# KERALA STATE CIVIL SERVICE ACADEMY

Established under Centre for Continuing Education Kerala (CCEK)

# MONTHLY CURRENT AFFAIRS MAGAZINE

## APRIL 2026

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Monthly Current Affairs Magazines

## FOREIGN CONTRIBUTION (REGULATION) AMENDMENT BILL, 2026

The Union government has deferred discussions on the Foreign Contribution (Regulation) Amendment Bill, 2026, following intense opposition and concerns regarding its impact on minority-led institutions.

**About FCRA Amendment Bill 2026:**

**What It Is?**

- The Bill seeks to amend the **Foreign Contribution (Regulation) Act (FCRA), 2010**, which governs how individuals, associations, and companies in India accept and utilize foreign donations. It introduces a stricter framework for managing assets and funds when an organization's registration is cancelled, surrendered, or expires.

**Aim:** The primary objective is to streamline the management of foreign assets and ensure that inflows do not adversely affect **national interest, public order, or national security**.

**Key Provisions Proposed:**

- **Creation of a Designated Authority:** The Bill empowers the Central government to appoint a **Designated Authority** to take over, supervise, and manage foreign contributions and assets if a registration is cancelled, surrendered, or ceases.

- **Expansion of Ceased Registration:** A registration certificate is deemed to have ceased if no renewal application is made, if renewal is denied, or if it is not obtained before the expiry date.

- **Provisional vs. Permanent Vesting:**
  - **Provisional:** Assets vest temporarily with the Authority during suspension or renewal delays; they are returned if registration is restored.
  - **Permanent:** Assets vest permanently if the person fails to renew registration within a prescribed period or if the entity becomes defunct.

- **Asset Disposal:** The Authority can transfer permanently vested assets to government departments or dispose of them via sale, with proceeds credited to the **Consolidated Fund of India**.

- **Religious Places of Worship:** For places of worship, the Authority can entrust management to a prescribed person, ensuring the **religious character** of the site is maintained.

- **Expanded Prohibitions:** The Bill expands the category of persons prohibited from accepting foreign aid to include any person (not just associations/companies) engaged in news production or broadcast.

- **Legal Protections and Penalties:**
  - **Appeals:** Aggrieved persons can appeal an order of the Authority to a **District Judge** within 90 days.
  - **Reduced Penalties:** The maximum imprisonment for contravening the Act is reduced from five years to **one year**.
  - **Prior Approval:** Central government approval is now required to initiate any investigation for offences under the Act.

## CONTEMPT OF COURT

It is prime news ever since the Supreme Court reacted to the treatment of the judiciary in the Class eight textbook brought out by the NCERT. Also, the Supreme Court in February 2026 directed the **UPSC** to initiate **contempt proceedings** against states delaying DGP appointments under the *Prakash Singh* guidelines.

This reinforces that contempt is an active tool for enforcing judicial mandates, not merely punitive.

**Key Details & Important Facts:**

- **Constitutional Source (Court of Record):**
  - **Article 129:** Supreme Court to be a Court of Record with power to punish for contempt of itself.
  - **Article 215:** High Courts to be Courts of Record with power to punish for contempt of themselves.
- **Statutory Framework: Contempt of Courts Act, 1971** (Defines and limits powers).
- **Definitions [Section 2]:**
  - **Civil Contempt:** Wilful disobedience to judgment/decree/order OR breach of undertaking given to court.
  - **Criminal Contempt:** Publication/scandalizing the court (lowers authority), prejudice/interference with judicial proceedings, or obstruction of justice.
- **Punishment [Section 12]:** Simple imprisonment up to **6 months**, fine up to **₹2,000**, or both. Apology may lead to discharge.

**Key Takeaway:** Freedom of speech does not permit "scandalizing" the court, especially by senior advocates (officers of the court).

**Relevant Keywords for Prelims:**

- **Case Laws:** *NCERT Row, Prashant Bhushan (2020), Prakash Singh (Police reforms), P.N. Duda (1988), E.M. Sankaran Namboodripad (1970).*
- **Legal Terms:** *Suo Motu* Cognizance (Court on its own motion), Scandalizing the Court, *Sub-Judice*.

**Core Theme:**

The core theme is the **delicate balance between protecting judicial authority and preserving fundamental rights**. While Articles 129/215 grant inherent powers to punish contempt to uphold the "majesty of law," the 1971 Act (especially Sections 3-5) protects **fair criticism** and **accurate reporting**. The 2006 amendment introducing "truth as a defence" modernized the law, aligning it with Article 21, but courts strictly require this truth to be in public interest and not a mere "camouflage" to scandalize.

## CABINET COMMITTEE ON SECURITY (CCS)

Prime Minister chaired the second special meeting of the Cabinet Committee on Security (CCS) to review India's preparedness and mitigation strategies amid the escalating West Asia conflict.

**About Cabinet Committee on Security (CCS):**

**What It Is?**

- The Cabinet Committee on Security is the **topmost decision-making body** in India regarding matters of national security, defense expenditure, and foreign affairs. It is one of the specialized committees of the Union Cabinet that handles sensitive strategic issues requiring high-level governmental intervention.

**Chaired By:** The CCS is chaired by the **Prime Minister of India**.

**Members:**

The committee traditionally consists of the senior-most ministers of the Union Cabinet:

- Prime Minister (Chair)
- Minister of Defence
- Minister of Home Affairs
- Minister of External Affairs
- Minister of Finance

**Aim:** The primary aim of the CCS is to ensure **national security** by reviewing and approving major defense acquisitions, formulating strategies to counter internal and external threats, and managing diplomatic and economic responses to global crises that affect India.

