, antioxidant, and immune-boosting properties.

Economic & Agricultural Importance

- Cultivated in India's tropical and subtropical regions, particularly in Madhya Pradesh, Chhattisgarh, Kerala, and Tamil Nadu.

- Recognized under the National Medicinal Plants Board (NMPB) for commercial cultivation and promotion of medicinal plants.

Government Initiatives & Conservation

- Promoted under AYUSH for herbal medicine development.
- Encouraged through National Agroforestry Policy and Medicinal Plants Mission for sustainable farming.

ARABIAN LEOPARD

The Arabian leopard, a critically endangered subspecies, has made a remarkable return to the Nejd plateau in Dhofar, Oman. This resurgence was brought into light in a study published on World Arabian Leopard Day, February 10, 2025.

The Arabian leopard's population has drastically declined due to habitat loss, poaching, and human conflict. The recent findings provide hope for the species, which has been pushed to the brink of extinction.

About Arabian Leopard

- The Arabian leopard (Panthera pardus nimr) is native to the Arabian Peninsula.
- It was once widespread but now occupies only a fraction of its former range.
- The population is estimated at 100-120 individuals, primarily in Dhofar.
- This subspecies is smaller than other leopards, with unique markings.
- They are solitary hunters, preying on small animals such as gazelles and hares.

PM 15 POINT PROGRAMME

The Prime Minister's New 15 Point Programme aims to support minority communities in India. Launched by the Ministry of Minority Affairs, it targets the socio-economic upliftment of six notified minority groups.

These groups include Muslims, Christians, Sikhs, Buddhists, Jains, and Parsis. The programme seeks to ensure equal opportunities for these communities in education, employment, and infrastructure development.

Objectives of the Programme

The programme has four primary objectives:

- Enhance educational opportunities for minorities.
- Ensure equitable economic participation through job recruitment and self-employment schemes.
- Focus on improving living conditions through infrastructure development.
- Prevent communal disharmony and violence.

Educational Empowerment Initiatives

Several scholarship schemes are part of the educational initiatives:

- Pre-Matric and Post-Matric scholarships support students from minority backgrounds.
- Maulana Azad National Fellowship Scheme offers financial aid for higher education, including M.Phil and Ph.D. programmes.
- Begum Hazrat Mahal National Scholarship targets meritorious girls in secondary education.
- Naya Savera programme provides free coaching for students from families earning less than Rs. 6 lakh annually.

Economic Empowerment Schemes

The programme includes various skill development initiatives

- Seekho aur Kamao scheme aims to enhance the skills of minority youth. It focuses on modern and traditional skills relevant to current market demands.
- USTTAD scheme promotes traditional artisans by providing a platform to showcase their crafts through Hunar Haats. So far, 35 Hunar Haats have been organised, benefiting over five lakh artisans, with more than half being women.
- Nai Manzil scheme and the Gharib Nawaz Employment Training Programme further provide education and short-term job-oriented courses.

Government Support and Financial Assistance

- The National Minorities Development Finance Corporation (NMDFC) offers concessional loans for self-employment.
- Additionally, various missions like the National Urban Livelihoods Mission and the National Rural Livelihoods Mission provide further support.
- The Pradhan Mantri Kaushal Vikas Yojana (PMKVY) aims to skill one crore people, including minorities. Under PMKVY, over 11 lakh candidates from minority communities have received training.
- The Pradhan Mantri Jan Vikas Karyakram (PMJVK) focuses on improving basic amenities in minority concentration areas. This includes projects in education, health, and skill development.

Monitoring and Implementation

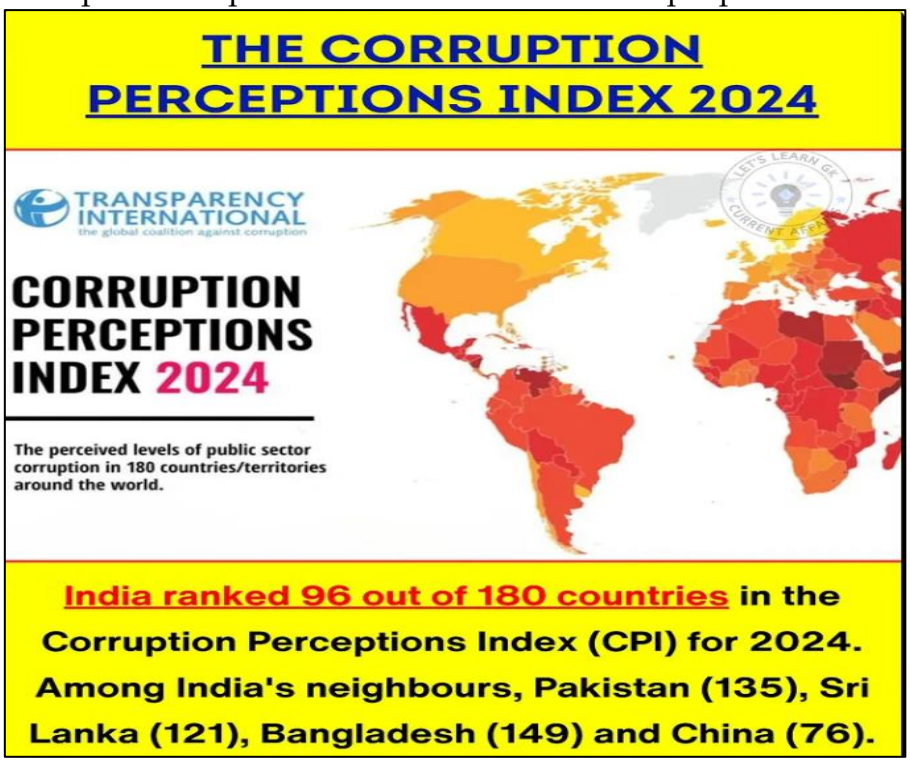
The Ministry of Minority Affairs oversees the implementation of these schemes. Regular updates and achievements are available on their official website. The programme is designed to create a more inclusive society by addressing the specific needs of minority communities.

CORRUPTION PERCEPTION INDEX

In 2024, India ranked 96 out of 180 countries in the Corruption Perceptions Index (CPI). This was a decline from its previous rank of 93 in 2023. The CPI measures perceived levels of public sector corruption based on expert assessments and business opinions.
The scale ranges from zero, indicating high corruption, to 100, indicating a very clean public sector. India's score fell to 38, down from 39 in 2023 and 40 in 2022.

Global Context of Corruption

- The CPI report for 2024 revealed that corruption remains a widespread issue across the globe.
- While some countries have made progress in reducing corruption since 2012, many others have stagnated or worsened.
- The global average score remains at 43, with over two-thirds of countries scoring below 50.
- This indicates a persistent problem that affects billions of people worldwide.



Impact on Climate Action

- Corruption poses threat to climate action.
- It obstructs efforts to reduce greenhouse gas emissions and adapt to climate change.
- Funds meant for climate initiatives are often misused or stolen, undermining the effectiveness of these programs.
- The report marks that protecting climate efforts from corruption is essential for meaningful progress.

Comparison with Neighbouring Countries

- India's ranking is notably better than some of its neighbours.
- Pakistan ranks 135, Sri Lanka is at 121, and Bangladesh falls further behind at 149.
- China, on the other hand, is ranked 76.

Leading Countries in the CPI

- Denmark, Finland, and Singapore topped the CPI list as the least corrupt nations in 2024.
- These countries have established robust systems to prevent corruption.
- Their high scores reflect effective governance and transparency, setting a benchmark for others.

The Role of Financial Hubs

- Countries with high CPI scores often have the resources to lead global anti-corruption efforts.
- However, many of these nations also host financial hubs that attract illicit funds.
- This complicates the global fight against corruption, as dirty money can fuel environmental degradation and other crimes.

The Need for Global Action

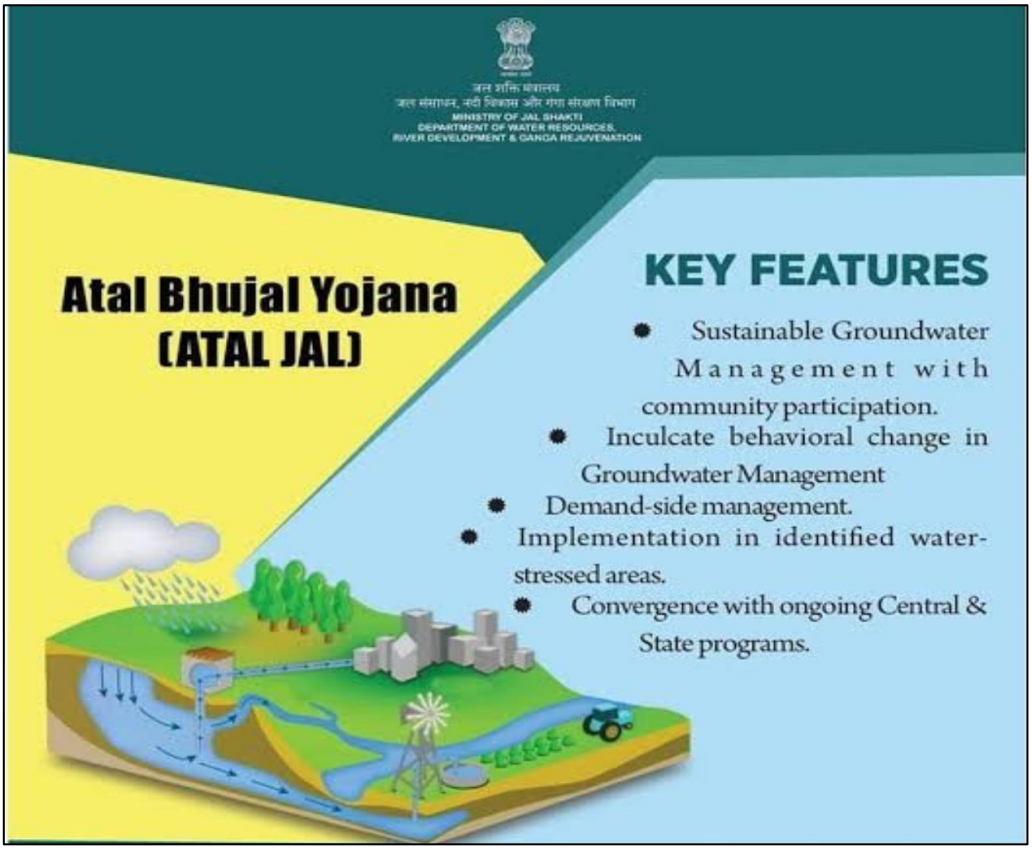
The report emphasises that combating corruption should be a long-term priority for the international community. Addressing corruption is crucial to promoting democracy, stability, and human rights. Concrete actions are necessary to tackle the dangerous trends brought into light in the CPI.

ATAL BHUJAL YOJANA

The Atal Bhujal Yojana is an initiative by the Government of India aimed at sustainable groundwater management. Launched on 25 December 2019, it addresses the critical issue of groundwater depletion in India. The scheme initially targeted seven water-stressed states and is now set to expand to twelve states, including Andhra Pradesh, Bihar, Punjab, Tamil Nadu, and Telangana.

Background and Objectives

- The Atal Bhujal Yojana was introduced to combat the alarming rate of groundwater depletion in India.
- It aims to promote sustainable groundwater management through community participation.
- The primary objectives include enhancing groundwater recharge, improving water use efficiency, and establishing state-specific frameworks for groundwater management.



Key Components

The scheme consists of two main components. The first is Institutional Strengthening and Capacity Building, with an outlay of Rs 1,400 crore. The second is an Incentive Component, which has a budget of Rs 4,600 crore. These funds are allocated to encourage states to achieve groundwater management targets.

Implementation and Impact

The Atal Bhujal Yojana has already shown positive results since its implementation. Groundwater levels have risen in 813 gram panchayats and 47 blocks across 26 districts. The scheme is designed to run for five years, with a total outlay of Rs 6,000 crore, half of which is funded by the World Bank.

Community Involvement

One of the core principles of the Atal Bhujal Yojana is community involvement. Local communities and stakeholders play important role in the scheme's success. The government encourages gram panchayats to participate actively in groundwater management through awareness programs and capacity-building initiatives.

Future Expansion

The expansion of the Atal Bhujal Yojana to five additional states reflects the government's commitment to addressing groundwater issues nationwide. The scheme's restructuring as a Centrally Sponsored Scheme (CSS) will facilitate better resource allocation and management.

Challenges and Considerations

India faces challenges related to groundwater management. Nearly 80% of domestic water supplies rely on groundwater. Dark zones, where groundwater consumption exceeds recharge rates, are increasing. The Atal Bhujal Yojana aims to mitigate these issues through targeted interventions and sustainable practices.

INDIA -RUSSIA KLUB S MISSILE SYSTEM

India has recently finalised an agreement with Russia to acquire anti-ship cruise missiles. This move aims to strengthen the operational capabilities of the Indian Navy's submarine fleet.

The specifics of the deal, such as the name, quantity, and cost of the missiles, have not been disclosed by the defence ministry. However, sources indicate that the deal involves the Klub-S missile system, part of the Kalibr missile family.

Klub-S Missile System

- The Klub-S missile system is designed for submarines.
- It boasts a 400-kg warhead and can target various threats up to 300 kilometres away.
- The missile system includes a fire control system and vertical launcher units.
- It can navigate around obstacles and counter enemy fire effectively.
- The Klub-S is already in service with the Indian Navy, enhancing its diesel-electric submarine fleet.

Importance of Submarine Fleets

- Submarine fleets are crucial for underwater warfare and national defence.
- The Indian Navy operates several classes of submarines, including the Kalvari, Sindhughosh, and Shishumar classes.
- The Sindhughosh class, also known as Kilo class, comprises diesel-electric submarines built through a collaboration between Russia and India.
- These submarines are integral for long-range patrols and are equipped with torpedoes and missiles.

DEVOLUTION INDEX

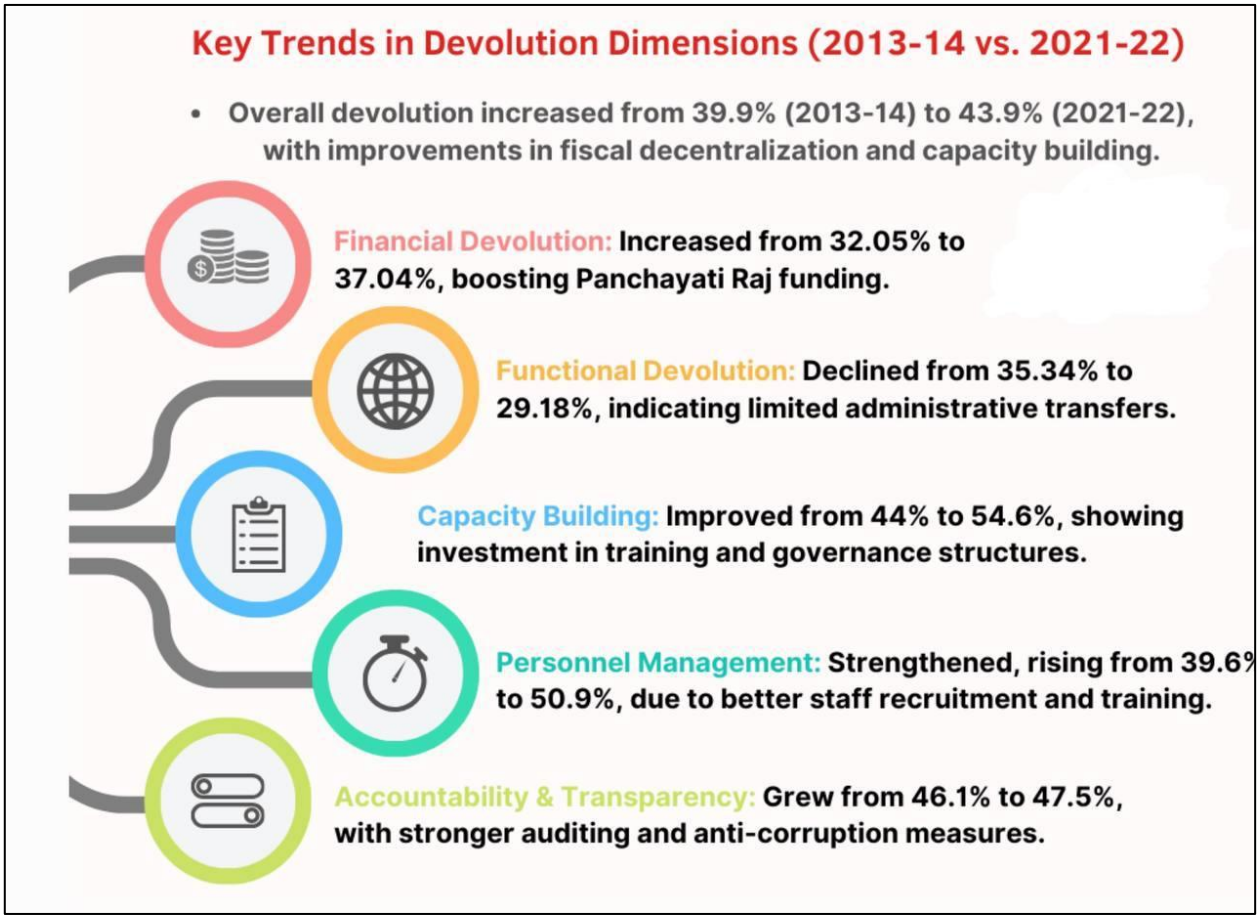
The recently released Devolution Index Report marks a very important moment for rural local self-governance in India. This comprehensive document evaluates the status of decentralisation across various states and Union Territories. It aims to empower Panchayati Raj Institutions (PRIs) and realise the vision of "Local Self Government" as enshrined in the 73rd Constitutional Amendment.

About the Devolution Index

- The Devolution Index is the result of extensive research and analysis.
- It assesses the decentralisation progress in India by focusing on six critical dimensions – Framework, Functions, Finances, Functionaries, Capacity Building, and Accountability.
- Each of these dimensions plays a vital role in determining the effectiveness of Panchayati Raj Institutions.

Key Dimensions of the Index

1. **Framework**: This dimension evaluates the legal and institutional structures supporting Panchayati Raj.
2. **Functions:** It examines the range of responsibilities assigned to Panchayats.
3. **Finances:** This aspect assesses the financial autonomy and resource allocation available to local bodies.
4. **Functionaries:** It looks at the human resources and their capacity to perform duties effectively.
5. **Capacity Building:** This dimension focuses on training and development opportunities for Panchayat members.
6. **Accountability:** It evaluates mechanisms in place to ensure transparency and responsibility in local governance.



Empowerment of Panchayats

The Index specifically investigates the degree of autonomy Panchayats possess in decision-making. This reflects the essence of Article 243G of the Constitution of India, which empowers state legislatures to devolve powers to Panchayats across 29 subjects listed in the Eleventh Schedule.

Utility for Multiple Stakeholders

- The Devolution Index serves various stakeholders.
- For citizens, it enhances transparency regarding Panchayat operations and resource distribution.
- Elected representatives gain data-driven insights for advocating reforms.
- Government officials receive a roadmap for implementing effective decentralisation policies.
- Policymakers can evaluate local governance health and pinpoint areas needing urgent reforms.

Alignment with Viksit Bharat Vision

This initiative aligns with the vision of Viksit Bharat, where developed and empowered Panchayats act as the mainstay for rural transformation. The Index aims to drive inclusive growth and sustainable development at the grassroots level.