**Functions:**

- **Crisis Management:** Reviewing and directing measures during international conflicts, such as the current **West Asia crisis**, to protect national interests.
- **Supply Chain Security:** Ensuring the stability of essential commodities like **LPG, LNG**, and fertilisers during global volatility.
- **Defense Procurement:** Assessing and approving high-value capital acquisitions for the Indian Armed Forces.
- **Economic Mitigation:** Discussing interventions across sectors like **agriculture, shipping, aviation, and MSMEs** to mitigate emerging global challenges.
- **Internal Security:** Formulating policies to handle domestic issues such as terrorism, insurgency, and law and order.
- **Public Communication:** Underlining the need for the timely flow of **authentic information** to prevent misinformation and rumour-mongering during crises.

**Significance:**

- It provides a centralized platform for the highest level of leadership to make rapid, coordinated decisions on sensitive security matters.
- By reviewing **fuel duty reductions** and supply diversification, the CCS plays a crucial role in maintaining the stability of domestic prices and essential supplies.

## MATERNAL MORTALITY RATE IN INDIA

A recent study published in *The Lancet Obstetrics, Gynaecology, and Women's Health* (Global Burden of Diseases study) highlights India's struggle to meet the **Sustainable Development Goal (SDG) 3.1** target of reducing Maternal Mortality Ratio (MMR) to below **70 per 1 lakh live births** by 2030, despite significant historical progress.

**Key Details & Important Facts:**

- **India's MMR Trend:**
  - **1990:** 508 per lakh live births
  - **2023:** 116 per lakh live births
  - **Absolute Deaths:** Reduced from 1.19 lakh (1990) to 24,700 (2023)
- **Global Context:** India accounted for **one-tenth** of global maternal deaths in 2023 (global total: 2.4 lakh).
- **Current Status:** India falls in the **100–140 MMR** range of countries yet to meet the SDG target.
- **Regional Disparity (SRS Data 2021-23):**
  - **National:** 88
  - **Uttar Pradesh (pulling factor):** 141
  - **Assam (pulling factor):** 110
- **Major Causes:** Haemorrhage and hypertensive disorders account for over **40%** of maternal deaths—both largely preventable.
- **Data Contradiction:** UN Maternal Mortality Estimation Inter-Agency Group estimates India's MMR at **80** for 2023, while the Sample Registration System (SRS) places it at **88**.

**Relevant Keywords**

- **Organizations:** WHO (global health), Gokhale Institute of Politics and Economics, International Institute for Population Sciences (IIPS).
- **Locations:** Assam, Uttar Pradesh (states lagging), Democratic Republic of Congo, Nigeria, Pakistan (countries struggling alongside India).

**Core Theme:**

The core theme is the **uneven progress** in maternal health. While India has shown a remarkable long-term decline in MMR, the pace has slowed. The national average masks severe inter-state disparities, with large states like UP and Assam undermining national progress toward the 2030 SDG target.

## JUNGLE CATS

A new study published in **Scientific Reports** provides the first countrywide population estimate and habitat suitability analysis for jungle cats (*Felis chaus*) in India. Using over 6,000 records compiled from tiger survey bycatches, radio-collar data, and secondary sources, the study estimates India's jungle cat population at **~3 lakh individuals** (range: 1.57–4.59 lakh) and highlights their dependence on **agro-pastoral landscapes outside protected areas**.

**Key Details & Facts:**

| Particulars | Details |
|---|---|
| **Species** | Jungle cat (*Felis chaus*) |
| **IUCN Status** | Least Concern (but populations shrinking) |
| **WLPA Schedule** | Schedule II (Indian Wildlife Protection Act, 1972) – hunting/trading illegal |
| **Distribution** | Widespread across Asia; large populations in India & Nepal |
| **Habitat Preference** | Avoids dense forests & heavily-modified landscapes; prefers agro-pastoral, grasslands, wetlands, semi-arid open ecosystems |
| **Estimated Population (India)** | ~3 lakh (1.57–4.59 lakh) |
| **Top States** | Madhya Pradesh, Rajasthan, Odisha |
| **Data Source** | 26,000+ camera-trap locations (tiger survey bycatch), radio-collar data, previous studies |

**Key Findings:**

| Finding | Significance |
|---|---|
| Human pressure is the foremost influencing factor | Avoid densely populated areas; tolerate moderate disturbance |
| Preference for warm, semi-arid, seasonally dry regions | Predicted hotspots in eastern India (not drier west) |
| Agricultural landscapes are critical habitat | Provide rodent control services ("protect" crops) |
| Threats outside protected areas | Fragmented habitats, speeding vehicles, poaching, stray dogs (disease, kleptoparasitism), potential hybridisation with domestic cats |
| Large spatial coverage | First robust baseline for conservation planning |

**Relevant Keywords for Prelims:**

- **Species:** *Felis chaus*, small cats, jungle cat
- **Legal Status:** Wildlife (Protection) Act, 1972 – Schedule II; IUCN Red List – Least Concern
- **Institutions:** NCBS (National Centre for Biological Sciences), SACON (Salim Ali Centre for Ornithology and Natural History), University of Wyoming, University of Illinois
- **Concepts:** Bycatch (in tiger surveys), agro-pastoral landscapes, open ecosystems, kleptoparasitism, habitat fragmentation, wildlife corridors
- **Threats:** Linear infrastructure, stray dogs, hybridisation

**Core Theme:**

1. **Understudied Species:** Despite being India's most widespread small cat, jungle cats have received little conservation attention compared to tigers and leopards. The "Least Concern" IUCN status creates a misconception that they are doing fine.
2. **Beyond Protected Areas:** Jungle cats thrive in **agro-pastoral and open habitats** outside protected areas. This finding challenges the conservation paradigm focused solely on sanctuaries and national parks.
3. **Ecosystem Services:** By controlling rodent populations in agricultural landscapes, jungle cats provide free pest control services, benefiting farmers – a classic example of **human-wildlife coexistence**.
4. **Emerging Threats:** These landscapes face rapid conversion to built-up areas, linear infrastructure (highways), stray dog populations (disease transmission & food competition), and poaching – requiring proactive land-use policies.

## GLUCAGON-LIKE PEPTIDE-1 (GLP-1)

The Indian government has intensified surveillance and inspected 49 businesses following the flooding of the market with generic GLP-1 drugs and a significant drop in their prices.


**About GLP-1 Drugs:**

**What It Is?**

- **Glucagon-like peptide-1 (GLP-1)** receptor agonists are a class of medications that mimic a natural hormone produced in the intestines.
- In India, these medicines are strictly regulated and can only be prescribed by endocrinologists, internal medicine specialists, and cardiologists.

**Developed By:**

- These drugs were originally developed by global pharmaceutical companies (such as Novo Nordisk and Eli Lilly) to manage chronic metabolic conditions.
- Recently, **generic versions** produced by various manufacturers have flooded the market, leading to increased accessibility and crashing prices.

**Aim:**

- The primary objective of GLP-1 drugs is to treat **Type 2 diabetes** by stimulating insulin production.
- They are also specifically approved for the medical management of **obesity**.

**Key Characteristics:**

- **Hormone Mimicry:** They function by mimicking the GLP-1 hormone, which targets areas of the brain that regulate appetite and food intake.
- **Blood Sugar Regulation:** They stimulate the release of insulin from the pancreas in response to rising blood glucose levels.
- **Digestion Satiety:** These drugs slow down gastric emptying, making the patient feel full for a longer duration.
- **Diverse Formulations:** Available as both injectable and oral medications depending on the specific generic or brand version.

**Misuse:**

- **Unauthorised Sale:** Growing on-demand availability through retail pharmacies, online platforms, and wellness clinics without proper medical oversight.
- **Improper Prescriptions:** Instances of drugs being sold without valid prescriptions from the authorized specialist categories.
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## NORTHERN MOLUCCA SEA

A magnitude 7.6 earthquake struck Indonesia's Northern Molucca Sea, resulting in at least one death and damage to buildings across West Java and North Sulawesi.

**Seismic Activity:** Located in a complex tectonic zone, the area often experiences earthquakes, crustal warping, and is part of the Pacific Ring of Fire.

**Geography:** Situated between Sulawesi and Halmahera, it connects the Pacific Ocean to the Ceram and Banda Seas. The northern region has shallower depths (under 200m in some parts) compared to the deep southern basins.

**Oceanography:** The region is characterized by the Indonesian Throughflow, bringing warm Pacific water, and it features significant biodiversity with coral reefs and seagrass.

**Recent Events:** A 7.4 magnitude earthquake occurred on April 2, 2026, in the Northern Molucca Sea off the coast of Ternate, causing at least one fatality and triggering a temporary tsunami alert.

**History:** Part of the broader Maluku region known as the "Spice Islands," which were a key focus of 16th-century European exploration.


**About Indonesia:**

**What It Is?**

- Indonesia is the world's largest archipelagic state, located in Southeast Asia between the Indian and Pacific Oceans. It is a sovereign nation composed of thousands of islands and is recognized as a tectonically complex region due to its position on the **Pacific Ring of Fire**.

**Capital:** Jakarta (located on the island of Java).

**Bordering Nations:**

Indonesia shares land borders with three countries:

- **Malaysia:** On the island of Borneo (Sabah and Sarawak).
- **Papua New Guinea:** On the island of New Guinea.
- **Timor-Leste:** On the island of Timor.

**Key Geological Features:**

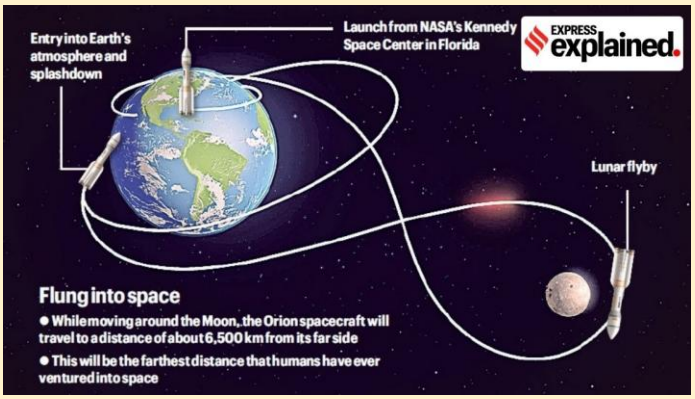
- **Pacific Ring of Fire:** Indonesia sits on this seismically active belt, which is characterized by a high concentration of volcanoes and frequent earthquake activity.
- **Volcanic Arc:** The nation hosts one of the highest densities of active volcanoes in the world, stretching from Sumatra through Java to the Lesser Sunda Islands.
- **Molucca Sea:** A highly active tectonic zone in the northern region where the recent magnitude 7.6 earthquake originated at a depth of 35 km.
- **Mountainous Interior:** Most large islands, such as **Sulawesi** and **Sumatra**, feature dense tropical rainforests and rugged mountain ranges formed by tectonic plate movements.
- **Continental Shelves:** The country sits between the Sunda Shelf and the Sahul Shelf, creating diverse deep-sea trenches and shallow coastal waters.