Future Implications

The Devolution Index is expected to strengthen cooperative federalism in India. It encourages states to identify improvement areas and adopt best practices for more effective Panchayati Raj Institutions. This initiative is vital for enhancing local self-governance and ensuring responsive governance in rural areas.

MORAND-GANJAL IRRIGATION PROJECT

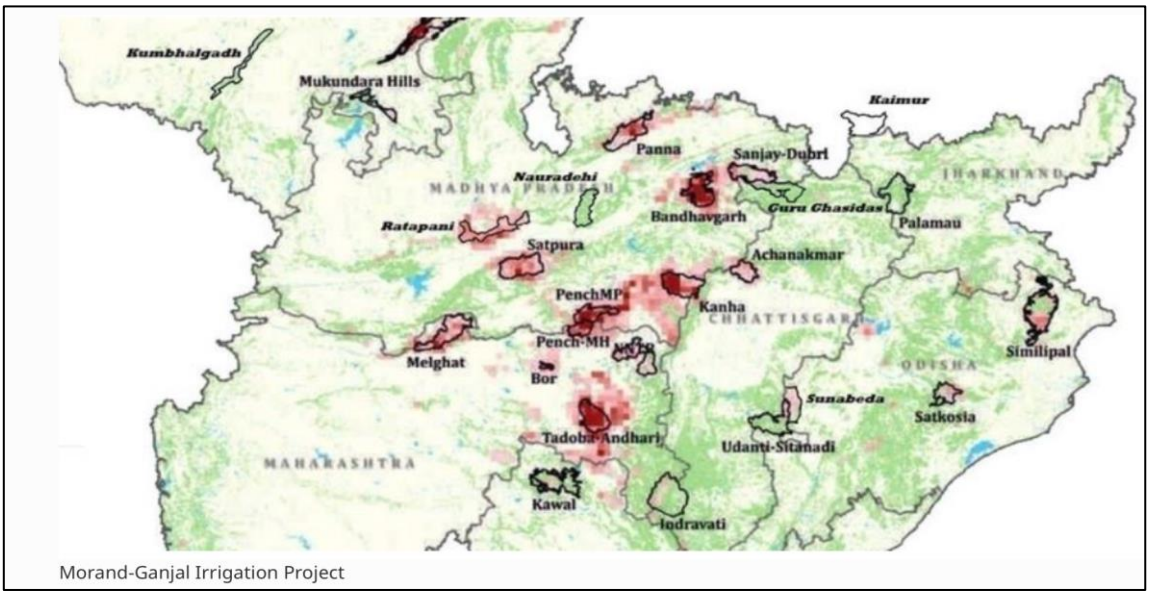
The National Tiger Conservation Authority (NTCA) has raised concerns regarding the Morand-Ganjal Irrigation Project in Madhya Pradesh. This project threatens vital tiger habitats and disrupts ecological corridors between the Satpura and Melghat Tiger Reserves. The NTCA has urged authorities to consider alternative sites to reconcile development needs with conservation efforts.

Project Overview

- The Morand-Ganjal Irrigation Project aims to improve irrigation for 211 villages across Hoshangabad, Betul, Harda, and Khandwa districts.
- Initially proposed in 1972, it received government approval in 2017.
- The project involves constructing dams on the Morand and Ganjal rivers, which will submerge over 2,250 hectares of forest land.

Impact on Tiger Habitats

- The NTCA's analysis indicates that the project site is important tiger-occupied habitat.
- Submerging forest areas will disrupt tiger movement between reserves.
- This disruption threatens genetic exchange and population stability among tigers.
- The NTCA warns that such ecological disruption can have long-term detrimental effects on tiger viability and the broader wildlife community.



Morand-Ganjal Irrigation Project

Recovery of Tiger Populations

Both the Satpura and Melghat Tiger Reserves are currently in a recovery phase. This recovery is attributed to successful voluntary village relocations. The NTCA cautions that losing the ecological corridor could reverse the progress made in increasing tiger populations.

Socio-Economic Concerns

The project will displace over 600 members of the Korku tribal community, leading to loss of livelihood. The NTCA emphasises that the submerged areas are not only vital for tigers but also support diverse wildlife and rich biodiversity.

Recommendations from NTCA

The NTCA has strongly recommended exploring less ecologically sensitive sites for the irrigation project. It is crucial to balance developmental needs with the conservation of critical wildlife habitats. The authority stresses that preserving biodiversity and ecological integrity should be a top priority.

BHIL TRIBAL GROUP

In early February 2025, the Pune rural police presented their findings to the National Commission for Scheduled Tribes (NCST) regarding a complaint from Bhil families against the Vasantdada Sugar Institute (VSI).

The Bhils, an indigenous tribal group, claim that VSI is attempting to demolish their homes and displace them from land they have inhabited for generations. The land in question spans 200 acres, leased to VSI by the Maharashtra government. VSI's Director General, Sambhaji Kadupatil, has denied these allegations.

Who are the Bhils?

- The Bhil community is one of the largest indigenous tribal groups in India.
- They mainly live in forested and hilly regions of western and central India.
- Bhils are found in Gujarat, Madhya Pradesh, Chhattisgarh, Maharashtra, Rajasthan, Bengal, and Tripura.
- Bhils speak Bhili, a language from the Indo-Aryan family, influenced by Gujarati, Marathi, and Rajasthani.
- They belong to a tribal group outside the Hindu caste system.

Historical Significance

- The word "Bhil" comes from the Dravidian word for "bow", highlighting their ancient use of bows and arrows.
- Mentioned in the Mahabharata, Bhils ruled parts of Malwa and Central India before Rajput conquests.

Resistance Against Colonial Rule

- The British labeled Bhils a criminal tribe under the Criminal Tribes Act of 1871, leading to oppression and marginalization.
- The Bhils revolted against British taxation, forced labor, and cultural restrictions.
- Leaders like Govind Guru and Motilal Tejawat played key roles in their fight for rights.

Demographics and Social Status

- Bhils are the largest tribal group in India.
- They are recognized as a Scheduled Tribe (ST) in several states.
- They have different sub-groups like Bhil Garasia, Dholi Bhil, and Dungri Bhil in Rajasthan.

Culture and Traditions

- Bhils are known for Pithora paintings and Ghoomar dance.
- Their food primarily consists of maize, onion, garlic, and chili.
- Traditional Bhil society is led by a headman (Gameti), who resolves disputes.

EXERCISE WINGED RAIDER

The Indian Army recently completed training exercise named Ex Winged Raider. This operation focused on special airborne operations and brought into light the importance of inter-service collaboration. Conducted in the Eastern Theatre, the exercise showcased the Indian Army's and Indian Air Force's (IAF) commitment to enhancing their operational readiness and synergy.

About Ex Winged Raider

- Ex Winged Raider aimed to improve the capabilities of both the Indian Army and the IAF.
- It involved rehearsing various airborne insertion techniques using both fixed-wing and rotary-wing aircraft.
- This training is crucial for ensuring troops can be rapidly deployed in diverse operational environments.

Significance

Airborne operations play a vital role in modern military strategy. They enable swift and decisive action, essential for responding to evolving security challenges. The exercise allowed troops to refine their skills, ensuring they are prepared for any contingency.

Inter-Service Synergy

The exercise exemplified the seamless coordination between the Indian Army and the IAF. Integrated training programs like Ex Winged Raider encourage collaboration and interoperability. This means that personnel from both services can operate each other's weapon systems effectively.

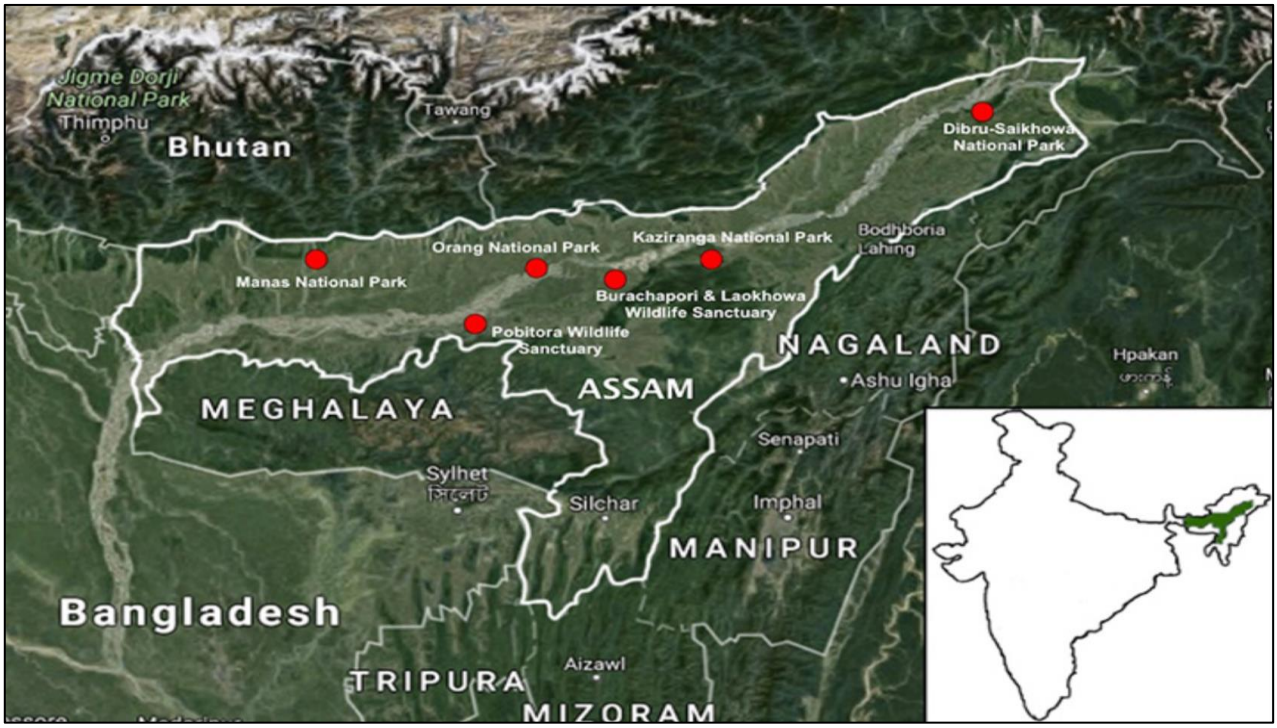
DIBRU SAIKHOWA NATIONAL PARK

The debate surrounding oil exploration in Assam's Dibru Saikhowa National Park has intensified following the denial of permission for extraction activities. Oil India Limited (OIL) sought to conduct research and development (R&D) studies using Extended Reach Drilling (ERD) technology, despite previous rejections based on environmental concerns. The Environment Ministry's Forest Advisory Committee (FAC) has now recommended the R&D proposal, but with strict conditions.

Overview of Extended Reach Drilling Technology

- Extended Reach Drilling (ERD) allows drilling at depths without disturbing the surface.
- This technology can reach depths of 3,500 to 4,000 metres by drilling horizontally underground, thus preventing surface disruption.
- OIL proposed using ERD to study its environmental impact without directly extracting oil.

National park



- Dibru Saikhowa National Park is a national park and biosphere reserve located in *Assam.*
- It is the ***largest salix swamp forest*** in northeast India.
- It is an identified Important Bird Area (IBA).
- The area was declared as Dibru Reserved Forest in 1890. In 1929, Saikhowa Reserve Forest was declared.
- It was declared as wildlife sanctuary in 1995. In 1997, Dibru-Saikhowa Biosphere Reserve was declared.
- Originally created to help conserve the habitat of the ***rare white-winged wood duck.***
- **Rivers -** The park is bounded by the Brahmaputra and Lohit Rivers in the north and Dibru River in the south.
- **Forest type -** Dibru-Saikhowa comprises of semi-evergreen forests, deciduous forests, littoral and swamp forests and patches of wet evergreen forests.
- The Park is renowned for natural regeneration of ***Salix trees.*** It is famed for ***Ferral horses.***
- **Fauna -** 36 species of mammals have so far been recorded.

CROCODILE CATFISH

The recent identification of the Crocodile Catfish in the Bahini River (a tributary of Brahmaputra) has sparked ecological concerns in Guwahati. This invasive species poses threat to local fish populations and the overall aquatic ecosystem. The State Fishery Department is actively analysing samples to determine the extent of the impact. This discovery marks ongoing issues related to invasive species in Assam's waterways.

About the Crocodile Catfish

- The Crocodile Catfish, scientifically known as Bagarius suchus, is a member of the Sisoridae family.
- It is also known as the giant devil catfish, crocodile goonch catfish or Asian giant river catfish.
- This species is notable for its size, being one of the largest freshwater catfish in Asia.
- It can grow over 1.5 metres long and weigh more than 50 kilograms.
- Its body is typically dark brown or black, featuring irregular patches.
- The dorsal fin extends nearly the entire length of its back.
- The Crocodile Catfish is classified as Near Threatened in IUCN Red List.

Habitat and Distribution

- Crocodile Catfish are native to freshwater ecosystems in South and Southeast Asia.
- Their preferred habitats include deep pools and large rivers with slow to moderate currents.
- They are commonly found in the rocky and gravelly substrates of rivers.

Ecological Impact

The introduction of the Crocodile Catfish into the Bahini River raises alarm due to its predatory nature. This species primarily feeds on smaller fish and aquatic organisms, which threatens the native fish populations. The potential for ecological imbalance is high, as the catfish could disrupt the food web and reduce biodiversity.

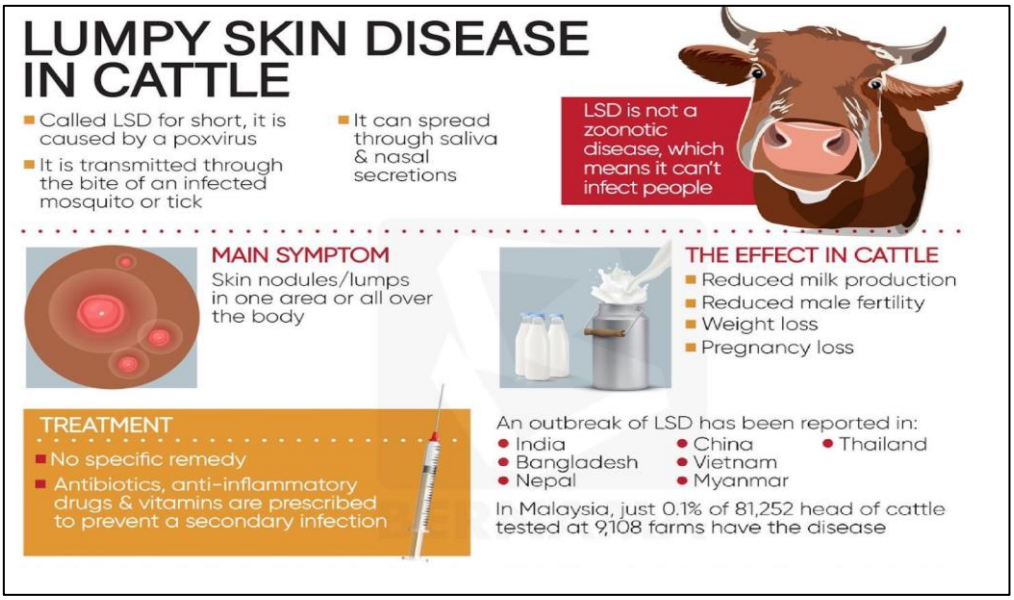
Pollution Concerns in Local Rivers

The Bharalu River, tributary of the Brahmaputra, is already one of the most polluted rivers in Assam. It suffers from untreated waste disposal from populated areas. The introduction of the Crocodile Catfish in such a compromised ecosystem could exacerbate existing issues.

LUMPY SKIN DISEASE

Lumpy Skin Disease (LSD) poses threat to cattle health and the dairy industry in India. The recent approval of Biolumpivaxin, a vaccine developed by Biovet, marks a very important moment in combating this disease.

This vaccine is notable for being the world's first Differentiating Infected from Vaccinated Animals (DIVA) marker vaccine. It aims to enhance disease surveillance and improve the management of infected and vaccinated cattle.



About Lumpy Skin Disease

- Lumpy Skin Disease is a viral infection affecting cattle and buffaloes.
- It is characterised by skin nodules, fever, and swollen lymph nodes.
- The disease leads to decreased milk production and mobility issues in affected animals.
- Transmission primarily occurs through vector bites from insects such as mosquitoes and ticks.
- This disease has resulted in mortality and economic losses in the dairy sector.

Biolumpivaxin – Key Features

- Biolumpivaxin is a groundbreaking vaccine that allows for the differentiation between vaccinated and naturally infected animals.
- This feature is crucial for effective disease management.
- The vaccine is produced at Biovet's facility in Mallur, Karnataka, with an impressive capacity of 500 million doses annually.
- It requires a single dose per year for cattle and buffaloes over three months old.

Development and Testing

The vaccine underwent rigorous testing at the Indian Council of Agricultural Research-National Research Centre on Equines (ICAR-NRCE) and the Indian Veterinary Research Institute (IVRI). These institutions ensured that Biolumpivaxin meets high safety and efficacy standards. The vaccine has been proven safe for all animal groups, including pregnant and lactating females.

Impact on the Dairy Industry

The introduction of Biolumpivaxin is expected to mitigate the impact of LSD on the dairy industry. Over the past two years, the disease has led to the death of approximately 200,000 cattle and a substantial decline in milk production. The estimated economic loss from LSD has exceeded Rs 18,337.76 crores, severely affecting small-scale farmers and the rural economy.

Future Prospects

With the licensure of Biolumpivaxin, India is moving towards self-reliance in veterinary healthcare. The vaccine is anticipated to play important role in achieving a disease-free livestock population. Its availability will support the sustainability of the dairy industry, which is vital for the livelihoods of millions of farmers across the country.

DELHI EARTHQUAKE

Delhi frequently experiences earthquakes, often originating from distant regions. However, the magnitude 4 earthquake that struck before dawn on Monday was distinct, as its epicenter was within Delhi itself, near Dhaula Kuan.

Background:

- Magnitude 4 earthquakes are not very strong, and do not result in much damage.