**Significance:**

- Due to its unique position at the meeting point of several tectonic plates, Indonesia is a critical site for studying earthquake dynamics and tsunami modeling.
- Its islands harbor some of the world's highest levels of biodiversity and vast tropical forest reserves.

## ARTEMIS II MISSION

NASA is set to launch the **Artemis II** mission on Wednesday, April 1, 2026, marking the first time humans will venture to the Moon's neighbourhood since the Apollo 17 mission in 1972.




**About Artemis II Mission:**

**What It Is?**

- Artemis II is the first crewed mission under NASA's Artemis program. It is a test-ride mission designed to fly a crew of four astronauts around the Moon and back to Earth without landing on the lunar surface.

**Organisation Involved:** National Aeronautics and Space Administration (**NASA**).

**Timeline & Current Status**

- **Debut of Systems:** The SLS rocket and Orion spacecraft first debuted during the uncrewed **Artemis I** mission in 2022.
- **Artemis II Launch:** Scheduled for **Wednesday, April 1, 2026**.

**Aim:** The primary objective is to **test and validate** the Space Launch System (SLS) rocket and the Orion spacecraft's life-support systems with a crew on board. It serves as a foundational step for deeper space exploration and future lunar landings.

**How It Works?**

1. **Launch:** The mission uses the **SLS rocket**, the most powerful launch vehicle currently available to NASA.

2. **Earth Orbits:** The Orion spacecraft will complete **two rounds of the Earth to** gain necessary velocity and test systems before departing for the Moon.

3. **Lunar Transit:** It will take **three to four days** to reach the Moon's neighborhood, following a quicker, high-power trajectory similar to the Apollo missions.

4. **Lunar Flyby:** Orion will circle the Moon, reaching a distance of approximately **6,500 km from the far side** of the lunar surface.

5. **Return:** After the flyby, the spacecraft will embark on a return journey, concluding the **10-day mission** with a splashdown on Earth.

**Key Features:**

- **Crewed Debut:** This is the first time the SLS rocket and Orion spacecraft are being used to carry human astronauts.
- **Powerful Propulsion:** Unlike fuel-efficient uncrewed missions (like Chandrayaan-3) that take weeks, Artemis II uses a powerful SLS rocket to reach the Moon in just a few days.
- **Deep Space Trajectory:** The spacecraft will travel farther into space than any previous human mission, exceeding the 110 km altitude reached by Apollo missions on the far side of the Moon.

**Significance:**

- It represents the first human return to the lunar vicinity in over five decades.
- By reaching 6,500 km from the Moon's far side, the crew will venture **farther into space** than humans have ever gone before.

## WTO MINISTERIAL CONFERENCE

The World Trade Organization's 14th Ministerial Conference (MC14) concluded in Yaoundé, Cameroon, without a final agreement on major issues like the e-commerce moratorium.


**About WTO MC14 Conference:**
**What it is?**

- The Ministerial Conference is the **highest decision-making body** of the WTO, typically held every two years to negotiate global trade rules.

**Host:** Held at the Palais des Congrès in **Yaoundé, Cameroon**; this was only the second time a Ministerial Conference took place in Africa.
**Aim:** To modernize WTO operations, address **fisheries subsidies**, advance **WTO reform**, and decide on the future of digital trade customs duties (e-commerce moratorium).
**Key Outcomes of the MC14 Conference:**

- **Fisheries Subsidies:**
    - Ministers reached an agreement to persist with negotiations regarding fisheries subsidies.
    - The objective is to provide final recommendations by the **15th Ministerial Conference**.
    - These recommendations aim to achieve comprehensive disciplines on harmful subsidies as outlined in the **Agreement on Fisheries Subsidies**.
- **Small Economies and Development:**
    - Specific decisions were adopted to improve the integration of small economies into the multilateral trading system.
    - The focus is on ensuring these smaller nations can participate more effectively in global trade.
- **Sanitary and Phytosanitary and Technical Barriers to Trade Agreements:**

Sanitary and Phytosanitary (SPS) measures are WTO-recognized regulations designed to protect human, animal, or plant life from risks arising from pests, diseases, toxins, or contaminants in food and agriculture.
These measures ensure food safety and prevent cross-border spread of diseases, while ideally adhering to scientific evidence, transparency, and non-discrimination in international trade.
Under the WTO SPS Agreement, members are encouraged to base their measures on international standards, guidelines, or recommendations:

- Codex Alimentarius Commission (Codex): Food safety.
- World Organisation for Animal Health (WOAH, formerly OIE): Animal health.
- International Plant Protection Convention (IPPC): Plant health.

**Scientific Justification:** Measures must be based on risk assessment.
**Avoid Protectionism:** Measures should not be used as disguised restrictions to trade.
**Equivalence:** Countries should accept other countries' SPS measures as equivalent if they provide the same level of health protection

- The conference enhanced the implementation of **special and differential treatment** provisions.
- These measures are designed to help developing nations navigate sanitary, phytosanitary, and technical trade barriers.
- The goal is to make these provisions more precise, effective, and operational for member states.

- **Trade and Climate Agenda:**
  - Member nations reaffirmed their high-level commitment to **fossil fuel subsidy reform**.
  - A communiqué was adopted that outlines a menu of voluntary climate actions to guide future work at the intersection of trade and the environment.
  - Progress was noted through the **Integrated Forum on Climate Change and Trade**, which is scheduled to launch a three-year work programme in June 2026.
- **Least Developed Countries Package:**
  - Significant progress was achieved on a dedicated package designed to support **Least Developed Countries**.
  - This package is considered a core component of the emerging outcomes that will be finalized in Geneva.
- **The Yaoundé Package Draft Declaration:**
  - Ministers developed a collection of draft texts known as the **Yaoundé Package**.
  - This package includes a draft **Ministerial Declaration on World Trade Organization Reform** and a work plan.
  - It also contains draft decisions on **Electronic Commerce** and the **Agreement on Trade-Related Aspects of Intellectual Property Rights**.
  - Because members ran out of time in Cameroon, these texts will serve as the basis for finalizing agreements at the next **General Council** meeting in Geneva.

**Success of Outcomes:**

- **Modernized Work Methods:** Director-General Okonjo-Iweala noted a new WTO way of working that is more nimble and responsive.
- **Climate Integration:** Successfully moved the trade-climate interface forward through the Integrated Forum on Climate Change and Trade (IFCCT).
- **Institutional Continuity:** Preserved important draft texts (the Yaoundé Package) to prevent total collapse and provide a basis for future talks.
- **Inclusivity for Small States:** Formalized support mechanisms for smaller and developing economies to better navigate multilateral systems.

**Failures of the Conference:**

- **E-commerce Deadlock:** Failed to extend the moratorium on customs duties for digital transmissions due to a clash between the US (seeking a permanent extension) and Brazil.
- **TRIPS Moratorium Lapse:** No agreement was reached on the non-violation complaint moratorium under TRIPS, which is expected to expire at the end of March 2026.
- **Agriculture Impasse:** Negotiations remained mired in long-standing disputes over domestic support and market access between the US and Brazil.
- **Investment Facilitation:** India and South Africa successfully blocked the inclusion of the Investment Facilitation for Development (IFD) agreement, citing it as outside the WTO's mandate.
- **Dispute Settlement Reform:** Despite two days of thematic discussions, there was no convergence on restoring the WTO's appellate body or reform system.

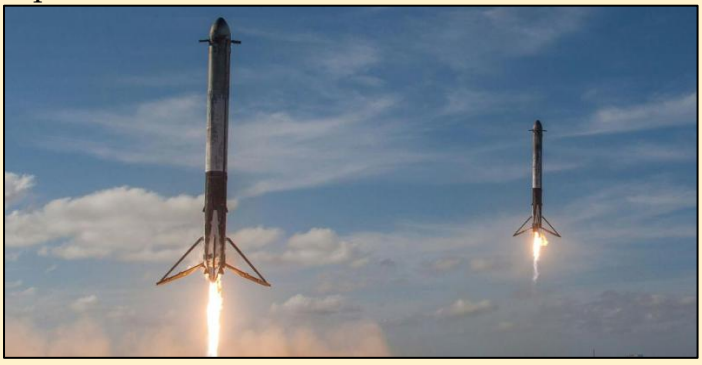
**Way Ahead:**

- **Geneva Resumption:** Members must use the Yaoundé Package draft texts to finalize agreements at the next **General Council meeting**.
- **Addressing the Deadline:** Urgently resolve the e-commerce and TRIPS moratoriums before they officially expire and disrupt digital trade.
- **Inclusive Reform:** Shift toward the member-driven reform approach demanded by India and South Africa to ensure developing nations aren't sidelined.
- **Fisheries Recommendations:** Accelerate technical work in Geneva to ensure comprehensive recommendations are ready for **MC15**.
- **Bridging Major Gaps:** Direct high-level diplomatic engagement is needed between the US, Brazil, and India to find middle ground on agriculture and digital trade.

The MC14 conference demonstrated a renewed Yaoundé way of working but ultimately fell short of delivering legally binding results on critical digital and agricultural issues. While progress on climate and LDC support is encouraging, the looming expiration of trade moratoriums poses a significant risk to global stability. The WTO's future relevance now hinges on whether Geneva can bridge the deep geopolitical fractures exposed in Cameroon.

## SPACE GOVERNANCE

Space governance is facing a critical failure as Earth's orbits become increasingly crowded and vulnerable to debris, with current regulations failing to keep pace with rapid commercial expansion.



**About Space Governance:**

**What It Is?**

- Space governance refers to the international and national frameworks of treaties, laws, and ethical norms designed to manage human activities in outer space. It encompasses the regulation of satellite launches, the mitigation of orbital debris, the management of radio frequencies, and the establishment of liability for space-related accidents.

**Key Laws Governing Space:**

- **Outer Space Treaty (1967):** The foundational pillar of international space law. **Article VI** makes states internationally responsible for national activities in space, including those by private entities, while **Article VII** establishes liability for damage caused by space objects.
- **Liability Convention (1972):** Elaborates on Article VII of the Outer Space Treaty, providing specific procedures for claiming compensation for damage caused by space objects.
- **National Licensing Regimes:** The primary modern mechanism used by countries to enforce orbital responsibility (such as requiring disposal plans) before a mission is approved for launch.