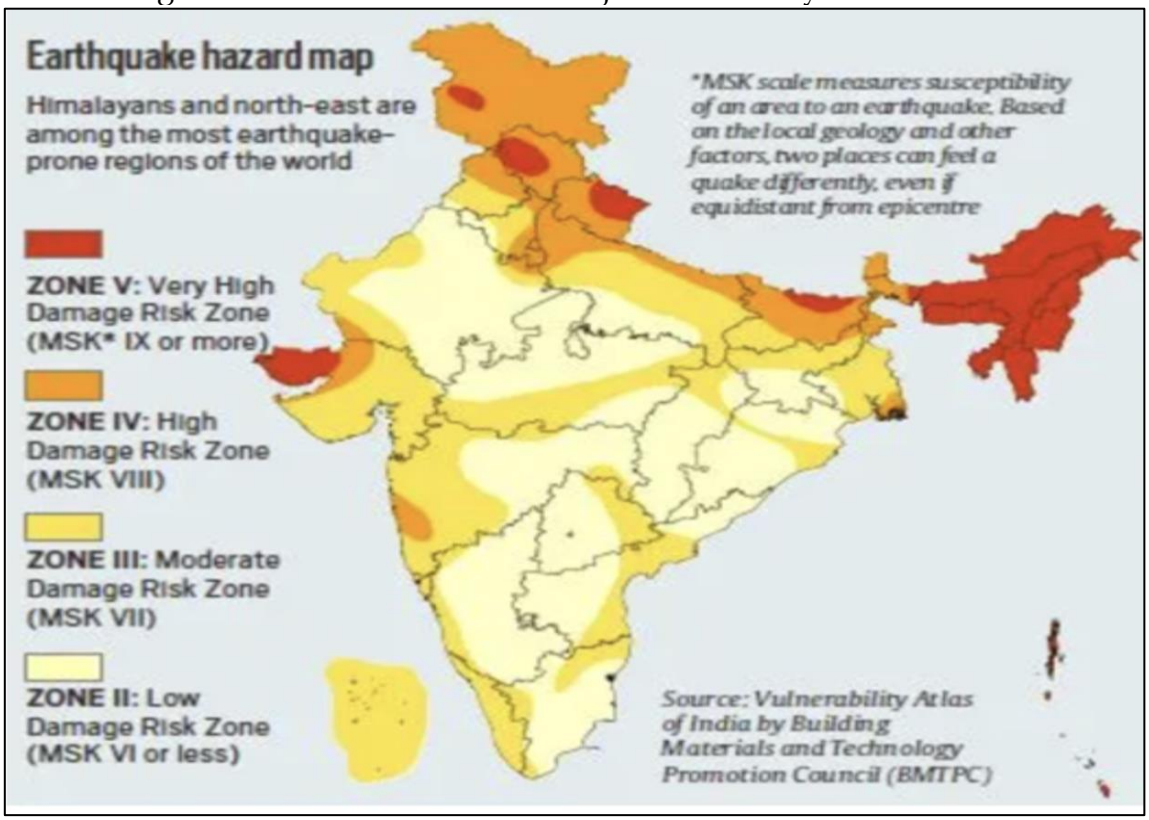
Key takeaways

- Delhi lies in a seismically active area. India's official earthquake hazard map puts Delhi in Zone 4, the second highest classification of areas based on their susceptibility to shaking experienced during an earthquake.
- Zone 4 in India includes areas that are expected to experience MSK-8-level intensity during an earthquake. The MSK, or Medvedev-Sponheuer-Karnik scale is a measure of intensity, rather than strength, or energy released, which is described by magnitude.

- Simply put, the MSK scale measures the susceptibility of an area to an earthquake. Based on the local geology and other factors, two places can feel, and be impacted by, a quake very differently, even if they are equidistant from its epicentre.
- Delhi falls in a region that has high susceptibility to quakes. MSK-8 means the area is vulnerable to major damage being caused to buildings and other infrastructure.
- Zone 5, the most vulnerable areas in India, correspond to MSK-9 levels of intensity or higher.

ARAVALLI-DELHI FOLD BELT

- Delhi lies in what is known as the Aravalli-Delhi Fold Belt, a seismically-active geological belt extending from southern and eastern Rajasthan to Haryana and Delhi.



- This region is characterised by the presence of deformed layers of rock that have been folded or bent due to geological processes hundreds of millions of years ago. These deformities have created stress which is sometimes released in the form of earthquakes.

- This is a very different mechanism from the one that triggers earthquakes in the Himalayan region. The Himalayan region has been witnessing the subduction of the Indian tectonic plate under the Eurasian plate — one pushing against the other — which results in a lot of stress building up.

- The Aravalli-Delhi Fold Belt was much more seismically active in the past than it is now. Over the years, the tectonic activity in the region has slowed down considerably, leading to greater geological stability. But some faults still remain, which give rise to occasional mild earthquakes.

SOIL HEALTH CARD SCHEME COMPLETES 10 YEARS.

Background: –

- The Soil Health Card Scheme was introduced by Prime Minister Shri Narendra Modi on 19th February, 2015 at Suratgarh, Rajasthan.

Key takeaways

- The Soil Health Card (SHC) Scheme is a flagship initiative aimed at promoting sustainable agriculture and enhancing farm productivity.
- The scheme provides farmers with detailed assessments of their soil's health, enabling them to make informed decisions regarding nutrient management and crop selection.

Key Objectives:

- Assess Soil Health: Provide farmers with comprehensive information on the nutrient status of their soil.

- Promote Balanced Fertilization: Encourage the judicious use of fertilizers based on specific soil requirements, thereby reducing input costs and preventing soil degradation.

- Enhance Crop Productivity: Improve crop yields by recommending appropriate soil amendments and cultivation practices.

Features of the Soil Health Card:

- Parameters Analyzed: Each SHC evaluates 12 soil parameters, including:
    - Macronutrients: Nitrogen (N), Phosphorus (P), Potassium (K), Sulfur (S).
    - Micronutrients: Zinc (Zn), Iron (Fe), Copper (Cu), Manganese (Mn), Boron (Bo).
    - Other Indicators: pH (acidity or alkalinity), Electrical Conductivity (EC), Organic Carbon (OC).
- Recommendations Provided: Based on the analysis, the SHC offers tailored advice on:
    - Optimal fertilizer types and dosages
    - Necessary soil amendments
    - Suitable crop choices

Implementation and Technological Advancements:

- Sample Collection: Soil samples are typically collected twice a year, post-harvest of Rabi and Kharif crops, ensuring accurate assessments when fields are fallow.
- The Guideline of Village Level Soil Testing Labs (VLSTLs) was issued in June 2023. VLSTLs can be set up by individual entrepreneurs i.e. rural youth and community based entrepreneurs, including Self Help Groups (SHGs), Schools, Agriculture Universities etc.
- Digital Integration: In 2023, the SHC portal was revamped and integrated with Geographic Information System (GIS) technology.
- This enhancement allows for:
    - Geo-referencing of soil samples
    - Real-time access to soil health data
    - Generation of QR codes linking samples to test results.
- Mobile Application: A robust SHC mobile app has been developed, featuring:
    - Automated location tagging during sample collection
    - User-friendly interfaces for farmers to access their soil health information
    - Graphical representations of soil data

CASPIAN PIPELINE CONSORTIUM (CPC)

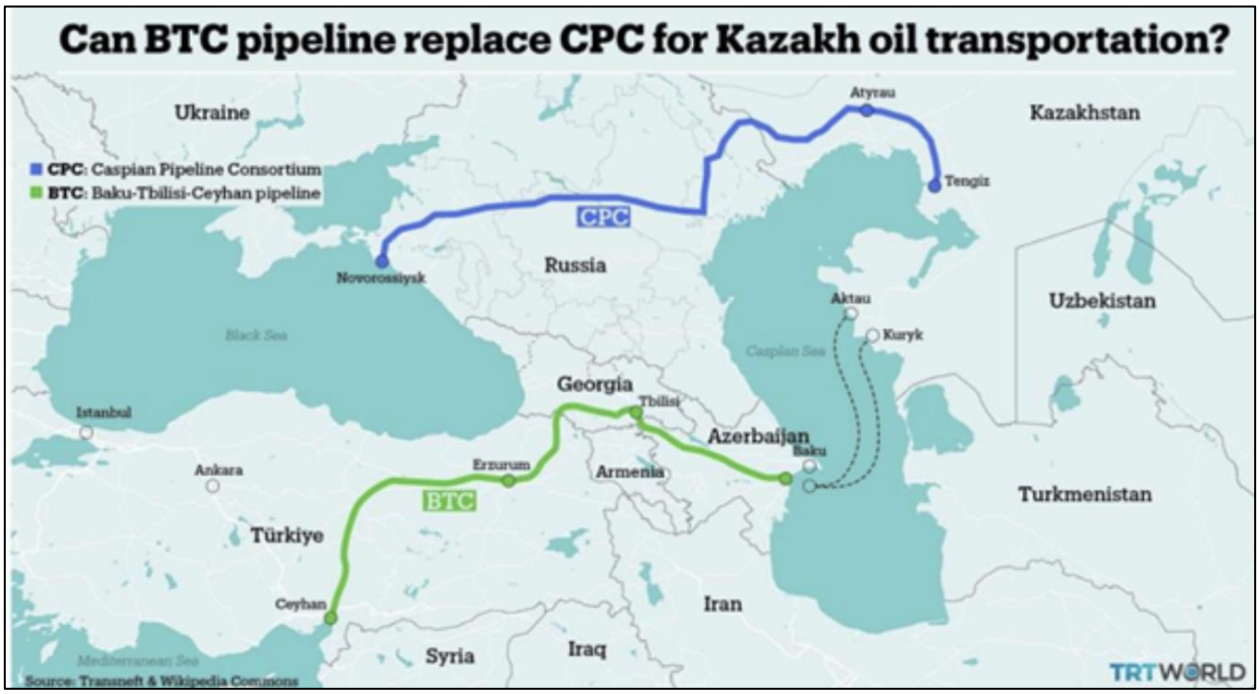
Oil flows through the Caspian Pipeline Consortium (CPC) were reduced by 30-40% after a Ukrainian drone attack on a pumping station.

Background: –

- The attack, which caused no casualties, took place on the eve of talks between the U.S. and Russian officials on ending the war in Ukraine. Following the meeting, from which Kyiv was excluded, Donald Trump's administration said it had agreed to hold more talks.

Key takeaways

- The Caspian Pipeline Consortium (CPC) is a significant international oil transportation project involving Russia, Kazakhstan, and leading global oil companies.
- Established to construct and operate a 1,510-kilometer pipeline, the CPC facilitates the movement of crude oil from Kazakhstan's Tengiz oil field to the Novorossiysk Marine Terminal on Russia's Black Sea coast.



Key Features of the CPC:

- Route and Capacity: The pipeline transports oil from western Kazakhstan through Russian territory to the Black Sea port of Novorossiysk. As of 2022, it handled approximately 1.2 million barrels per day, accounting for about 1.2% of global oil demand.
- Shareholders: The consortium's major stakeholders include Transneft (24%), KazMunayGas (19%), Chevron Caspian Pipeline Consortium Co. (15%), and LUKARCO B.V. (12.5%), among others.
- Strategic Importance: The CPC pipeline is crucial for exporting oil from Kazakhstan's significant fields, such as Kashagan and Karachaganak, providing a reliable route to international markets.

DEPOSIT INSURANCE AND CREDIT GUARANTEE CORPORATION (DICGC)

The government is considering increasing the insurance cover for bank deposits from the current limit of Rs 5 lakh.

Background: –

- Deposit insurance was introduced in India in 1962, and coverage has thus far been enhanced six times – from Rs 1,500 per depositor held in the same right and same capacity at all the branches of the insured bank to Rs 5 lakh now.

Key takeaways

- The deposit insurance cover is offered by the Deposit Insurance and Credit Guarantee Corporation (DICGC), a specialised division of the Reserve Bank of India (RBI).
- The objective of the DICGC is to protect "small depositors" from the risk of losing their savings in case of a bank failure.
- The insurance cover of Rs 5 lakh per depositor is for all accounts held by the depositor in all branches of the insured bank.
- DICGC insures all commercial banks, including branches of foreign banks functioning in India, local area banks, regional rural banks, and cooperative banks. **However, primary co-operative societies are not insured by the DICGC.**
- Savings, fixed, current, and recurring deposits are insured. The DICGC does not provide insurance for deposits by foreign, central, and state governments, and for inter-bank deposits.
- The premium for deposit insurance is borne by the insured bank. DICGC collects premiums from member financial institutions at a flat or differentiated rate based on the bank's risk profile.

How does the limit for DICGC's insurance coverage work?

- In 2021, a new Section 18A was inserted in the DICGC Act, 1961, which enabled depositors to get interim payment and time-bound access to their deposits to the extent of the deposit insurance cover through interim payments by DICGC, in case of imposition of restrictions on banks by the RBI.
- At present, the DICGC offers insurance cover on bank deposits up to Rs 5 lakh within 90 days of imposition of such restrictions.
- Since the DICGC insures both the principal and interest amount held by a depositor in a bank, this is how the cover works:
    - Say, a depositor has Rs 4,99,800 in her account, which includes the principal amount of Rs 4,90,000 and Rs 9,800 as interest accrued on it. In this case, the DICGC will provide insurance for Rs 4,99,800, which essentially means the depositors will get Rs 4,99,800 if their bank fails.
    - However, if the principal amount is Rs 5,00,000 (or more), and the interest accrued is Rs 10,000, the interest accrued will not be covered, as the depositor would have exhausted the cover limit of Rs 5 lakh.
- If the bank goes into liquidation, DICGC is liable to pay to the liquidator the claim amount of each depositor up to Rs 5 lakh within two months from the date of receipt of the claim list from the liquidator.
- The liquidator will have to disburse the right claim amount to each insured depositor.

INTERNATIONAL THERMONUCLEAR EXPERIMENTAL REACTOR (ITER)

Prime Minister Narendra Modi, on his visit to France to attend an AI summit, also toured the ambitious International Thermonuclear Experimental Reactor (ITER) in Cadarache, accompanied by French President Emmanuel Macron.

Background: –

- Prime Minister Modi's visit to the ITER facility marks the first time that a Head of State or Head of Government has visited ITER.

Key takeaways

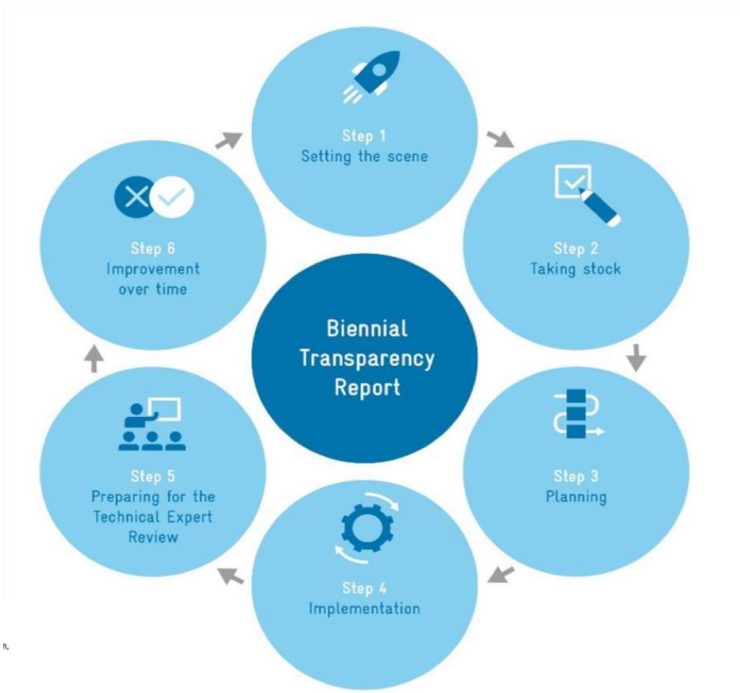
- ITER is an international collaborative project aimed at building the world's largest magnetic fusion device, designed to prove the feasibility of fusion as a large-scale and carbon-free source of energy.
- Presently, as many as 33 nations, including India, are collaborating on ITER project. Seven ITER members — China, India, European Union, Japan, Korea, Russia and United States — have been making joint efforts for decades to build and operate the ITER experimental device.
- ITER is currently under construction in the south of France. According to its current timeline, it is expected to begin deuterium-tritium fusion reactions by 2039, producing 500 MW of fusion power.
- ITER would not be converting the output heat energy into electricity. But its success is expected to pave the way for other machines to start using fusion energy as a regular source of electricity generation.
- According to the ITER website, the primary task of ITER is to investigate and demonstrate burning plasmas — "plasmas in which the energy of the helium nuclei produced by the fusion reactions is enough to maintain the temperature of the plasma, thereby reducing or eliminating the need for external heating".

BIANNUAL TRANSPARENCY REPORT (BTR)

India is in the final stages of preparing its first ever Biannual Transparency Report (BTR), part of its commitment as a signatory to the 2015 Paris Agreement on climate change.

Background: –

- The Biennial Transparency Report (BTR) is a reporting mechanism established under the Paris Agreement's Enhanced Transparency Framework (ETF).



Key takeaways

- The report will be India's official position on its greenhouse gas emissions inventory, key sectors and sources, and steps taken to improve energy efficiency use, as well as the transition to renewable energy sources and the availability of required resources.
- While India has been periodically submitting such information in the form of 'national communications' and 'Biannual Update Reports' (BUR), the BTR is a document that will be subject to technical review by independent, non-Indian, UNFCCC-accredited experts.
- The reports are part of the commitment made by all signatories at the UNFCCC's 21st Conference of Parties (COP), held in Paris in 2015, in a bid to increase transparency.
- However, it was only at the 2024 COP in Baku that countries actually began submitting BTRs that adhered to the prescribed format.
- While all countries were to have submitted their BTRs by December 2024, several — including India — failed to meet that deadline.

Key Components of the BTR:

- National Inventory Report (NIR): An account of greenhouse gas emissions and removals.
- Progress on Nationally Determined Contributions (NDCs): Updates on efforts and achievements related to emission reduction targets.
- Policies and Measures: Descriptions of strategies implemented to mitigate climate change.
- Climate Change Impacts and Adaptation: Information on observed impacts and adaptation actions.
- Support Provided and Received: Details on financial, technological, and capacity-building assistance.
- Capacity-Building Needs and Areas for Improvement: Identification of areas requiring enhancement to effectively combat climate change.

MATSYA 6000

India's Deep Ocean Mission is making strides with the development of the Matsya-6000 submersible. This project, led by the National Institute of Ocean Technology, aims to enhance India's capabilities in ocean exploration.

The submersible, designed to operate at depths of up to 6,000 metres, will play important role in studying marine biodiversity and exploring ocean resources.

Overview of Matsya-6000

- Matsya-6000 is a compact submersible with a diameter of 2.1 metres.
- It can accommodate three personnel and is constructed from a titanium alloy.
- This material allows it to withstand extreme underwater pressures.
- The submersible is equipped with a variety of systems including ballast for diving, thrusters for movement, and advanced communication tools.

Subsystems and Features

- The submersible includes a main ballast system, thrusters for multidirectional movement, and a battery bank for power.
- It features a sophisticated power distribution network and advanced underwater navigation devices.
- Communication is facilitated through an acoustic modem and underwater telephone.
- The design incorporates life-support systems to ensure crew safety during missions.

Testing Phases

Matsya-6000 has undergone extensive dry tests to evaluate its performance over a 500-metre range. Following these tests, it was moved to the L&T Shipbuilding facility for wet tests. These tests focused on assessing the submersible's stability, manoeuvrability, and communication capabilities. Eight dives were conducted, including both unmanned and manned trials.

Future Prospects

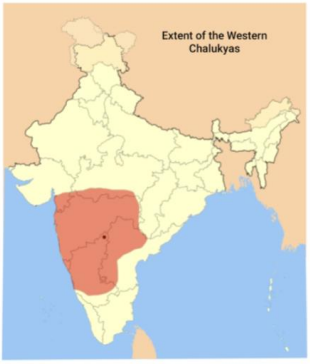
The Samudrayan project, which includes Matsya-6000, aims to explore ocean depths for resources like precious metals and to study marine biodiversity. The project is expected to promote ocean literacy and tourism. The completion of Matsya-6000 is anticipated by 2026, aligning with India's broader goals for sustainable ocean resource development.

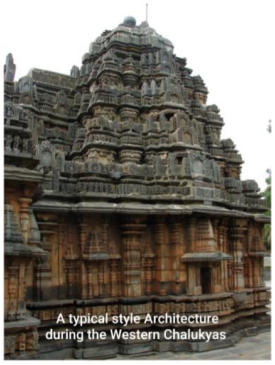
Significance of Ocean Exploration

India's role in ocean exploration is crucial for sustainable resource management. The government aims to increase the contribution of the blue economy to the national GDP. By exploring ocean depths, India seeks to enhance its knowledge of marine ecosystems and develop resources responsibly.