**Importance of Governing Space:**

1. **Preventing Collisions:** Effective governance ensures satellites are moved or de-orbited safely. Even debris smaller than a coin can destroy active satellites due to high orbital velocities.
2. **Mitigating Cumulative Harm:** Governance is needed to address long-term congestion rather than just individual accidents. Current laws fail to prevent irreversible harm from thousands of fragments generated by each collision.
3. **Ensuring Intergenerational Equity:** Stewardship ensures future generations can still access space. Principles from environmental law suggest our current use should not foreclose future access to orbital resources.

4. **Protecting Global Services:** Reliable governance secures the infrastructure for weather forecasting, GPS, and communication. These essential services are threatened by an ethically under-governed and fragile orbital environment.
5. **Establishing a Duty-of-Care:** Standardized rules create an ethical threshold for acceptable congestion. Without it, responsible operators absorb higher costs while others ignore risks for commercial gain.

**Challenges Associated with Space Governance:**

1. **Verification Gap:** There is no regular way to confirm if operators actually de-orbit satellites once missions end. Regulators often rely on what companies *say* they will do rather than what they can confirm in orbit.
2. **Debris Tracking Limitations:** Much of the debris capable of causing significant damage is impossible to track consistently. Authorities often can only identify the source of a fragment *after* damage has already occurred.
3. **Information Asymmetry:** Access to accurate data about object locations is uneven across countries. Information is often withheld for commercial reasons or kept secret for national security.
4. **Outdated Legal Assumptions:** Existing treaties were written when space was state-controlled and innovation was slow. They do not address the modern era of frequent private launches and massive satellite constellations.
5. **Permissive Regulatory Forum Shopping:** Regulators in different jurisdictions ask for varying levels of detail. This allows operators to register in permissive environments to bypass strict safety standards.

**Way Ahead:**

- **Standardize Licensing:** Implement uniform global licensing conditions to prevent operators from choosing the most permissive regulatory environments.
- **Mandatory Data Sharing:** Move beyond voluntary guidelines to legally mandated data sharing to improve global space situational awareness.
- **Enforceable Mitigation Thresholds:** Require launch operators to meet measurable and verifiable debris-mitigation and end-of-life disposal thresholds.
- **Integrate Environmental Principles:** Embed principles like precaution and proportionality into space policy to ensure uncertainty does not excuse inaction.
- **India's Leadership Role:** As India develops its national space legislation, it has a unique opportunity to embed orbital responsibility as a mandatory legal requirement for its expanding commercial sector.

Earth's orbital environment has shifted from a vast frontier to a fragile resource threatened by a significant gap in ethical and legal governance. Relying on voluntary compliance is no longer sustainable as debris risks multiply and commercial actors increase. For space to remain a viable resource, the international community must transition to enforceable, standardized, and verifiable stewardship.

## GREAT INDIAN BUSTARD (GHORAD)

After a decade-long hiatus, a **Great Indian Bustard (Ghorad)** chick has been born in Gujarat's Kutch district through a pioneering inter-state conservation effort.

**About Ghorad (Great Indian Bustard):**
**What it is?**

- The Great Indian Bustard (*Ardeotis nigriceps*), locally known as **Ghorad** in Gujarat and Maharashtra, is one of the heaviest flying birds in the world. It is considered the flagship species of India's grassland ecosystem and is often called the Guardian of the Grasslands.

**IUCN Status:** Critically Endangered.
**Population:** Estimated to be fewer than 150 individuals globally, with the majority residing in Rajasthan's Desert National Park.
**Legal Protection:** Listed in **Schedule I** of the Indian Wildlife (Protection) Act, 1972, providing it the highest level of legal protection.
**Habitat:**

- **Primary Landscape:** Dry, open grasslands and scrublands with scattered bushes.
- **Geographic Range:** Historically found across the Indian subcontinent, it is now restricted to isolated pockets in **Rajasthan (Kutch/Thar), Gujarat, Maharashtra, Karnataka, and Andhra Pradesh**.
- **Nesting:** They are ground-nesting birds, making their eggs highly vulnerable to predators like stray dogs and foxes.

**Key Characteristics:**

- **Physical Stature:** Large, ostrich-like appearance with a black cap contrasting with a pale neck and brownish body.
- **Heavyweight Flyer:** Adult males can weigh up to **15 kg** and stand about one meter tall.
- **Breeding Behavior:** During the breeding season, males produce a deep resonant boom that can be heard from nearly a kilometer away to attract females.
- **Slow Breeders:** Females typically lay only **one egg per year**, which contributes to their extremely slow population recovery.
- **Omnivorous Diet:** They feed on a variety of insects (like grasshoppers and beetles), small rodents, reptiles, and seeds, making them natural pest controllers for nearby farms.

**About Operation Egg Transfer:**
**What it is?**

- Operation Egg Transfer is a high-tech foster-parenting conservation strategy. It involves replacing an unfertilized egg in a wild nest with a laboratory-fertilized egg to ensure a successful birth in regions where the natural male population has vanished.

**Organization Involved:** Forest Departments of **Gujarat** and **Rajasthan**.
**Technical Partner:** Wildlife Institute of India (WII).
**Aim:** The primary aim was to revive the GIB population in **Kutch, Gujarat**, where the lack of male bustards meant that local females were laying unfertilized eggs.
**Key Features:**

- **Cold Chain/Incubation Logistics:** The fertilized egg was transported over **19 hours** from Rajasthan to Kutch in a specialized **portable incubator** to maintain precise temperature and humidity.
- **Decoy Strategy:** The forest team carefully swapped an unfertilized egg in a wild nest in Abdasa with the fertilized one while the female was away.