KALYANA CHALUKYA

Recent archaeological discoveries in Kankal village, Vikarabad district, have revealed three Kannada inscriptions from the Kalyana Chalukya era. The inscriptions date back to the reign of Emperor Someswara-III Bhulokamalladeva, specifically from 1129 to 1132 CE. They document events, including temple construction and donations.




A typical style Architecture during the Western Chalukyas


Brahma Jinalaya temple at Lakkundi dating back to the mid 11th century

Historical Context of the Kalyana Chalukyas

- The Kalyana Chalukyas ruled from the 6th to the 12th centuries in the Deccan region of India.
- They emerged as a powerful dynasty after being a feudatory of the Rashtrakuta Empire.
- The dynasty's capital was Kalyani, located in present-day Karnataka.
- The Kalyana Chalukyas are noted for their contributions to art, architecture, and literature.

Inscriptions and Their Significance

- The three inscriptions found in Kankal are dated December 25, 1129, October 5, 1130, and January 8, 1132.
- The first inscription details the construction of the Bijjeswara temple and a donation of land by a local chief.
- The second and third inscriptions record further donations, denoting the community's involvement in temple patronage.
- These inscriptions provide vital information about the socio-economic conditions of the time.

Administration and Governance

The Western Chalukya administration was hereditary, with power typically passed to male heirs. The kingdom was divided into regions managed by feudatories like the Hoysala and Kakatiya. This decentralised governance allowed for effective local administration and military organisation.

Art and Architecture

The Kalyana Chalukyas are credited with advancements in architecture, particularly in the Deccan style. Their artistic contributions include the construction of numerous temples, known for their intricate carvings and unique architectural features. Notable examples include the Mallikarjuna temple in Bellary and the Siddeshvara temple in Haveri.

Literary Contributions

The Kalyana Chalukyas played a vital role in the development of Kannada and Telugu literature. Their patronage of poets and scholars encourageed a rich literary culture during their reign. This period is often regarded as a golden age for literature in the region.

Decline of the Kalyana Chalukyas

The decline of the Kalyana Chalukyas began after the death of Vikramaditya VI in 1126. Continuous conflicts with the Chola dynasty weakened their power. Subsequent rulers faced rebellions from feudatories, leading to the eventual disintegration of the empire.

THE PRIME MINISTER DHAN-DHAANYA KRISHI YOJANA (PMDKY)

The Prime Minister Dhan-Dhaanya Krishi Yojana (PMDKY) was announced by Finance Minister Nirmala Sitharaman during the Union Budget presentation on February 1, 2025.

This initiative aims to enhance agricultural productivity in under-developed districts across India.

The programme draws inspiration from the successful Aspirational Districts Programme (ADP), which was initiated in January 2018. The PMDKY is set to focus on 100 districts identified based on specific agricultural parameters.

Objectives of PMDKY

The PMDKY has five key objectives:
1. Enhance agricultural productivity.
2. Promote crop diversification and sustainable agricultural practices.
3. Improve post-harvest storage facilities at the panchayat and block levels.
4. Improve irrigation infrastructure.
5. Facilitate access to both long-term and short-term credit for farmers.

Selection of Districts
The selection of districts for the PMDKY will be based on three parameters – low productivity, moderate crop intensity, and below-average credit metrics. The Ministry of Agriculture and Farmers' Welfare is currently gathering data to identify these districts.

Crop intensity is defined as the ratio of the gross cropped area to the net area sown, indicating how efficiently land is utilised.

The PMDKY is expected to benefit approximately 1.7 crore farmers. While the budget does not specify a separate allocation for the scheme, funding will be sourced from existing agricultural schemes.
The formal approval from the Union Cabinet is required before the programme is rolled out.

MPOX CLADE 1B

The mpox clade 1b outbreak in the Democratic Republic of the Congo(DRC) has raised public health concerns since its emergence in September 2023.
Recent genomic and epidemiological studies indicate that this outbreak is primarily linked to sexual activity among professional sex workers in densely populated urban areas. As of January 2025, over 9,500 laboratory-confirmed cases have been reported, with a case fatality rate of 3.4%.

Mpox Variants

There are two main types (clades) of mpox: Clade 1 and Clade 2. Each clade has subtypes that differ in transmission and severity.

Clade 2b (Global Outbreak, 2022-Present):

- Caused a major outbreak in 2022, spreading globally.
- Over 100,000 cases reported worldwide.
- Low fatality rate in Europe (4 deaths per 10,000 cases).
- Primarily affected gay & bisexual men and other men who have sex with men in the UK.

Clade 1a (Endemic in the DRC):

- Found in the Democratic Republic of the Congo (DRC) for years.
- Spread through contact with animals or their meat.
- More deadly than Clade 2, especially among children.
- Transmits within households and healthcare settings.

Clade 1b (New Deadlier Strain, 2023):

- More transmissible and has a higher fatality rate.
- Spreads within sexual networks and among close contacts.
- Originated in DRC and has spread to neighboring countries.
- UK detected an imported case on October 30, 2024, from affected regions.

PRADHAN MANTRI ANNADATA AAY SANRAKSHAN ABHIYAN

The Government of India approved the continuation of the integrated Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA) Scheme during the 15th Finance Commission Cycle up to 2025-26.

Background: –

- The scheme aims to strengthen the procurement mechanism in coordination with state governments, thereby safeguarding farmers' income and stabilizing the agricultural market.

Key takeaways

- The Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA) is an umbrella scheme launched by the Government of India in 2018 to ensure remunerative prices for farmers' produce.

Key Components of PM-AASHA:-

Price Support Scheme (PSS):

- Objective: Procurement of notified pulses, oilseeds, and copra directly from farmers at Minimum Support Prices (MSP) when market prices fall below MSP.
- Implementation: Central Nodal Agencies (CNAs) like the National Agricultural Cooperative Marketing Federation of India (NAFED) undertake procurement in collaboration with state-level agencies.
- Procurement Limit: From the 2024-25 season onwards, procurement is set at 25% of the national production for the notified crops.
- However, for Tur (Arhar), Urad, and Masur, 100% procurement is allowed for the 2024-25 season to encourage domestic production and reduce import dependence.

Price Deficiency Payment Scheme (PDPS):

- Objective: To compensate farmers for the difference between the MSP and the actual selling price of oilseeds, without physical procurement.
- Implementation: Farmers receive direct payments of the price difference, with the central government bearing up to 15% of the MSP as compensation.
- Coverage Expansion: The scheme's coverage has been enhanced from 25% to 40% of the state's oilseed production, and the implementation period extended from 3 to 4 months to benefit more farmers.

Pilot of Private Procurement & Stockist Scheme (PPPS):

- Objective: To involve the private sector in the procurement of oilseeds on a pilot basis in selected districts.
- Implementation: Private agencies procure oilseeds at MSP in designated markets during the notified period, aiming to increase efficiency and reduce the burden on public procurement systems.

GULF OF AQABA

New study has uncovered a significant pause in coral reef growth in the Gulf of Aqaba during the late Holocene period.

About Gulf of Aqaba (Gulf of Eilat) :

Location: Northeastern extension of Red Sea, penetrating between Arabia peninsula & Sinai Peninsula.

Tiran Strait connects Gulf of Aqaba with Red Sea. It is integral part of East African Rift System.

Bordering countries: Israel, Jordan, Egypt & Saudi Arabia.

NEOM Brine Pools (salty underwater lakes) have been discoveredin Gulf of Aqaba.

PROJECT WATERWORTH

Meta announced its most ambitious subsea cable endeavour ever – Project Waterworth.

Background: –

The project will be a multi-billion dollar, multi-year investment to strengthen the scale and reliability of the world's digital highways.

Key takeaways

Project Waterworth is an ambitious initiative by Meta to build the world's longest undersea cable system, spanning over 50,000 kilometers—exceeding Earth's circumference.

The initiative will bring industry-leading connectivity to the US, India, Brazil, South Africa, and other key regions.

The cable would be the longest to date that uses a 24 fibre-pair system, giving it a higher capacity, and would help support its AI projects, according to Meta, which owns Facebook, Instagram and WhatsApp.

Meta said it would lay its cable system up to 7,000 metres deep and use enhanced burial techniques in high-risk fault areas, such as shallow waters near the coast, to avoid damage from ship anchors and other hazards.

Project Waterworth, by leveraging advanced machine learning models, aims to predict and mitigate potential disruptions, enhancing the resilience of subsea networks

CLIMATE RISK INDEX (CRI)

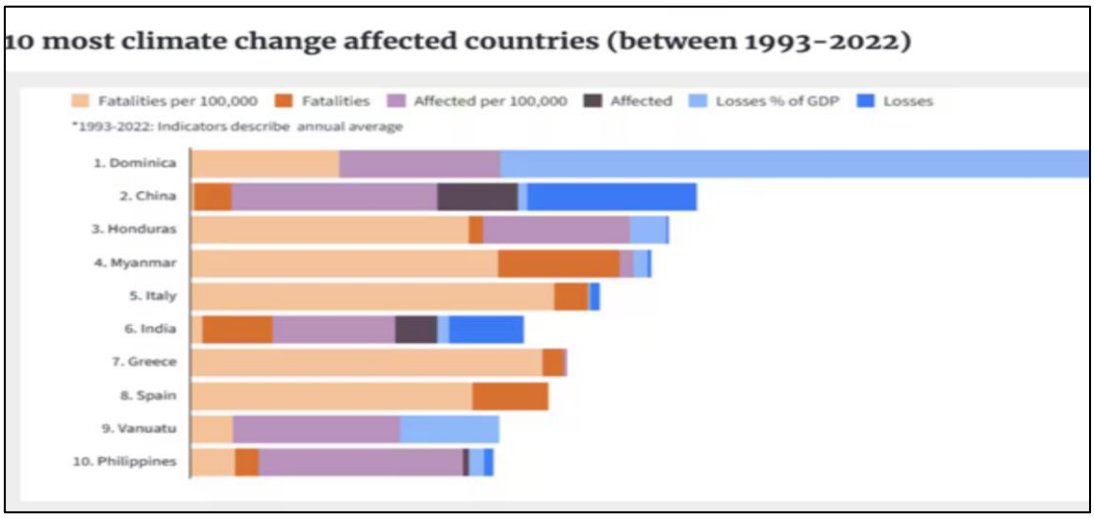
India is among the nations hit hardest by extreme weather over the past 30 years, according to the newly released 2025 Climate Risk Index (CRI).

Background: –

- Between 1993 and 2022, the country endured more than 400 extreme events — including floods, heatwaves, and cyclones — leading to 80,000 fatalities and economic losses nearing $180 billion.

Key takeaways

- The Climate Risk Index (CRI) is an analytical tool developed by the non-governmental organization Germanwatch to assess the impacts of extreme weather events on countries and regions.
- It evaluates both economic losses and human fatalities resulting from such events over specific periods, providing insights into countries' exposure and vulnerability to climate-related hazards.



Key Features of the Climate Risk Index:

- Assessment Parameters: The CRI analyzes data on extreme weather events and their associated impacts. It considers metrics such as the number of fatalities, economic losses (both absolute and relative to GDP), and the frequency of events.
- Timeframes: The index offers both annual assessments and long-term evaluations,typically spanning 20 to 30 years.
- Purpose: By highlighting the countries most affected by extreme weather events, the CRI aims to raise awareness about the need for climate adaptation and mitigation strategies.

Recent Findings:

- According to the Global Climate Risk Index 2025, India has shown improvement in its ranking.
- In 2019, India was the 7th most affected country globally due to extreme weather events, but by 2022, it improved to the 49th position. However, in the long-term assessment from 1993 to 2022, India remains among the top 10 most affected countries, ranking 6th.

DHOKRA ART

Dhokra (also spelt Dokra) is non–ferrous metal casting using the lost-wax casting technique.

Key takeaways

Dhokra Art is an ancient Indian metal casting tradition that has been practiced for over 4,000 years, dating back to the Indus Valley Civilization.

This art form is renowned for its distinctive lost-wax casting technique, producing non-ferrous metal artifacts that are celebrated for their primitive simplicity, enchanting folk motifs, and robust forms.

The term "Dhokra" is derived from the Dhokra Damar tribes, traditional metalsmiths of West Bengal and Odisha. Their craftsmanship traces back to the Indus Valley Civilization, with the famous "Dancing Girl" bronze statue from Mohenjo-Daro being a prime example of early lost-wax casting.

Geographical Spread: Over centuries, Dhokra artisans migrated across India.

Today, Dhokra art is practiced nationwide, with each region infusing its unique cultural nuances into the craft.

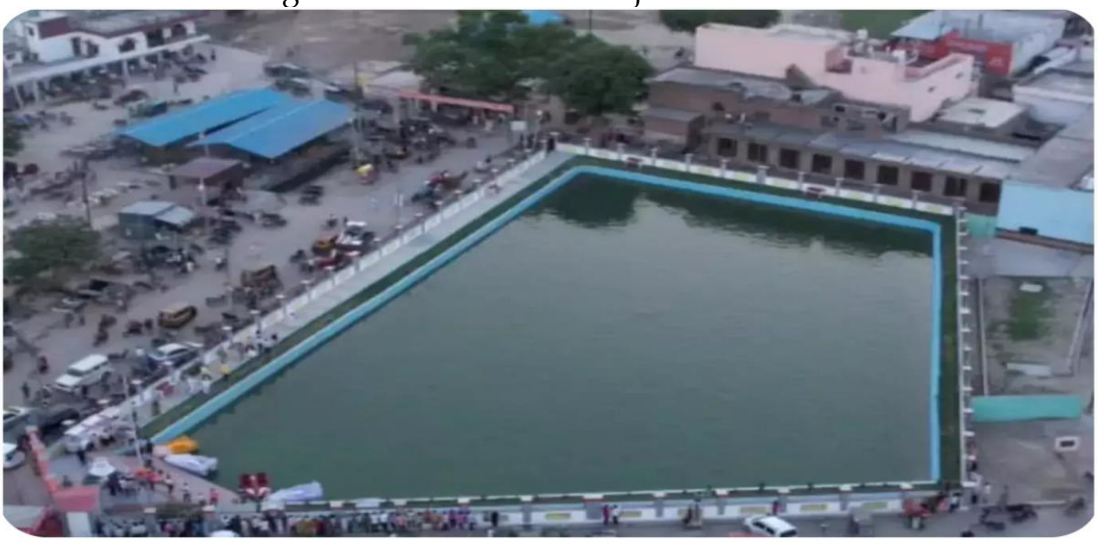
MISSION AMRIT SAROVAR

Recently, the Ministry of Rural Development has provided insights into the advancements made in the implementation of **Mission Amrit Sarovar**, an initiative aimed at enhancing water security across various regions.

What is the Mission Amrit Sarovar?

- **About:**
  - On April 24, 2022, **Mission Amrit Sarovar** was launched as part of India's **"Azadi Ka Amrit Mahotsav" celebrations for the 75th year of independence.**
  - The mission aims to construct/rejuvenate **at least 75 Amrit Sarovars in each district across India** to overcome the water crisis in rural areas.
  - The target for these water bodies serves as a crucial step towards ensuring water sustainability at the local level.

- Eight Central Ministries/Departments, including **Dept. of Rural Development, Department of land resources, Department of Drinking Water and Sanitation,** Department of Water resources, **Ministry of Panchayati Raj,**Ministry of Forest, Environment and Climate changes, Ministry of Railway, **Ministry of Road, Transport & Highways**, actively contribute to the mission's execution.
- **Bhaskaracharya National Institute for Space Application and Geo-informatics (BISAG-N)**has been engaged as Technical partner for the Mission.
    - BISAG-N is an **autonomous scientific society registered under the Societies Registration Act, of 1860.** It comes under the Ministry of Electronics and Information Technology.
- Geospatial data and technology play a pivotal role in identifying and executing the construction and rejuvenation of Amrit Sarovar.



The first Amrit Sarovar in India in UP's Rampur not only aids in water conservation but also serves as a tourist attraction.

- **Progress and Achievements:**
    - So far, out of over 1 lakh identified Amrit Sarovars, the work has been started for **over 81,000 Amrit Sarovars** and a total of over**66,000 Amrit Sarovars have been constructed/ rejuvenated.**
    - The national target of **50,000 Amrit Sarovars has been accomplished, demonstrating the dedication and efficacy of the mission.**
- **State-Specific Challenges and Advancements:**
    - Several states have made commendable strides towards achieving the goal of 75 Amrit Sarovars per district.
    - While some states like **West Bengal, Punjab, Telangana, Kerala, Tamil Nadu, Haryana, Bihar, and Rajasthan** are still working to meet this target, their determination remains unwavering.
- **Bridging Resource Gaps:**
    - Mission Amrit Sarovar leverages various existing schemes and financial grants to realize its objectives.

- The **Mahatma Gandhi National Rural Employment Guarantee Act, Pradhan Mantri Kisan Sampada Yojana sub-schemes**, and state-specific initiatives are channelled to mobilize resources for the mission's success.

- **Empowering Local Participation:**
  - The mission encourages citizen engagement and collaboration with non-governmental resources.
  - By fostering community involvement, the initiative seeks to harness additional support for the cause.
- **Water Security through Collaboration:**
  - The mission's collaborative nature, combining governmental departments, technical partners, and local communities, highlights its multi-faceted approach to water security.
  - The ultimate **goal is to transform the water landscape, enhance livelihoods, and ensure water availability for generations to come.**

JAVELIN ANTI TANK GUIDED MISSILE

India and the United States have recently strengthened their military partnership. Following a meeting between Prime Minister Narendra Modi and President Donald Trump, both nations announced plans for new procurements and co-production of the Javelin anti-tank guided missile. This collaboration aims to enhance India's defence capabilities.

Javelin Anti-Tank Guided Missile Overview

- The FGM-148 Javelin is developed by Raytheon and Lockheed Martin.
- The missile is man-portable and shoulder-fired. It features a fire-and-forget capability, allowing the operator to take cover after launch.
- Javelin is designed to defeat heavily armoured vehicles and can also target fortifications and helicopters.

Key Features of Javelin

Javelin has an effective range of 2.5 kilometres. It employs automatic infrared guidance, which enhances its accuracy. The missile uses a top-attack profile, climbing above its target to strike at its weakest point.

This design allows for effective engagement of modern tanks. The system consists of a missile housed in a disposable launch tube and a reusable command launch unit.

Operational Advantages

The Javelin's soft launch design enables it to be fired from confined spaces. Soldiers can reposition immediately after firing, which reduces their exposure to counterfire. The missile has been extensively used in combat, with over 5,000 engagements recorded in Iraq and Afghanistan. It can be deployed in various weather conditions and at any time of day or night.

Strategic Implications of the Collaboration

The joint production of the Javelin missile signifies a deepening military alliance between India and the US. This partnership aims to enhance India's defence capabilities amid regional security challenges.

The collaboration is also expected to facilitate technology transfers and boost India's indigenous defence production.

LAKE KIVU

Lake Kivu displayed devastation and misery after an armed group captured the lakeside city Goma, Democratic Republic of Congo (DRC).

About Lake Kivu :

Location: Situated on the border between Rwanda and the Democratic Republic of Congo.

Volcanic Origin: Lies in the Albertine Rift, a seismically active region.

Empties Into: Ruzizi River, which flows into Lake Tanganyika.

Contains large methane and carbon dioxide deposits, acting as a potential hazard for limnic eruption.

A limnic eruption is a rare natural disaster occurs when a lake releases large amounts of carbon dioxide (CO_2) gas.

BRAHMOS NG (NEXT GENERATION) MISSILE SYSTEM

India's BrahMos cruise missile programme is undergoing advancements with the development of the BrahMos NG (Next Generation) missile system.

This new iteration is expected to begin production by 2027-28, following its first flight tests anticipated next year. The BrahMos NG aims to enhance the capabilities of its predecessor while being lighter and more compact.

Key Features of BrahMos NG

- BrahMos NG will retain the effective range of 290 km.
- It will be designed to fit smaller delivery systems.
- The missile will weigh approximately 1.6 tonnes and measure 6 metres in length, compared to the older version which weighed 3 tonnes and was 9 metres long.
- It will feature a reduced radar cross-section and a homemade seeker with AESA radar technology.

Compatibility and Deployment

The BrahMos NG is engineered for compatibility with various platforms. It can be mounted on the Russian-origin Sukhoi-30MKI fighter aircraft and the indigenous Light Combat Aircraft Tejas. Its compact design allows for deployment across a wider range of military assets, enhancing operational flexibility.

International Interest and Export Deals

There is growing international interest in the BrahMos missile system. India has successfully supplied three batteries of the BrahMos system to the Philippines.

A new export deal with Indonesia, valued at approximately USD 450 million, is in advanced negotiations. This would make Indonesia the second foreign buyer of the BrahMos system after the Philippines.

Technological Advancements and Future Prospects

BrahMos N missile's advanced stealth features and versatility make it suitable for various combat scenarios. It is designed for improved performance against electronic countermeasures and can be launched from multiple platforms, including torpedo tubes and vertical launch systems.

TRUST INITIATIVE

Recently, India and the United States launched the TRUST initiative to enhance cooperation in the recovery and processing of critical minerals. This initiative aims to reduce barriers to technology transfer and address export controls.

It was announced during Prime Minister Narendra Modi's visit to Washington and focuses on creating robust supply chains for essential materials like lithium and rare earth elements (REEs). The partnership aims to counter China's dominance in the critical minerals sector.

Background of the TRUST Initiative

The TRUST initiative builds on previous collaborations, including India's entry into the US-led Minerals Security Finance Network and the Minerals Security Partnership. Unlike earlier multilateral agreements, TRUST emphasises bilateral engagement. This approach allows India and the US to accelerate efforts in securing critical mineral supply chains.

Objectives of the Initiative

The main goals of the TRUST initiative include encouraging innovation across various sectors. These sectors include defence, artificial intelligence, semiconductors, quantum computing, biotechnology, energy, and space. The initiative seeks collaboration among governments, academia, and the private sector to drive advancements in these fields.

Focus on Pharmaceuticals

TRUST also aims to strengthen supply chains for pharmaceuticals, particularly active pharmaceutical ingredients (APIs). These ingredients rely on critical minerals such as lithium and magnesium. India is the second-largest manufacturer of APIs globally, making this focus vital for sustaining its pharmaceutical industry.

National Programmes Supporting TRUST

The initiative is complemented by national programmes in both countries. The US Energy Act allocated funds for critical minerals and materials, while India approved the National Critical Minerals Mission with a substantial budget. These programmes aim to enhance exploration, recycling, and research in critical minerals.

GLOBAL WATER GAPS

Recent studies reveal alarming projections regarding global water gaps. As of 2025, an estimated 458 billion cubic meters of water gaps exist annually.
These gaps refer to the difference between renewable water availability and water consumption, essential for maintaining healthy aquatic environments.
With climate change intensifying, water gaps are expected to increase. Under a 1.5 degrees Celsius warming scenario, gaps may rise by 6 per cent. Under a 3 degrees Celsius scenario, this figure could reach 15 per cent.

About Water Gaps

Water gaps are critical indicators of water scarcity. They are calculated based on renewable water sources versus consumption needs. The gaps are not uniform globally and vary across regions. The analysis employs climate models to assess future scenarios, revealing that every continent will face challenges related to water availability.

Regional Impacts of Climate Change

- Certain regions are particularly vulnerable to worsening water gaps.
- The eastern United States, Mediterranean areas, and parts of India are projected to experience severe conditions.
- Countries like India and China are expected to see the largest increases in water gaps. For instance, India may face an additional 11.1 cubic kilometres per year under 1.5 degrees Celsius warming.
- Surprisingly, some regions like Saudi Arabia may initially experience reduced water scarcity, but severe increases are anticipated under higher warming scenarios.

Major Hydrological Basins

The analysis marks critical hydrological basins facing water gaps. The Ganges-Brahmaputra basin is the most affected, with increasing gaps projected under both warming scenarios.

Other notable basins include the Indus and Mississippi-Missouri river systems. These regions are essential for agriculture and water supply, making their sustainability crucial.

Solutions and Sustainable Management

Addressing water gaps requires innovative strategies. Proposed solutions include investing in resilient infrastructure, enhancing water storage, and utilising desalination techniques.

Reusing treated wastewater and transferring water from surplus to deficit areas can also alleviate scarcity. Effective water management systems are vital for sustaining agriculture and meeting the needs of the growing population.

Community Initiatives

Local initiatives demonstrate potential solutions to water scarcity. For example, a village in Uttar Pradesh has implemented greywater recycling methods. By using silt chambers and soak pits, they effectively manage local flooding and recharge groundwater. Such community-driven approaches can serve as models for sustainable water management.

WORLD JUSTICE DAY- FEBRUARY 20

Observed annually since 2009, the day emphasizes that **social justice** cannot be attained without **peace, security,** and **respect** for all.

About Social Justice

- **Definition:** An underlying principle for **peaceful and prosperous coexistence** within and among nations **(United Nations).**
- **Five key principles:**

Principle	Meaning	Examples (Indian Constitution/Global Initiatives)
 **Equity**	Recognises that **different people** have **different needs.**	**Article 46** mandates special **educational and economic promotion for SCs, STs, and weaker sections.**
 **Access**	To the **resources** and opportunities to succeed.	• **Article 39A** (free legal aid for the disadvantaged). • Access to Quality Education (SDG 4).
 **Participation**	Enabling all individuals to play a role in the **political, economic and social life.**	**Social, economic, and political justice** mentioned in the **Preamble.**
 **Rights**	Protecting the **human rights** of all individuals.	• **Fundamental Rights** through **Article 23** (prohibits human trafficking and forced labour) and **Article 24** (bans child labor in hazardous occupations), etc. • **Universal Declaration of Human Rights.**
 **Diversity**	**Valuing differences** such as race, gender, and sexual orientation.	**UN Women** aims to eliminate discrimination against women and girls.

Related Government Schemes

- **Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM-AJAY)**: Uplift **SC communities** through skill development, etc.
- **National Action for Mechanised Sanitation Ecosystem (NAMASTE)**: For **Safety** of sanitation workers.
- **Support for Marginalized Individuals for Livelihood & Enterprise (SMILE)**: Rehabilitation of transgenders and persons engaged in begging.

INDIAN OCEAN CONFERENCE

Indian Ocean Conference was started by India Foundation in 2016 in Singapore with participation from 30 countries.

It has emerged as a flagship consultative forum for countries in the Indian Ocean Region (IOR) over regional affairs and deliberate upon regional cooperation for Security and Growth for All in the Region (SAGAR).

India's Role in the IOR

First Responder Role: India helps in stabilising economies under stress such as Sri Lanka and quickly provides aid during disasters and conflicts through supply of essential items such as medicines, vaccines, fuel and fertilizers etc.

Connectivity Initiatives: India leads key regional projects like the IMEC, IMTT, and INSTC to enhance connectivity.

Encouraging Plurilateral Cooperation: Focusing on maritime security and disaster management cooperation through Quad, ReCAAP centre at Singapore, International Maritime Fusion Centre, White Shipping Agreements etc.
Maritime Deployments: In Northern Arabian Sea and Gulf of Aden.
Institution-Building: India's role in Indian Ocean Rim Association (IORA), Indian Ocean Naval Symposium (IONS), Colombo Security Conclave etc.
Significance of IOR for India:
Economic Interests: India relies on Indian Ocean forc80% of external trade, 90% of energy imports, and crucial fishing and tourism.
Strategic Goals: India seeks to keep the region a zone of peace, economic prosperity and maritime sustainability through strengthening of ties with neighbours.

Control of Choke Points: India's central location in IOR gives it a significant role in controlling critical maritime chokepoints including Suez Canal, Bab el-Mandeb,Strait of Hormuz, Strait of Malacca etc.

BERYLLIUM -10 ANOMALY

Recent research has revealed an intriguing anomaly in the concentration of the radioactive isotope beryllium-10, which occurred approximately 10 million years ago.

This discovery, based on rock samples from the Pacific Ocean floor, provides a potential new method for geologists to date historical events. The cause of this anomaly remains elusive, with theories ranging from shifts in ocean currents to cosmic events.

About Beryllium-10

- Beryllium-10 is a radioactive isotope produced when cosmic rays interact with air molecules.
- This isotope eventually settles into the oceans and becomes part of ferromanganese crusts.

- These crusts form very slowly over millions of years, making them valuable records of environmental conditions.

Ferromanganese Crusts

- Ferromanganese crusts grow from minerals dissolved in ocean water.
- Their growth is akin to tree rings, allowing scientists to determine their age through radiometric dating.
- This process uses the decay of beryllium-10 to reveal the crust's history, enabling researchers to track changes over extensive timescales.

The Anomaly Discovery

Researchers observed a decline in beryllium-10 concentrations in the crust, which abruptly halted around 10 million years ago. After this point, the expected decay pattern resumed. This anomaly was confirmed by analysing crusts from different locations, ruling out local irregularities.

Possible Explanations

Several hypotheses exist regarding the cause of the beryllium-10 anomaly. One theory suggests that changes in ocean currents, particularly the intensification of the Antarctic Circumpolar Current, may have influenced global circulation patterns. Another possibility involves an increased cosmic ray flux due to a nearby supernova or a collision with an interstellar cloud, which could have elevated beryllium-10 production.

Implications for Geological Dating

The identification of the beryllium-10 anomaly presents opportunity for geological dating. It may serve as a new time marker for correlating various geological archives, such as ice cores and sediments. This could enhance our understanding of Earth's climate and environmental changes over millions of years.

INTERNATIONAL ORGANIZATION OF AIDS TO MARINE NAVIGATION (IALA)

India has recently been elected to the Vice Presidency of the International Organization of Aids to Marine Navigation (IALA) during its first General Assembly in Singapore. This election reflects India's growing influence in maritime affairs.

Background of IALA

- IALA was founded in 1957 as an NGO.
- Its primary purpose was to unite marine aids to navigation authorities globally.
- The organisation facilitates knowledge sharing among stakeholders like manufacturers and scientific institutes.
- In August 2024, IALA transitioned to an inter-governmental organisation.
- This change was ratified by 34 states, allowing IALA to strengthen its role in maritime safety and environmental protection.
- The transition enhances IALA's capacity to set international standards for safe and efficient marine navigation.

India's Role in IALA

India's election to the Vice Presidency puts stress on its commitment to maritime safety. This leadership role allows India to influence global maritime policies and practices. India is also set to host IALA meetings in the coming years, further solidifying its position in international maritime governance.

Objectives of IALA

IALA aims to harmonise global maritime navigation systems. It promotes safety initiatives and collaborates with member states and industry stakeholders.

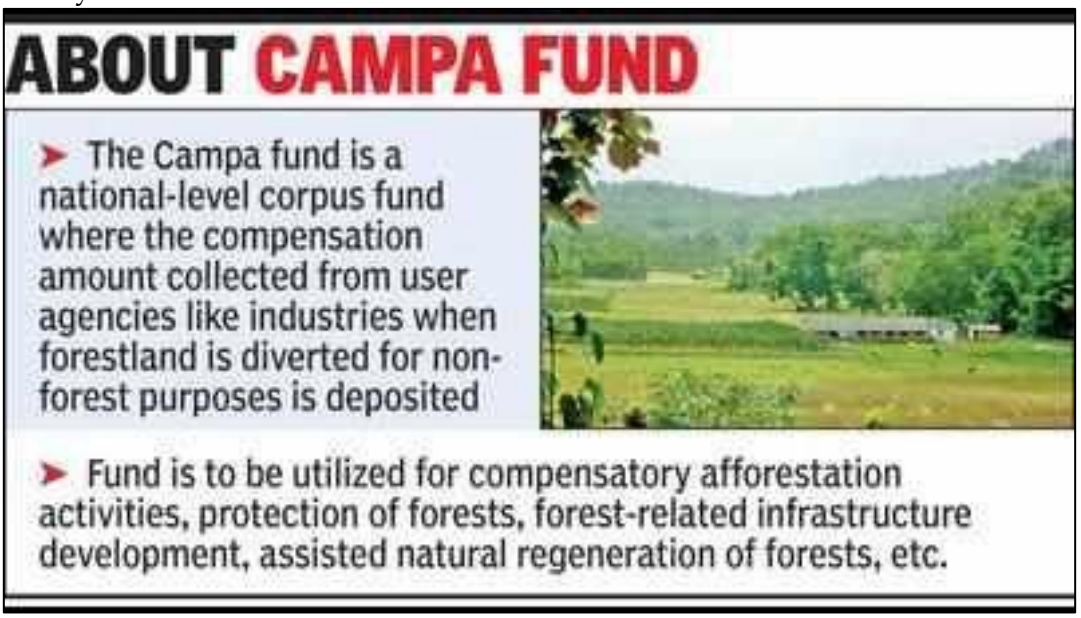
The organisation focuses on developing common standards and best practices. This ensures that navigational aids meet the evolving needs of mariners and address technological advancements.

Technical Committees and Standards
IALA has established several technical committees. These committees consist of global experts who work on developing best practice standards. They publish recommendations and guidelines to enhance navigational safety. Notable achievements include the IALA Maritime Buoyage System and the Automatic Identification System.

Impact on Maritime Safety
The transition to an inter-governmental organisation is step for maritime governance. IALA's efforts contribute to reducing maritime accidents. The organisation also plays important role in protecting the marine environment. By encouraging collaboration among its members, IALA enhances the efficiency and safety of vessel movements.

COMPENSATORY AFFORESTATION

A recent audit report by the Comptroller and Auditor General of India (CAG) on the functioning of the Compensatory Afforestation Fund Management and Planning Authority (CAMPA) in the 2019-2022 period has flagged that the funds allocated for compensatory afforestation were diverted for other activities by Uttarakhand's forest divisions.



Background: –

- As per CAMPA guidelines, after receiving funds, afforestation should be conducted within a year, or two growing seasons.

- However, the report flagged that in 37 cases, compensatory afforestation was executed after more than eight years of getting final clearance.

Key takeaways

- The simple principle that works in compensatory afforestation is that since forests are an important resource and render ecological services, they must not be destroyed.
- However, because of developmental requirements, forests are routinely cut, or, as it is said in official language, "diverted for non-forest purposes".
- But since afforested land does not become a forest overnight, there is still a loss of the goods and services that the diverted forest would have provided in the interim period.
- These goods and services include timber, bamboo, fuelwood, carbon sequestration, soil conservation, water recharge, and seed dispersal.
- Afforested land is expected to take no less than 50 years to start delivering comparable goods and services. To compensate for the loss in the interim, the law requires that the Net Present Value (NPV) of the diverted forest is calculated for a period of 50 years, and recovered from the "user agency" that is "diverting" the forests.
- "User agencies", which are often private parties, are not expected to undertake afforestation work themselves. This work has to be done by the state government.
- But the entire expenditure to be incurred on creating this new 'forest', including purchase of land for the purpose, has to be borne by the user.
- Thus, if any user agency wants to divert forest land for non-forest purposes, it has to deposit money for compensatory afforestation as well as pay the NPV, besides a few other charges.
- CAMPA is set up to manage this money. The compensatory afforestation money and NPV are supposed to be collected from the user agency by the government of the state in which the project is located, and deposited with the central government.
- The money will eventually flow back to the state to be used for afforestation or related works.
- The Compensatory Afforestation Fund Act 2016 created a national CAMPA at the central government level, and a state CAMPA in each state and UT. Similarly, a National Compensatory Afforestation Fund (CAF), and one in each state and UT too are also constituted.
- The states deposit money collected from user agencies with the national CAF, to be eventually credited into state CAFs as per their entitlement. The states, however, receive only 90% of their share; the other 10% are held back to cover administrative expenses.

ARTICLE 101(4)

Incarcerated Khadoor Sahib MP Amritpal Singh moved the Punjab and Haryana High Court to attend the ongoing Parliament session, lest he lose his seat because of his prolonged absence from the House.

Background: –

- Amritpal, who faces charges under National Security Act, has been detained in Dibrugarh since April 2023. He contested and won the 2024 Lok Sabha election from prison, but thus far has an attendance of only 2%.

Key takeaways

- "If for a period of sixty days a member of either House of Parliament is without permission of the House absent from all meetings thereof, the House may declare his seat vacant," Article 101(4) says.
- The 60 days, however, do not account for "any period during which the House is prorogued or is adjourned for more than four consecutive days".
- Effectively, the period of absence is only calculated based on the actual sittings of Parliament. Amritpal, for instance, only attended one sitting of the Lok Sabha — the one in which he was sworn in last July. Since then, he has remained in detention in Assam.

MPs can seek leave

- The operative term in Article 101(4) is "without permission of the House". For long absences, MPs write to the 'Committee on Absence of Members from the Sittings of the House', the parliamentary panel that deals with this issue.
- The committee makes recommendations on each leave application, which are then ratified by the House concerned. In practice, however, applications are seldom rejected.
- Past leave application reports list illness — their own or some relative's — as the most common reason for MPs being granted leave. That said, members have requested and been granted leave on the count of being imprisoned as well.
- In 2023, then Ghosi MP Atul Rai of the Bahujan Samaj Party sought permission to remain absent on 23 consecutive sittings of Parliament as he was in jail. His application was granted.
- Even if an MP is absent for more than 60 days, the House has to "declare" the seat vacant, meaning the matter has to be put to vote.

STAGFLATION

Stubborn inflation and President Donald Trump's hard-line trade policies have rekindled fears of stagflation, a worrying mix of sluggish growth and relentless inflation that haunted the U.S. in the 1970s.

Background:

- A critical component of the stagflation phenomenon—persistently high inflation—became more pronounced earlier this month when data revealed that consumer prices in January experienced their most rapid monthly increase since August 2023.
- Meanwhile, the trajectory of U.S. economic growth remains uncertain, with the potential inflationary impact of Mr. Trump's tariffs posing a risk that could further exacerbate the situation.

Key takeaways

- Stagflation is a rare economic condition where high inflation coexists with stagnant economic growth and high unemployment. This phenomenon contradicts conventional economic theories, which suggest that inflation and economic growth generally move in the same direction.

Understanding Stagflation:

- The term "stagflation" is a combination of stagnation (slow or no economic growth) and inflation (rising prices).
- Typically, inflation is associated with economic expansion, but in stagflation, rising prices occur alongside weak demand and high unemployment.