## SRY GENE SCREENING:


The International Olympic Committee (IOC) announced a seismic policy change mandating **SRY gene screening** for all female athletes in international elite sports.

- This decision effectively bans transgender women and many DSD (Differences in Sex Development) athletes from female categories.

**About** SRY Gene Screening:
**What it is?**

- SRY stands for **'Sex-determining Region Y'**. It is a specific segment of DNA usually found on the Y chromosome. This gene acts as a biological master switch that triggers the development of testes and the production of male levels of testosterone, leading to male physical development.

**Developed By:** The SRY gene was first discovered in **1990** by **Professor Andrew Sinclair**.
**Aim:**

- The primary objective is to protect the female category in elite sports.
- The IOC aims to ensure that athletes competing in the female category do not have the physiological advantages associated with male puberty and male chromosomal development, such as increased bone density and explosive muscle power.

**How it Works?**

1. **Sample Collection:** The athlete provides a simple **saliva sample** or a **cheek swab** at a certified diagnostic lab.
2. DNA Analysis**:** The lab analyzes the sample to detect the presence or absence of the SRY gene.
3. **Turnaround Time:** The process typically takes about **one week** for results to be issued.
4. **Verification:** The results are submitted to the relevant international sports body . If negative, the athlete is permanently cleared for the female category.

**Key Features:**

- **Once-in-a-Lifetime:** Since the SRY gene is fixed at birth, the test is generally required only once in an athlete's career.
- **Predictive Marker:** The IOC views the gene as a highly accurate indicator of whether an athlete has experienced or will experience male sex development.
- **Selective Application:** It applies only to **elite-level international athletes**(Olympics, World Championships) and not to grassroots or leisure sports.
- **Exceptions for Rare DSDs:** Athletes with specific conditions like **Complete Androgen Insensitivity Syndrome (CAIS)**—where the body cannot process testosterone—may still be eligible for the female category even if they are SRY-positive.
- **Voluntary but Mandatory for Entry:** Athletes can refuse the test, but refusal results in immediate disqualification from IOC-sanctioned events.

**Significance:**

- The IOC cites scientific data showing a **10% to 100% performance advantage for** male-developed athletes depending on the sport.
- This marks a major shift from self-identification models to biological/genetic models for gender classification in sports.
- The IOC advises early screening so athletes can make informed decisions about their training and investment in the female category.

## SOLID WASTE MANAGEMENT (SWM) RULES, 2026

The Ministry of Environment, Forest and Climate Change (MoEFCC) has notified the Solid Waste Management (SWM) Rules, 2026, which will replace the existing 2016 framework starting April 1, 2026.

**About Solid Waste Management (SWM) Rules, 2026:**
**What it is?**

- The SWM Rules, 2026, are a comprehensive regulatory framework designed to modernize India's waste management system. They shift the focus from a collect-and-dump model to a **circular economy** approach that prioritizes resource recovery, recycling, and accountability for all waste generators.

**Notifying Authority:** Ministry of Environment, Forest and Climate Change (MoEFCC).
**Legal Basis:** Issued under the **Environment (Protection) Act, 1986**.
**Predecessor:** These rules supersede the **Solid Waste Management Rules, 2016**.
**Aim:** The primary objective is to achieve **Zero Waste to Landfill** by strengthening source segregation, enhancing the accountability of bulk generators, and leveraging digital governance to track waste lifecycles.
**Key Features of the New Rules:**

- **Mandatory Four-Stream Segregation:** Waste must be separated at the source into four categories:
    1. **Wet Waste:** (Organic/Food) to be composted or bio-methanated.
    2. **Dry Waste:** (Plastic, paper, metal) to be sent to Material Recovery Facilities (MRFs).
    3. **Sanitary Waste:** (Diapers, napkins) to be wrapped securely for separate handling.
    4. **Special Care Waste:** (Domestic hazardous items like paint, bulbs, medicines).
- **Extended Bulk Waste Generator Responsibility (EBWGR):** Entities generating more than100 kg/day, consuming more than 40,000 liters of water/day, or having more than 20,000 sq.m. area must process organic waste on-site or obtain EBWGR certificates.
- **Digital Governance:** A **Centralised Online Portal** will track waste from generation to final disposal, including registrations, reporting, and audits.
- **Polluter Pays Principle:** Introduction of **Environmental Compensation** for non-compliance, such as operating without registration or submitting false data.
- **Refuse-Derived Fuel (RDF) Promotion:** Mandates industries (like cement plants) to increase RDF substitution from **5% to 15%** over six years.

**Refuse Derived Fuel (RDF) is a high-calorific fuel produced by processing non-recyclable municipal solid waste—including plastics, paper, textiles, and wood—through shredding, drying, and sorting to remove incombustibles**

- **Landfill & Legacy Waste:** Strict restrictions limit landfills to non-recyclable/inert waste only. It mandates time-bound **biomining and bioremediation** of existing legacy dumpsites.
- **Special Provisions for Hilly/Island Regions:** Local bodies can levy **user fees on tourists** and regulate inflow based on waste processing capacity.
- **Land Allocation:** Graded criteria for faster land allocation for waste processing units and mandatory buffer zones for large facilities.

**Significance:**

- Reduces methane emissions from landfills and prevents soil/water contamination through scientific remediation of legacy sites.
- Promotes a circular economy by turning waste into wealth (compost, energy, and recycled materials).