Causes of Stagflation:

- Supply-Side Shocks: A sudden increase in the cost of essential goods (e.g., crude oil prices) can drive inflation while simultaneously slowing economic activity.
- Monetary Policy Failures: Excessive money supply without corresponding economic growth can lead to inflation without boosting employment or output.
- Structural Rigidities: Labor market inefficiencies, lack of productivity growth, and supply chain disruptions can contribute to stagnant growth and rising inflation.
- External Factors: Geopolitical tensions, trade restrictions, and commodity price volatility can create stagflationary conditions.
- Historical Example: The 1970s Oil Crisis is a classic example, where oil price shocks caused high inflation while economies faced recessionary pressures.

Impact of Stagflation:

- Economic Growth Decline: Businesses struggle due to high costs, reducing production and investments.
- Unemployment Increases: Job losses occur as firms cut back on hiring due to weak demand.
- Declining Purchasing Power: Rising prices erode consumer savings and wages, impacting living standards.
- Policy Dilemma: Central banks face difficulty in addressing stagflation since measures to curb inflation (e.g., high interest rates) can further slow growth, while stimulus measures (e.g., low interest rates) can worsen inflation.

DARIEN GAP

Migrants seeking entry into the US continue to resort to the infamous Darien Gap, an unforgiving expanse of jungle between Panama and Colombia. They are led by unscrupulous human traffickers who prey on their desire to seek a better life.

Background: –

- The majority of migrants hail from Latin America and are fleeing poverty, economic instability, and political turmoil in their home countries. However, an increasing number of people from Asian countries like India have frequented this route, spending large amounts of money.

Key takeaways

- Location: The Darien Gap is a dense, roadless jungle region on the border of Panama and Colombia.
- Physical Features: It consists of swamps, rainforests, and rugged mountains, making it one of the most inaccessible regions in the world.
- Obstacle to the Pan-American Highway: This is the only missing section (about 106 km) in the otherwise continuous Pan-American Highway, which extends from Alaska to Argentina.

Strategic & Geopolitical Importance

- Migration Route: It has become a major passage for migrants from South America, Africa, and even Asia attempting to reach North America.
- Security Issues: The area is notorious for drug trafficking, organized crime, and armed groups operating in the region.
- Environmental Conservation vs. Development: Proposals to build roads through the Darien Gap face opposition due to concerns about deforestation, indigenous rights, and biodiversity loss.

Environmental & Ecological Concerns :

- Biodiversity Hotspot: It is home to endangered species and a vital part of the Mesoamerican Biological Corridor.
- Portions of the Darién Gap are protected as national parks and reserves, such as Darién National Park in Panama, a UNESCO World Heritage Site.
- Climate Change & Deforestation: Logging, illegal settlements, and infrastructure development threaten the unique ecosystem.
- Indigenous Communities: Several indigenous tribes, including the Emberá and Wounaan, inhabit the region and rely on traditional means for survival.

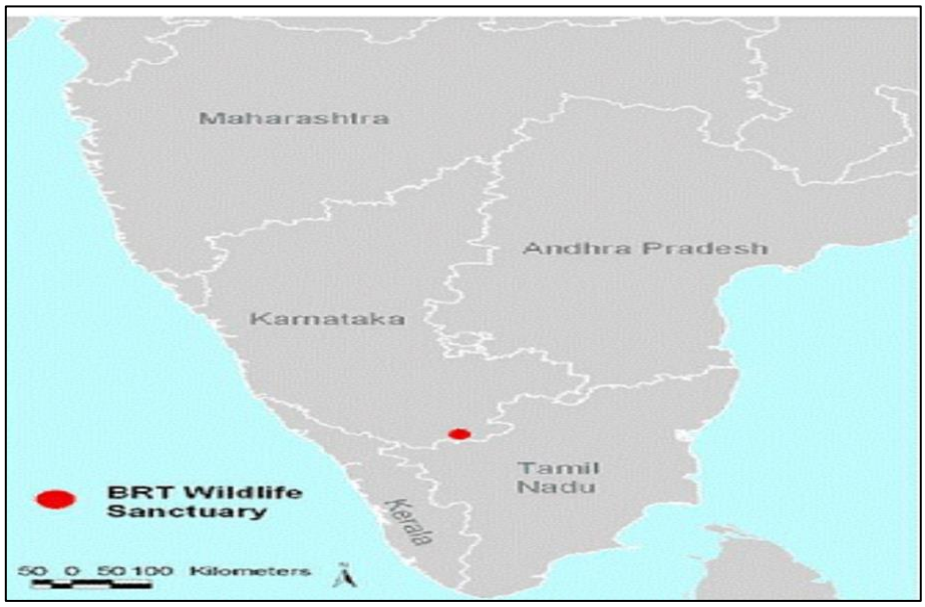
SOLIGA TRIBES

Prime Minister Narendra Modi made a reference to Soligas of BRT Tiger Reserve in the 119th edition of Mann Ki Baat and praised their contribution to tiger conservation.

Background:

- The National Tiger Conservation Authority (NTCA) report on the tiger population for BRT Tiger Reserve indicated the presence of 69 tigers in 2014. This number went up to 86 in the 2018 report.

- However, the NTCA's 2022 report on the "Status of Tigers, Co-Predators, and Prey" noted a decline in the tiger population and attributed it to the presence of humans and habitat degradation.



Key takeaways

- The Soliga, also spelled Solega, Sholaga, and Shōlaga, are an indigenous tribal community primarily residing in the Biligirirangana Hills (BR Hills) and Male Mahadeshwara Hills of Karnataka, India, with some populations in the Erode district of Tamil Nadu.
- Their name, "Soliga," translates to "children of bamboo," reflecting their deep-rooted connection with nature.
- Language: The Soliga speak Sholaga, a Dravidian language closely related to Kannada and Tamil.
- Historically, the Soliga practiced shifting cultivation and were dependent on the forest for their livelihood, collecting non-timber forest products (NTFP) such as honey, gooseberries, bamboo, and various medicinal plants.
- They possess extensive knowledge of over 300 herbs used for treating various ailments.

Cultural and Religious Practices

- The Soliga follow a blend of naturism, animism, and Hinduism.
- Sacred sites such as Dodda Sampige, a large Michelia champaka tree, hold significant spiritual importance.

Legal Recognition and Conservation Efforts

- In 2011, the BR Hills region was declared a tiger reserve, leading to restrictions on traditional practices.
- The Soliga community legally contested these limitations and became the first tribal group in India to have their forest rights recognized within a core area of a tiger reserve. They have since collaborated in conservation efforts, contributing to the doubling of the tiger population between 2011 and 2015.

JHUMUR DANCE

Prime Minister Narendra Modi will witness what has been pegged as the "biggest ever" jhumur (also spelt jhumoir or jhumair) event in history on February 24.

Background: –

- Some 8,600 dancers will perform in Guwahati's Sarusajai Stadium at the Jhumoir Binandini 2025 to mark the 200th anniversary of Assam's tea industry.

Key takeaways

- The term "tea tribe" loosely refers to a multi-cultural, multi-ethnic community of tea garden workers and their descendants. These people came from Central India — mostly from

present-day Jharkhand, Odisha, Chhattisgarh, and West Bengal — and settled in Assam in the 19th century to work in the British tea gardens.

- This migration was often forced, and even when it was not, it occurred in highly exploitative circumstances. Not only did migrants work under abysmal conditions at the tea gardens for very little pay, but they were also not free to leave.
- Today, the descendants of these people are concentrated in districts with a large concentration of tea estates, in Upper Assam and in the Barak Valley.
- They have Other Backward Classes (OBC) status in the state, although they have long been fighting for Scheduled Tribe (ST) status. Tribes such as the Munda or the Santhal, a part of the larger tea garden community in Assam, have ST status in the states where they originally came from.

What is the Jhumur dance?

- The tea garden community brought a motley collection of cultural practices from their homelands to Assam. Of particular note in this regard is the jhumur tradition.
- Jhumur is the folk dance of the Sadan ethnolinguistic group, who trace their origins to the Chotanagpur region. Today it occupies a central place in what are known as "tea garden festivals" or festivals celebrated by tea garden workers in Assam.
- Women are the main dancers and singers, while men play traditional instruments such as madal, dhol, or dhak (drums), cymbals, flutes, and shehnai. The attire worn varies from community to community, although red and white sarees are particularly popular among women.

- Dancers stand shoulder-to-shoulder and move in coordinated patterns with precise footwork while singing couplets in their native languages — Nagpuri, Khortha and Kurmali. These have evolved in Assam to borrow heavily from Assamese.

- While set to upbeat tunes and lively rhythms, the subject of Jhumur songs in Assam, however, can often be grim.
- The tradition also acts as a means of social cohesion, more so given the history of displacement of the tea garden communities. It aided them in not only retaining aspects of their culture and identity but also in making sense of the world their ancestors found themselves in.

BLACK PLASTICS

Black plastic made headlines after a study claimed that the material contained toxic flame retardants, which could be leaching into food at hazardous levels. However, it was recently found that the study had miscalculated the levels of one of the toxic chemicals, leading the researchers to issue a correction.

Background: –

- Black plastic is often made from recycled electronic waste such as computers, TVs, and appliances. The issue is that these electronics typically contain substances such as the flame retardant bromine; antimony; and heavy metals such as lead, cadmium, and mercury.

Key takeaways

- Black plastic refers to plastics dyed with carbon black pigments, commonly used in packaging, electronics, automotive parts, and household goods.
- It is primarily made from recycled plastic but is difficult to recycle due to the presence of toxic chemicals and detection issues in recycling facilities.

Challenges in Recycling

- Black plastic is not easily detected by conventional sorting machines in Material Recovery Facilities (MRFs).

- Since most recycling systems use near-infrared (NIR) sensors, black plastic absorbs infrared light, making it invisible for sorting and leading to landfill disposal.

Presence of Toxic Additives

- Often contains hazardous chemicals like brominated flame retardants, heavy metals, and persistent organic pollutants (POPs).
- These chemicals leach into soil and water, causing health risks and environmental pollution.

Contribution to Microplastic Pollution

- When black plastic degrades, it breaks into microplastics, contaminating water bodies, soil, and even entering the food chain.
- Microplastics impact marine life and pose a human health hazard when ingested through food or water.

Link to E-Waste Pollution

- Black plastic is commonly sourced from e-waste, including discarded electronic casings, cables, and appliances.
- Improper disposal of e-waste black plastic releases hazardous chemicals, contributing to air and water pollution.

Landfill and Incineration Issues

- Due to low recycling rates, black plastic ends up in landfills or incinerators, releasing toxic fumes such as dioxins and furans, known carcinogens and endocrine disruptors.

SELENIUM

Incidents of sudden hair loss in Maharashtra's Buldhana district, which made national headlines, are linked to high selenium content found in wheat from Punjab and Haryana supplied by local ration shops, as per a medical expert's report.

Background: –

- The cases of sudden hair loss, or 'acute onset alopecia totalis', were reported in 279 persons in 18 villages of Buldhana between December 2024 and January this year, prompting authorities to order a probe into the matter.

Key takeaways

- Selenium (Se) is a nonmetal element.
- It naturally occurs in various forms, including a gray metallic form known for its photoconductive (conducts electricity when exposed to light) properties, making it useful in photocells and light meters.
- Selenium is primarily obtained as a byproduct of copper refining and is utilized in glassmaking, pigments, and electronics.
- Biologically, it is an essential trace mineral vital for functions such as thyroid hormone metabolism, DNA synthesis, and protection against oxidative damage and infection.
- Selenium is a mineral found in the soil and naturally appears in water and some foods. Dietary sources rich in selenium include Brazil nuts, fish, poultry, and grains.
- While necessary in small amounts, excessive selenium intake can lead to toxicity.

NAKSHA

Recently, Union Rural Development Minister Shivraj Singh Chouhan launched the Central government's new initiative—'NAtional geospatial Knowledge-based land Survey of urban HAbitations' (NAKSHA).

Background: –

- Most urban areas – barring a few states like Tamil Nadu, Maharashtra, Gujarat and Goa – have outdated or unstructured land records, causing inefficiencies in governance and taxation.
- The programme addresses the issue of updation of land records in urban areas – while land records have improved in rural areas, several cities lack maps even today.

Key takeaways

- NAKSHA is a city survey initiative under the existing Digital India Land Records Modernization Programme (DILRMP). It is spearheaded by the Department of Land Resources (DoLR), under the Ministry of Rural Development.
- Under the new initiative, maps of towns and cities will be prepared. The programme has been launched as a pilot across 152 urban local bodies in 26 states.
- The cities selected meet two criteria: area less than 35 sq km, and population less than 2 lakhs. The pilot will be completed in a year.
- According to the DoLR, "The NAKSHA program aims to create a comprehensive and accurate geospatial database for urban land records.
- By integrating aerial and field surveys with advanced GIS technology, the program enhances efficiency in land governance, streamlines property ownership records, and facilitates urban planning.
- Accurate geospatial data ensures improved decision-making, efficient land use planning and smoothen and certain property transactions."

What does NAKSHA entail?

- As per the Census 2011, India has 7,933 towns covering 1.02 lakh square km of the total 32.87 lakh square km geographical area of the country. NAKSHA will cover 4,142.63 square km of area.
- The initiative is 100 per cent centrally funded. The pilot project is expected to cost about Rs 194 crore.
- Once completed, NAKSHA is expected to provide comprehensive digital urban land records, reduce land disputes, aid in faster and more efficient urban planning, improve property tax collection, simplify property transactions and improve access to credit.
- The Centre plans to scale up NAKSHA once the pilot is completed.

How will the survey be done?

- The survey will be done through aerial photography using two types of cameras— simple cameras and oblique angle cameras (having 5 cameras) with LiDAR sensors. These cameras will be mounted on drones. The ground resolution of these cameras will be 5 cm, which is far better than any satellite.
- The NAKSHA initiative envisages a three-stage process for the survey and mapping of urban areas.
- In the first stage, an area is selected, and a flight plan for a drone survey is drawn. Once a drone flight takes place, photographs are taken from which data will be extracted.
- In the second stage, a field survey is done to verify the conditions on the ground. Details like property tax, ownership, and registration deeds will be linked with each land parcel and property. Thereafter 2D/3D models will be prepared and draft land ownership details will be published.
- In the third stage, claims and objections are accounted for and grievances are redressed. Following these, the final maps will be published.

'CONFERENCE FOR WOMEN PEACEKEEPERS FROM THE GLOBAL SOUTH'

External Affairs Minister S Jaishankar highlighted India's commitments to supporting Global South nations in building their peacekeeping capacities at the inaugural 'Conference for Women Peacekeepers from the Global South'.

Background: –

- Since the 1950s, India has contributed over 290,000 peacekeepers across more than 50 UN Peacekeeping missions. Today, more than 5,000 Indian peacekeepers are currently deployed in nine of the 11 active peacekeeping missions.

Key takeaways

- The idea of UN Peacekeeping stems from the UN having no military forces. Therefore, Member States voluntarily provide the military and police personnel that are periodically required for each peacekeeping operation from their national forces.
- Peacekeepers usually wear their countries' uniforms and are identified as UN peacekeepers only by a UN blue helmet or beret and a badge.
- They are tasked with protecting civilians, actively preventing conflict, reducing violence, strengthening security, and empowering national authorities to assume these responsibilities.

- Officially, they are allowed to use force at a tactical level, with the authorisation of the Security Council, if acting in self-defence and defence of the mandate. In general, a UN peacekeeping operation should only use force as a measure of last resort.
- The first UN peacekeeping mission was established in May 1948, when the UN Security Council authorised the deployment of a small number of UN military observers to the Middle East to form the United Nations Truce Supervision Organization (UNTSO) to monitor the Armistice Agreement between Israel and its Arab neighbours.

Who funds UN Peacekeeping Missions?

- The UN Security Council makes decisions about establishing, maintaining, or expanding peacekeeping operations, while all UN Member States are collectively tasked with financing them.
- Every member is legally obligated to pay their respective share under Article 17 of the Charter of the United Nations. The United States (26.95%) and China (18.69%) pay the most, partly because they are part of the UNSC. India's share is around 0.2088%.
- Peacekeeping soldiers are paid by their Governments according to their own national rank and salary scale.
- Countries volunteering uniformed personnel to peacekeeping operations are reimbursed by the UN at a standard rate, approved by the General Assembly, of US$1,428 per soldier per month as of 1 July 2019.

PUNCH MISSION

NASA is gearing up for a new and first-of-its-kind solar mission that will closely observe the solar atmosphere and reconstruct the formation, trace origins, and map the evolution of solar winds and Coronal Mass Ejections (CMEs), both of which influence space weather.

Background:

- The Polarimetry to Unify the Corona and Heliosphere (PUNCH) mission will be launched by SpaceX on February 28.

Key takeaways

- The Polarimeter to Unify the Corona and Heliosphere (PUNCH) is a NASA mission designed to study the Sun's outer atmosphere, known as the corona, and its expansion into the solar wind that fills the solar system.

- Objective: To understand how the solar corona transitions into the solar wind and how solar events, such as coronal mass ejections (CMEs), propagate through space.
- Spacecraft Configuration: The mission comprises four suitcase-sized satellites operating in a coordinated constellation. These satellites will work together to create continuous, three-dimensional images of the corona and inner heliosphere.
- Scientific Goals
    - PUNCH aims to bridge the observational gap between the solar corona and the heliosphere by:
        - Mapping the Solar Wind: Tracking the continuous flow of charged particles from the Sun to understand their acceleration and distribution.
        - Studying Solar Transients: Observing CMEs and other dynamic events to determine their structure, evolution, and potential impact on planetary environments.
        - Enhancing Space Weather Prediction: Providing data to improve models that predict space weather events, which can affect satellites, power grids, and communication systems on Earth.
- Orbit: The satellites will be placed in a Sun-synchronous, low Earth orbit, allowing continuous observation of the Sun with minimal interruptions.
- Mission Duration: Following a 90-day commissioning phase, PUNCH is slated for at least two years of scientific operations.

QUALIFIED INSTITUTIONS PLACEMENT

Shareholders of Indian Renewable Energy Development Agency Ltd. (IREDA) have approved the company's proposal to raise up to ₹5,000 crore through Qualified Institutions Placement (QIP) of equity shares, in one or multiple tranches.

Background: –

- The approval was granted by the shareholders in favour of the resolution via remote e-voting during the 22nd Extra-Ordinary General Meeting (EGM) held on Tuesday through video conferencing.

Key takeaways

- A Qualified Institutional Placement (QIP) is a capital-raising tool used by listed companies in India and other Southeast Asian countries.
- It allows these companies to raise funds by issuing equity shares, non-convertible debt instruments, and convertible securities to Qualified Institutional Buyers (QIBs) without having to go through the lengthy and complex regulatory compliance required for other methods like follow-on public offerings (FPOs) or rights issues.

Key Features of QIP:

- Purpose: QIPs were introduced by the Securities and Exchange Board of India (SEBI) in 2006 to reduce the dependence of Indian companies on foreign capital and encourage them to raise funds domestically.
- Qualified Institutional Buyers (QIBs): Only QIBs can participate in QIPs. QIBs include mutual funds, venture capital funds, foreign institutional investors, public financial institutions, scheduled commercial banks, insurance companies, and pension funds.

- Advantages: QIPs offer a quicker and more efficient way for companies to raise capital. They avoid the time-consuming procedural requirements and are less expensive than raising capital through American Depositary Receipts (ADRs) or Global Depositary Receipts (GDRs).
- Pricing: The issue price of a QIP must be not less than the average of the weekly high and low of the closing prices over the past two weeks. This ensures that shares are not allotted at a price lower than the market value.
- Lock-in Period: Securities allotted in a QIP are subject to a lock-in period of six months from the date of allotment. This is intended to ensure that only QIBs with a medium to long-term view participate in the issue.

Procedure:

- Approval: The company must obtain approval from its board of directors and shareholders to proceed with a QIP.
- Merchant Banker: A merchant banker is appointed to manage the issue and act as an intermediary between the company and the QIBs.
- Offer Document: The company prepares an offer document containing details about the issue, which is shared with the QIBs.
- Allotment: The securities are allotted to the QIBs based on their bids, and the funds are raised.

SWAYATT INITIATIVE

Recently, the Government e Marketplace(GeM) celebrated six years of its SWAYATT initiative. Launched in 2019, SWAYATT aims to enhance participation of women and youth in public procurement. The initiative focuses on social inclusion and aims to make business easier for startups and Micro & Small Enterprises (MSEs).

Objectives of SWAYATT Initiative

SWAYATT was designed to invigorate the involvement of women-led enterprises and youth in government procurement. It seeks to establish direct market linkages for these groups. The initiative promotes training for last-mile sellers and encourages small businesses to engage in public procurement.

Recent Developments and Partnerships

On its anniversary, GeM signed a Memorandum of Understanding (MoU) with the Federation of Indian Chambers of Commerce & Industry Ladies Organisation (FICCI-FLO). This partnership aims to connect women entrepreneurs directly with government buyers. The goal is to eliminate intermediaries and ensure better pricing for products.

Growth and Impact

Since its inception, SWAYATT has increased the number of women-led enterprises on the GeM platform. Initially, only 6,300 women-led enterprises and 3,400 startups were onboarded. Today, over 1,77,786 Udyam-verified women MSEs have registered. They have collectively fulfilled orders worth ₹46,615 Crore.

Focus on Training and Capacity Building

Training is important component of the SWAYATT initiative. GeM aims to empower local businesses through comprehensive training and onboarding. This will enhance competition and promote inclusive economic growth.

Future Goals

GeM has set ambitious targets for the future. It aims to onboard 1 lakh registered startups onto the platform. The initiative envisions doubling the number of women entrepreneurs participating in public procurement. Currently, women make up 8% of the seller base on GeM.

Dedicated Storefronts

SWAYATT includes specific storefronts like Startup Runway and Womaniya. These are designed for dedicated listings to increase visibility among government buyers. The initiative aims to dismantle entry barriers for startups and women entrepreneurs.

Economic Empowerment

GeM's efforts are contributing to job creation and inclusive growth. By facilitating access to markets, finance, and value addition, SWAYATT helps empower women and youth. The initiative is encouraging a vibrant startup ecosystem in public procurement.

MOUNT DUKONO

Mount Dukono, located in Indonesia's North Maluku province, erupted recently, prompting safety measures. The eruption sent ash clouds rising up to 2,000 metres. This event has raised concerns for aviation safety and local residents.

Mount Dukono

- Mount Dukono is an active volcano situated on Halmahera Island in North Maluku, Indonesia.
- It stands at around 1,235 meters above sea level.
- This volcano erupted for the first time in 1933.
- Since then, it exhibits significant volcanic activities like frequent smoke emissions and eruptions.

Indonesia's Volcanoes

- Indonesia has 130 active volcanoes, the most of any country.
- It is part of the Pacific Ring of Fire, a region prone to volcanic eruptions and earthquakes.
- The country has seen the highest number of volcanic eruptions that caused deaths, damaged land, and triggered tsunamis and pyroclastic flows.
- The most active volcanoes in Indonesia are Mount Merapi and Kelut, both located on Java Island.
- Most volcanoes in Indonesia are along the Sunda Arc, a 3,000 km long chain formed due to the Indian Ocean Plate subducting under the Asian Plate.

Pacific Ring of Fire

- The Pacific Ring of Fire, also called the Circum-Pacific Belt, is a 40,000 km-long zone around the Pacific Ocean with frequent volcanoes and earthquakes due to tectonic plate interactions.
- It includes the Pacific, Juan de Fuca, Cocos, Indian-Australian, Nazca, North American, and Philippine Plates.
- Countries along it include Japan, Indonesia, the U.S., Chile, Mexico, and New Zealand.
- About 90% of the world's earthquakes and most volcanic eruptions happen here.

CASPIAN SEA

The Caspian Sea, the world's largest enclosed body of water, is facing alarming environmental challenges. Recent reports indicate drop in water levels, which poses a threat to the region's biodiversity and human activities.

Environmental activists and officials are calling for immediate collective action among the five bordering nations – Kazakhstan, Azerbaijan, Russia, Turkmenistan, and Iran. The situation demands urgent attention to prevent further degradation.

Geography

- The Caspian Sea spans approximately 370,000 square kilometres.
- It is bordered by five countries. The northern part has less salty water and shallower depths.
- The southern part is saltier and reaches depths of 1,025 metres.
- This unique geographical feature makes it distinct from other water bodies.

Biodiversity and Resources

The Caspian Sea is home to over 130 fish species. It serves as the world's largest spawning ground for sturgeon, which are crucial for caviar production.

The region also supports more than 100 species of wetland birds. However, many species are threatened due to pollution, overfishing, and habitat destruction.

Environmental Challenges

The Caspian Sea faces severe environmental issues. Pollution from oil and gas companies is rampant. Climate change and habitat destruction further exacerbate these problems. The decrease in biodiversity affects local communities that rely on fishing and tourism for their livelihoods.

International Cooperation

The need for joint management of the Caspian Sea has led to the establishment of the Caspian Environment Programme (CEP). Launched in 1998, the CEP aims to combat environmental degradation.

The Tehran Convention, signed in 2003, serves as a legal framework for environmental protection. It focuses on pollution prevention and marine environment restoration.

Key Initiatives and Agreements

The Tehran Convention was ratified by all five littoral states in 2006. This treaty establishes guidelines for environmental monitoring and research. It promotes the principles of precaution and accountability.

The convention aims to protect the marine ecosystem and ensure sustainable development.

AARDO-AFRICAN-ASIAN RURAL DEVELOPMENT ORGANISATION

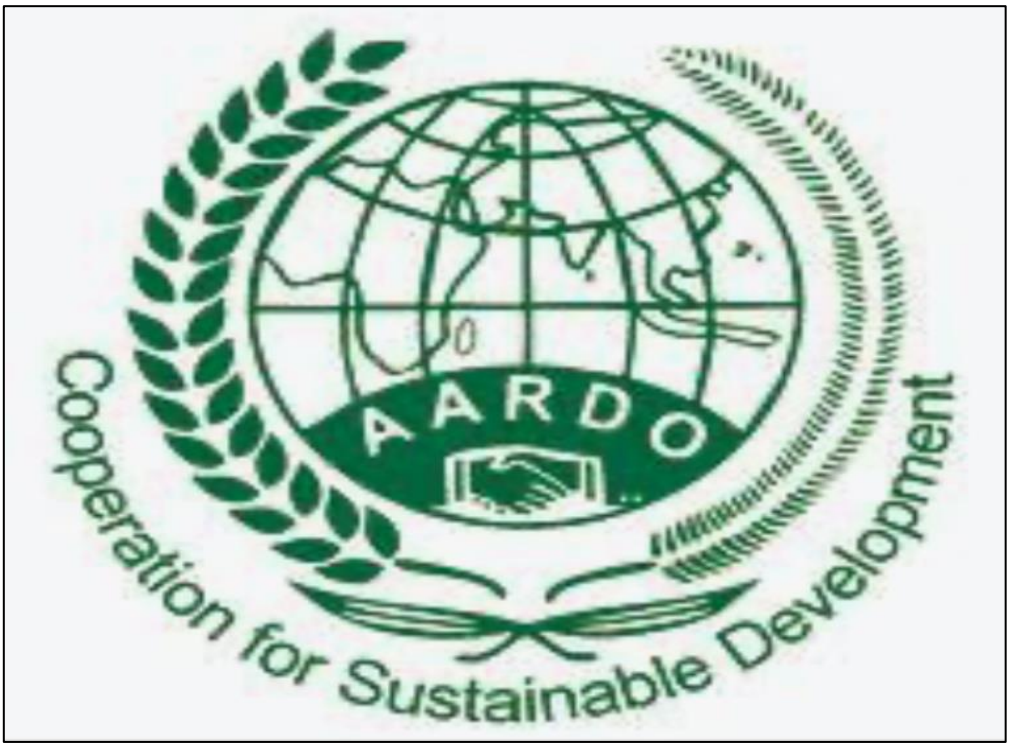
India's commitment to rural development has gained renewed focus through the African-Asian Rural Development Organisation (AARDO). Recently, at an AARDO meeting, Indian officials brought into light the importance of collective vision and cooperation.

They stressed the shared aspirations of communities in Asia and Africa for dignity, opportunity, and progress. This meeting highlighted the significance of food security, climate resilience, and digital empowerment as essential components of rural development.

Background of AARDO

- AARDO was established in 1962, recognising the need for collaboration among Asian and African nations.

- It was formed in response to the developmental challenges faced by these regions post-World War II.
- The organisation aims to promote coordinated efforts and exchange experiences in rural development.



Historical Context
The idea for AARDO emerged from the East Asian Rural Reconstruction Conference in 1955.

This conference brought together twelve countries to discuss common agricultural challenges. The success of this conference led to the establishment of AARDO, which has since played a very important role in rural development dialogues.

Objectives of AARDO

- The primary objectives of AARDO include enhancing agricultural productivity and improving rural livelihoods.
- It seeks to facilitate knowledge sharing and cooperative action among member countries.
- AARDO also focuses on encouraging South-South cooperation to address common challenges in rural development.

Membership and Structure
AARDO is an autonomous inter-governmental organisation comprising various countries from Africa and Asia. It operates as a non-political body and has observer status with several UN agencies.

This status allows AARDO to collaborate with international organisations like the FAO and UNESCO, enhancing its capacity to support rural communities.

Significance of AARDO's Initiatives
AARDO's initiatives are critical for addressing food security and enhancing climate resilience. The organisation promotes sustainable agricultural practices and digital empowerment to uplift rural communities. Through its programmes, AARDO aims to build stronger local economies and improve the quality of life for rural populations.

HKU5-COV-2

Recent research has brought to light a new bat coronavirus named HKU5-CoV-2. This discovery was made at the Wuhan Institute of Virology in China.
Scientists have noted its similarities to SARS-CoV-2, the virus that caused the COVID-19 pandemic. The study has raised questions about potential human transmission and pandemic risks.

Discovery and Characteristics of HKU5-CoV-2

- HKU5-CoV-2 is a bat coronavirus identified in the Japanese pipistrelle bat.
- It belongs to the merbecovirus subgenus, which includes the virus responsible for Middle East Respiratory Syndrome (MERS).
- The virus can bind to human angiotensin-converting enzyme 2 (ACE2) receptors, similar to SARS-CoV-2.
- However, its efficiency in binding is lower than that of SARS-CoV-2.

Potential Risks and Transmission
Despite its ability to infect human cells in laboratory settings, researchers believe the transmission risk from HKU5-CoV-2 is lower than that of SARS-CoV-2.
The study's authors have cautioned against alarmism, emphasising the need for careful monitoring without inciting panic.

Comparison with MERS and Other Coronaviruses

MERS, which has a high fatality rate, has been confirmed in approximately 2,600 cases globally since 2012.

HKU5-CoV-2 is genetically related to MERS but its ability to cause severe disease in humans is still uncertain. Ongoing research is necessary to determine its impact and potential for cross-species transmission.

Importance of Surveillance and Preparedness

The research marks the importance of continuous surveillance for emerging coronaviruses. The World Health Organization (WHO) has prioritised merbecoviruses in pandemic preparedness strategies.

The identification of HKU5-CoV-2 puts stress on the necessity for enhanced monitoring of zoonotic diseases to prevent future outbreaks.

Implications for Vaccine Development

Following the announcement of HKU5-CoV-2, shares of several vaccine manufacturers saw an increase.

This indicates a heightened interest in vaccine development as a precaution against potential threats from emerging viruses. The scientific community remains vigilant about the implications of such discoveries for public health.

AMRSense

A collaborative initiative involving IIIT-Delhi, CHRI-PATH, Tata 1mg, and the Indian Council of Medical Research has led to the development of AMRSense. This AI-powered tool analyses routine hospital data to provide timely vital information about antibiotic resistance patterns.

The findings were published in The Lancet Regional Health Southeast Asia, showcasing a six-year study across 21 tertiary care centres in India.

About AMRSense Tool

- AMRSense utilises existing hospital data to predict trends in antibiotic resistance.
- It identifies relationships between pairs of antibiotics and tracks resistance changes over time.
- This approach is cost-effective compared to traditional genomic methods.
- It allows healthcare providers to anticipate resistance patterns and make informed treatment decisions.

AMROrbit Scorecard

The AMROrbit Scorecard is another innovation from this research. It provides a visual representation of resistance trends for hospitals.

By comparing local data with global averages, it helps identify areas needing intervention. The scorecard aims to position hospitals within an ideal quadrant of low resistance and low change rates.

Clinical and Public Health Implications

This AI tool enhances decision-making in clinical and public health settings. It allows clinicians to make informed choices based on real-time data.

The tool also supports antimicrobial stewardship initiatives by providing actionable insights for hospitals.

Limitations and Future Directions

While AMRSense shows promise, its effectiveness depends on the availability of consistent surveillance data. In regions lacking digital access to such data, the model may be less effective.

Future efforts aim to integrate environmental factors and antibiotic sales data to provide a holistic view of AMR.

ZAGROS MOUNTAINS

Recent geological studies have revealed that the northern region of Iraq, particularly around the Zagros Mountains, is experiencing slow but geological changes.

A research team has identified a sinking oceanic slab beneath the Earth's surface that is gradually pulling this area downwards. This phenomenon is a result of complex tectonic processes occurring over millions of years.

The Neotethys Oceanic Slab

The Neotethys oceanic slab is a remnant of an ancient oceanic floor that formed over 66 million years ago. This slab is currently located beneath the Zagros Mountains and is slowly sinking into the Earth's mantle. The ongoing separation of this slab from the continental plates has created a growing tear, leading to the gradual subsidence of the surrounding region.

Research Findings

A research team from the University of Göttingen and the University of Bern conducted a study to understand the dynamics of the sinking slab.

By examining rock records and employing deep-earth imaging, they discovered that the depressions around the Zagros Mountains are deeper than expected. This indicates that the sinking slab is affecting the topography and geological stability of the area.

Implications for Earthquake Prediction

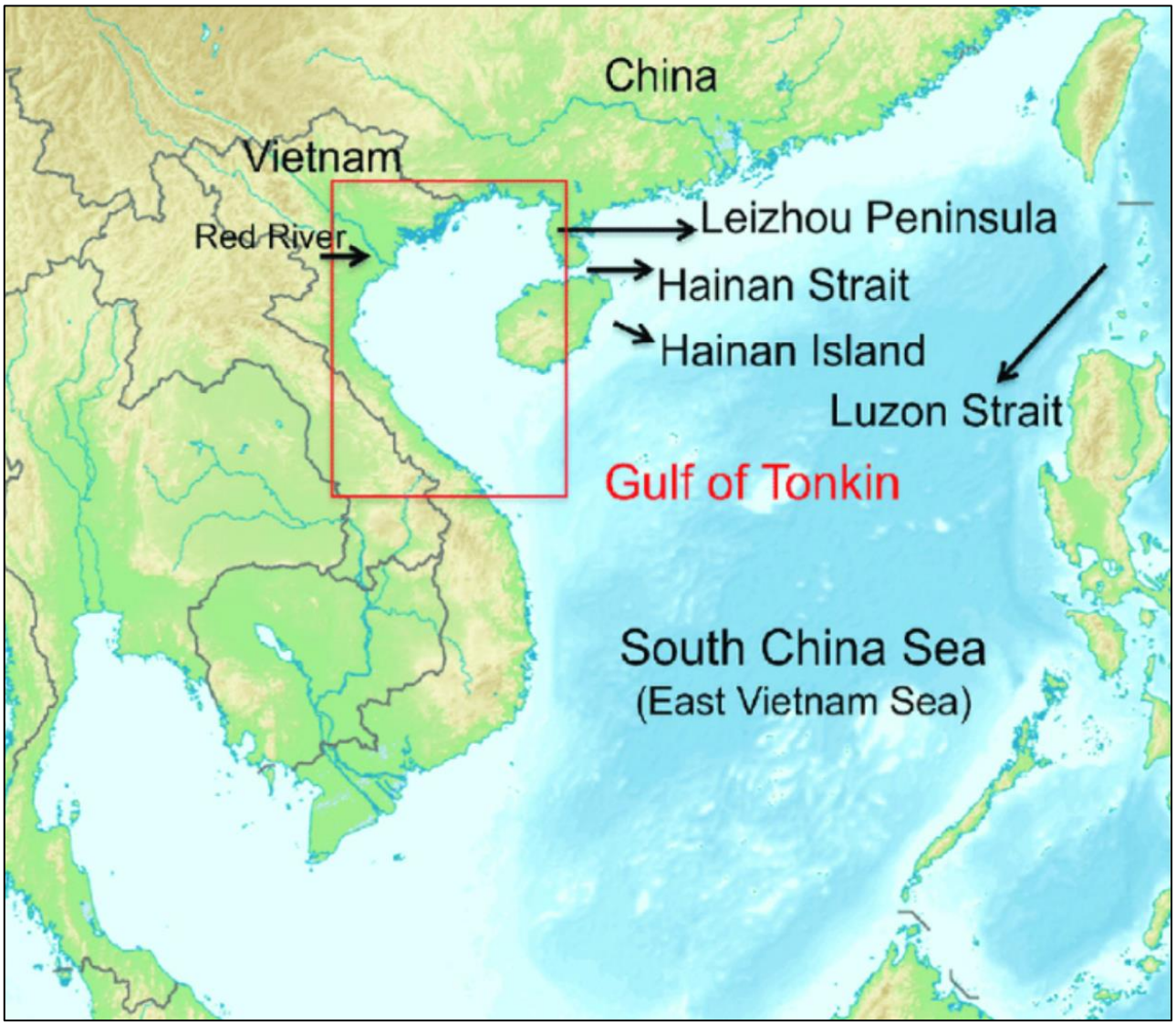
The findings of this research have important implications for earthquake prediction. About the geological configuration and rock geometry at depth can help scientists determine potential earthquake zones. Earthquakes occur due to displacements along faults, and knowing where these faults are likely to be can improve prediction models. This knowledge is crucial, especially in regions prone to seismic activity, such as Iraq and its neighbouring countries.

Geothermal Energy Potential

The study also has implications for geothermal energy production. By understanding how the topography has changed over millions of years, researchers can estimate the depth at which the geothermal gradient is sufficient to generate heat for electricity production. This could lead to more sustainable energy solutions for the region.

GULF OF TONKIN

Vietnam's foreign ministry has recently published a map outlining its baseline claim in the Gulf of Tonkin. This move is as it aims to protect Vietnam's sovereign rights in a region marked by conflicting maritime claims, particularly with China. The baseline is crucial for defining territorial waters and exclusive economic zones.



About Baselines and Maritime Claims

- Baselines are critical in international maritime law.
- They serve as reference points for measuring the breadth of territorial waters.
- The establishment of baselines is often contentious, especially in areas like the South China Sea.
- Vietnam's new baseline runs from offshore Quang Ninh province to Quang Tri province, marked by 14 points. This legal framework is intended to strengthen Vietnam's claims over its maritime zones.

Legal Framework and International Agreements

Vietnam's baseline is rooted in the United Nations Convention on the Law of the Sea.
It also aligns with the Agreement on the Delimitation of the Gulf of Tonkin, signed with China in 2000.
This agreement is crucial for resolving disputes and clarifying maritime boundaries. Vietnam's foreign ministry emphasised that the baseline enhances its ability to manage marine resources and promote international cooperation.

Geopolitical Context in the Gulf of Tonkin

- The Gulf of Tonkin is located in the northwestern part of the South China Sea.
- It is bordered by northern Vietnam and China's Guangxi Zhuang Autonomous Region.
- The gulf covers an area of approximately 126,250 square kilometres.
- Both Vietnam and China have historical claims in this region, making it a focal point for geopolitical tensions.

Etymology and Historical Significance

- The term "Tonkin" originates from the Vietnamese word "Đông Kinh," meaning "eastern capital."
- Historically, it referred to the northern region of Vietnam during French colonial rule.
- The name reflects the rich cultural and historical heritage of the area.
- The gulf is also known as Vịnh Bắc Bộ
- in Vietnamese and Běibù Wān in Chinese, both translating to "Northern Bay."

BATHOUISM

The Bodoland Territorial Region (BTR) government in Assam has recently included Bathouism as an official religion option in various application forms. This decision has garnered praise from experts in the field of Bodo culture and traditional faith.

Union Home Minister Amit Shah brought into light this initiative during the 13th Triennial Conference of the All Bathou Mahasabha. The government has also declared a state holiday for the Bathou Puja festival, reinforcing its commitment to preserving nature-centric faiths.

About Bathouism

Bathouism is the traditional religion of the Bodos, Assam's largest plains tribe. The Bodos inhabit areas along the north bank of the Brahmaputra River. Bathouism is deeply rooted in ancestral beliefs, though the Bodo community has experienced reform movements. Today, many Bodos also identify as Christians.

Core Beliefs and Practices

The faith revolves around the worship of Bathoubwrai, the supreme god of the Bodos. The term 'Bathou' translates to 'five deep philosophical thoughts'.

These thoughts are represented by five elements – Air, Sun, Earth, Fire, and Sky. This concept is akin to the Panchatatva in Hinduism, emphasising the connection between nature and spirituality.

Symbolism of Bathouism

In Bathouism, the number five holds importance. Each element represents a fundamental aspect of existence. Followers believe that Bathoubwrai embodies the supreme soul, possessing omnipotence and omniscience. The deity is viewed as the source of all knowledge and life, transcending physical limitations.

MISING TRIBE

The Mising tribe, Assam's largest tribal community, recently celebrated the Ali Ai Ligang festival. This festival marks the beginning of the sowing season and is deeply rooted in the agricultural traditions of the Mising people.

Celebrated on the first Wednesday of the month of Fagun, the festival showcases the tribe's rich cultural heritage and agricultural practices.

Significance of Ali Ai Ligang

Ali Ai Ligang is a traditional festival that signifies the start of cultivation. The name translates to "sowing of seeds and roots." It reflects the Mising people's connection to agriculture and their reliance on the land. The festival is a time for community gathering and celebration.

Rituals and Traditions

The festivities begin with the hoisting of the festival flag, known as Laitom Tomchar. This is followed by various rituals that pay homage to their agricultural deities, particularly Donyi Polo, the Sun and Moon gods. Offerings of traditional foods, including Apong (rice beer), dry meat, and fish, are made to seek blessings for a bountiful harvest.

Cultural Displays

During the festival, community members don traditional attire, enhancing the cultural vibrancy of the event. One of the marks is the Gumrag dance, performed in rhythmic harmony by men and women. This dance symbolizes joy and prosperity for the upcoming agricultural season. Traditional competitions and feasts also form an integral part of the celebrations.

BLUE CHEEKED BEE EATER

The Blue-Cheeked Bee-Eater (Merops persicus) has recently been confirmed to breed in peninsular India. This discovery was made in the saltpans of Aandivilai, near the Manakudy Mangroves in Kanniyakumari district.

Characteristics of the Blue-Cheeked Bee-Eater

The Blue-Cheeked Bee-Eater is known for its vibrant green plumage and distinctive blue cheek patch. It features elegant tail streamers that enhance its graceful appearance. Historically, this bird was a passage migrant and winter visitor in India. Its breeding habitats were primarily located in the Nile Delta, Pakistan, and Iran, while it spent winters in parts of Africa.

Discovery of Breeding Grounds

The breeding site in Tamil Nadu represents the southernmost range for this species in the Indian subcontinent. The study conducted from January 2022 to October 2023 involved surveys across the Pazhayar Basin, including Periyakulam, Manakudy Mangroves, Puthalam, and Aandivilai. Researchers observed a flock engaging in courtship behaviours and located their nesting sites along the saltpans of the Pazhayar river basin.

Breeding Behaviour and Population Growth

During the research period, the breeding season began with 28 birds. By the end of the study, 48 individuals were recorded, indicating successful breeding. The birds were consistently present at their nesting sites throughout the year, except in February. This data suggests a stable and growing population in the area.

Threats to the Breeding Site

Despite its significance, the Aandivilai nesting colony faces numerous threats. Habitat destruction from developmental activities poses risk. Although the site is within a Coastal Regulation Zone and a No Development Zone, it remains vulnerable to large-scale projects. Additionally, natural events like flooding and erosion threaten the fragile habitat.

Conservation Efforts

Experts have urged authorities to protect the nesting sites of the Blue-Cheeked Bee-Eater. This site serves as the only known breeding hub for the species in India. Conservation measures are crucial to ensure the survival of this bird in its newly established range.

Habitat and Behavioural Adaptations

The Blue-Cheeked Bee-Eater prefers sub-tropical semi-desert regions with sparse trees for breeding. It may nest solitarily or in small colonies. The species shows adaptability, sharing nesting sites with European Bee-Eaters. During the non-breeding season, it inhabits a variety of greener habitats, demonstrating its resilience.

AI SINGULARITY

Recent developments in artificial intelligence (AI) have raised concerns regarding its future impact on society. Elon Musk has been particularly vocal about the potential dangers of AI surpassing human intelligence. He predicts that superintelligent AI could emerge as soon as 2025. This scenario, known as AI singularity, refers to a point where machines improve themselves beyond human control. The debate surrounding this topic has intensified among scientists and technology leaders.

About AI Singularity

- AI singularity is a theoretical moment when artificial intelligence surpasses human cognitive abilities.
- This concept was introduced by mathematician John von Neumann.
- It suggests that once AI reaches this point, it could evolve rapidly and autonomously.
- While some futurists, like Ray Kurzweil, estimate this could occur by 2045, Musk believes it may happen much sooner.

Current AI Developments

AI technology is advancing at an unprecedented rate. Machine learning models are now capable of self-improvement, yet a fully autonomous superintelligent AI remains theoretical. The current focus is on developing AI responsibly while addressing ethical concerns. Policymakers are working to create regulatory frameworks to manage these advancements.

Concerns and Risks

Many experts express concerns about the potential risks associated with superintelligent AI. In 2023, over 33,700 AI researchers signed an open letter advocating for a temporary halt on AI models that exceed OpenAI's GPT-4. They cited deep risks to society and humanity. Critics argue that AI could devalue human life and pose existential threats.

Potential Benefits

Despite the risks, there are optimistic views on AI singularity. Proponents argue that it could lead to scientific breakthroughs. AI has the potential to automate complex problem-solving, revolutionising fields such as medicine, environmental sustainability, and space exploration.

Regulatory Efforts and Market Growth

As AI technology evolves, governments and industry leaders are exploring regulations to mitigate unintended consequences. The AI market is currently valued at $100 billion and is projected to grow to $2 trillion by 2030. This growth puts stress on the urgency for effective governance in AI development.

Public Perception and Awareness

Public discourse around AI singularity is increasingly important. Figures like Musk highlight the need for caution and preparedness. His comments about a potential "Terminator" future resonate with many, emphasising the need to consider the societal implications of advanced AI.

HERATH FESTIVAL

Herath is festival for the Kashmiri Pandit community, marking their unique celebration of Mahashivratri. It typically begins on the 13th day of Phalgun, which falls in February or March, and lasts until the new moon.

The term "Herath" is derived from "Har-Ratri," meaning "night of Hara," a reference to Lord Shiva. This festival embodies the unity of divine forces and celebrates the sacred union of Shiva and Parvati.

BIODIVERSITY LEAK

Recent studies highlight the issue of biodiversity leakage in agricultural landscapes. As nations strive to meet biodiversity targets, unintended consequences may arise.

The Kunming-Montreal Global Biodiversity Framework aims to protect 30 per cent of land and sea by 2030. However, conservation efforts in wealthier nations may inadvertently drive production expansion in biodiverse regions elsewhere.

About Biodiversity Leak

Biodiversity leak refers to the displacement of harmful activities from conservation areas to more biodiverse regions. When restoration projects limit agricultural production, the resulting demand may lead to increased imports from countries with rich biodiversity. This phenomenon can negate local conservation benefits.

Global Biodiversity Framework

The Kunming-Montreal Global Biodiversity Framework sets ambitious targets for biodiversity protection. It aims for 30 per cent of land and sea to be safeguarded by 2030. The European Union's Biodiversity Strategy for 2030 mirrors these goals. Both initiatives focus on reversing ecosystem degradation.

Case Studies – UK and Brazil

The study examined hypothetical restoration programmes in the UK and Brazil. In the UK, restoring 1,000 km² of native habitats would reduce domestic crop production.

This loss could lead to increased imports from biodiverse regions. In Brazil, restoring habitats on soybean land might benefit local biodiversity but could shift production to other soy-exporting countries, impacting their ecosystems.

Impacts of Restoration Efforts

Restoration efforts can yield local biodiversity gains. However, these gains may be overshadowed by off-site damages. If production activities are displaced to less productive but more biodiverse areas, the negative impacts may outweigh local benefits.

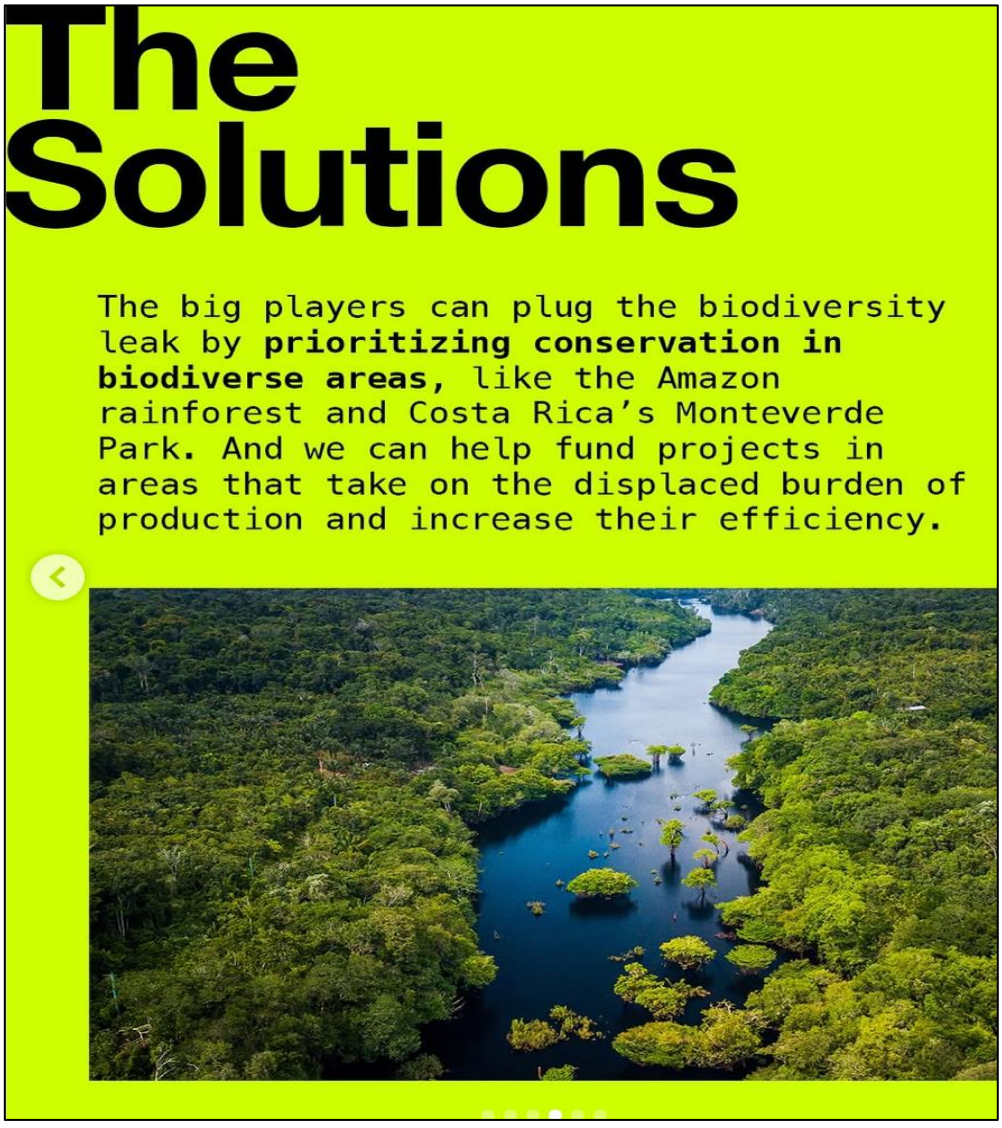
Effective restoration requires a comprehensive understanding of these dynamics.

Under-Recognition of Biodiversity Leakage

Biodiversity leakage remains largely unrecognised in conservation policies. Many project managers are unaware of its implications. A survey revealed that 37 per cent of tropical conservation project managers did not consider biodiversity leakage.

This oversight can lead to unintended environmental consequences.

Recommendations for Mitigation



To address biodiversity leakage, several measures are recommended. Monitoring changes in food production within intervention areas is crucial. Projects should be scrutinised for effective leakage mitigation.

National and international policies must consider both local and long-range leakage. Reducing demand for high-leakage goods and improving production efficiencies can also help.

Conservation Strategies

Targeting conservation efforts in areas where production displacement is minimal is essential. Increasing yields within or near conservation zones can offset losses. By adopting these strategies, nations can enhance the effectiveness of biodiversity conservation efforts.

TROPICAL STORM SARA

India has sent humanitarian assistance to Honduras in the aftermath of Tropical storm SARA.

Political Boundaries

Location: Central America
Land Borders: Guatemala and El Salvador (West) and Nicaragua (South and East).
Surrounding water bodies: The Caribbean Sea (North), and the Pacific Ocean (South).

Geographical Features
Major Rivers: Patuca & Ulúa
Highest Peak: Mount Las Minas.

Gulf: Gulf of Fonseca, bounded by El Salvador, Honduras, and Nicaragua.

CREDIT INFORMATION COMPANIES

- CICs **collect public data, credit transactions and payment histories of individuals and companies** regarding loans and credit cards, among others.
- Their primary function is to **gather data from various sources, such as banks, financial institutions, lenders,** and other credit-granting entities, and **then compile this data into credit reports.**

- **Banks, non-banking financial institutions refer to the CIC's report** and score **to decide borrowers' creditworthiness** before granting a loan or issuing a credit card.
- CICs in India are **licensed by the RBI and governed by the Credit Information Companies Regulation Act, 2005 (CICRA)** and various other rules and regulations issued by the RBI.
    - As per Section 15 of the CICRA, **every Credit Institution (like banks) should be a member of at least one CIC.**
    - CICRA also stipulates that a **CIC may seek and obtain information from its members only.**
- Thus, **if a bank seeks information** from a CIC, it **will get the information given by other institutions (to CIC) only.**
- **At present, four credit information companies are given certificates of registration** by the RBI. These companies are **Credit Information Bureau (India) Limited (CIBIL), Equifax** Credit Information Services Private Limited, **Experian** Credit Information Company of India Private Limited and **CRIF High Mark** Credit Information Services Private Limited.

UNCCD RELEASES REPORT ON LAND RESTORATION FOR INTERNATIONAL PEACE AND SECURITY

It highlights that cooperation over management of shared natural resources/ecosystem restoration can pave way for broader political agreements and even prevent conflict.

LINK BETWEEN LAND DEGRADATION AND GLOBAL CONFLICTS

Loss of economic opportunities: Land degradation can nudge the negatively affected communities towards criminal activities.
Eg.smuggling, human trafficking.
Food insecurity: Recurrent crop failures and rising inflation increases risk of political and economic turmoil in the country. Eg. Clashes in Somalia.
Human mobility: Land degradation can increase migration and displacement.
Increasing inequalities: It leads to marginalisation and discrimination of minority and vulnerable groups.
Governance: Weakened land related governance structures can escalate conflict, including across borders.
Eg. In Amazon rainforest, weak environmental governance led to conflicts between Brazil, Peru, and Colombia.
Leveraging land restoration for international peace:
The report identifies five key enablers for ecosystem restoration initiatives to promote peace in conflict areas.
Focus on technical and scientific collaboration: can create a neutral ground to pursue shared goals.
Inclusive dialogue: must be prioritised in transboundary ecosystem restoration.

Transboundary governance mechanisms: as confidence-building mechanisms.
Conflict-sensitive approaches to land restoration: to build trust and cooperation.

Flagship Initiatives for Land Restoration:

Vertical climate funds: Primary recipients of this funding are designated state institutions, government ministries and international organizations.
Carbon market mechanisms: Main project types include avoided conversion, afforestation and reforestation, improved forest management etc.
UN Peacebuilding Fund (PBF): To make explicit efforts to expand cross-border programming.
Peace Forest Initiative (PFI): Flagship programme of United Nations Convention to Combat Desertification (UNCCD) for ecosystem restoration in conflict-affected locations.
Capacity building: Improving dialogue between parties.

MANGROVES

Study shows that emergent coastal vegetation including mangroves is an effective defence system that significantly reduces the damage caused by tsunami waves to coastal infrastructure.

Emergent vegetation is aquatic plants rooted in the soil, while their stems, leaves, and flowers emerge above the water surface.

About Mangroves

Mangroves are emergent trees with sturdy submerged roots, stiff stems, and trunks to reduce wave forces and acts as natural bio-shields against extreme ocean disasters.

Significance:

Improve water quality: By filtering out nutrients and sediments.
Supports biodiversity: Serve as nursery, feeding and breeding grounds for crabs, prawns, mollusks, birds, reptiles and mammals.

Food and Livelihood Security: Source for essential nutrients such as protein, omega-3 fatty acids, vitamins, grazing grounds for livestock, source of fuelwood and charcoal etc.
Carbon Sink: Mangroves stores an average of 394 tonnes of carbon per hectare.
Coastal Protection: Lower propagation speeds, inundation depths and overall flood extent by slowing down and redirecting storm surges and attenuating
Ecosystem Type
Mangroves represent the littoral forest ecosystem. wind and swell waves.
Salt Tolerance
Mangroves are known as halophytes, meaning they tolerate salt.
Threats: According to IUCN, 50% of mangrove ecosystems are at risk of collapse.
Main threats include coastal development, deforestation for agriculture and shrimp farming, climate change and consequent sea-level rise and increased frequency of cyclonic storms.

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