## 'MLATRACK.COM'

Kerala has launched **'MLATrack.com'**, India's first platform to track the legislative interventions of MLAs.

**About Kerala's 'MLATrack.com':**
**What it is?**

- **MLATrack.com** is a **public digital database platform** that aggregates and presents data on the performance and legislative activities of Members of the Kerala Legislative Assembly (2021–2026).

**Aim:**

- To increase transparency and accountability in legislative functioning
- To enable citizens, researchers, and media to track MLA performance objectively

**Key Features:**

- **Comprehensive MLA Profiles**: Includes biodata, attendance records, constituency maps, and participation details,

**A standard biodata usually covers three main areas:**

- **Personal Particulars**: Name, date of birth, gender, marital status, religion, nationality, and permanent address.
- **Educational Background**: A chronological list of schools attended, degrees obtained, and academic achievements.
- **Work Experience**: A summary of previous job roles, companies, and key responsibilities.
- **Legislative Activity Tracking**: Tracks questions (68,000+), debates, motions, and interventions with date-wise details
- **Data Visualization & Accessibility**: Provides visual dashboards and hyperlinks to official Assembly responses for easy analysis

**Significance:**

- Enables citizens to evaluate elected representatives based on performance data
- Encourages evidence-based political analysis without subjective ranking or bias.

## CENTRAL ARMED POLICE FORCES (GENERAL ADMINISTRATION) BILL, 2026

The Central Government introduced the Central Armed Police Forces(General Administration) Bill, 2026 in the Rajya Sabha.

**About The Central Armed Police Forces (General Administration) Bill, 2026:**

**What it is?**

- The Bill is a regulatory framework designed to govern the recruitment, promotion, and service conditions of Group 'A' General Duty Officers and other personnel within specified CAPFs.
- It seeks to provide legislative clarity to the historical practice of IPS officers leading these forces, ensuring that the unifying link between the Union and the States remains structurally intact.

**Key Features of the Bill:**

- **Scope of Application:** Applies to five primary CAPFs: **CRPF, BSF, CISF, ITBP, and SSB**. The government can add more forces via notification.
- **Rule-Making Power:** Empowers the Central Government to frame rules for recruitment, deputation, and service conditions, overriding any existing laws or court orders.
- **Mandatory IPS Deputation:** Explicitly earmarks high-level posts for IPS officers:
  - **50%** of Inspector General (IG) posts.
  - **Minimum 67%** of Additional Director General (ADG) posts.
  - **100%** of Special Director General (SDG) and Director General (DG) posts.

- **Protection of Benefits:** Saves and continues all existing financial benefits granted to Group 'A' officers prior to the Act.

- **Personnel Coverage:** Includes Group 'A' executive officers (Assistant Commandant and above), IPS officers on deputation, and Army officers on deputation or re-employment.

**Need for Such Changes:**

- **Inter-Agency Coordination:** IPS officers provide a bridge between the Union's armed forces and State police departments.

**Example:** Since senior operational posts in States are held by IPS officers (ADGs/SDGs), having them in CAPF leadership ensures seamless coordination during internal security crises.

- **Maintaining Force Character:** The Bill institutionalizes the unique character of CAPFs as forces that assist civil power.

**Example:** The Supreme Court noted in *Sanjay Prakash (2025)* that IPS presence is vital to maintain the functional ethos and administrative requirements of these forces.

- **National Integration:** Reflects Sardar Patel's vision of the IPS as a unifying link across the federal structure.

**Example:** IPS officers bring field experience from various States, giving them a broader strategic vision required to lead national border and industrial security forces.

- **Legislative Supremacy:** Clarifies that service policy falls under the domain of the Executive and Legislature, not the Judiciary.

**Example:** The Bill rectifies the judicial overreach where courts previously directed a reduction in IPS deputation quotas, which is essentially a policy matter.

- **Camaraderie and Training:** Mandatory stints at the Centre for IPS officers foster better relationships with cadre officers.

**Example:** As per the January 2026 MHA guidelines, mandatory two-year central stints for IPS IGs will help cement operational bonds with CAPF-cadre subordinates.

**Challenges Associated:**

- **Stagnation of Cadre Officers:** High-level IPS quotas limit the career progression of GAGDOs (Group A General Duty Officers).

**Example:** Direct-entry CAPF officers often wait decades for promotions, as the top tiers (ADG, SDG, DG) are now legally reserved for IPS officers.

- **Judicial Conflict:** The Bill appears to directly undo recent Supreme Court directions.

**Example:** It overrides the *Sanjay Prakash (2025)* ruling which instructed the government to progressively reduce IPS deputation at the IG level within two years.

- **Parachuting Perception:** There is perceived resentment among cadre officers who feel IPS officers lack specific force-specific expertise.

**Example:** Critics argue that an officer who has spent a career in district policing may not be immediately suited for specialized roles like border guarding (BSF) or industrial security (CISF).

- **Federal Friction:** While intended as a link, the dominance of IPS can sometimes lead to friction between Central command and State requirements.

**Example:** Dependence on a single service for top leadership can lead to service-specific biases in resource allocation and operational strategy.

- **Legal Challenges:** The notwithstanding clause may be challenged on the grounds of constitutional validity.

**Example:** Opponents may argue that overriding court orders regarding Organised Group A Service (OGAS) status violates the principle of judicial review.

**Way Ahead:**

- **Timely Cadre Reviews:** To mitigate resentment, the government must conduct regular cadre reviews to increase the total number of posts, ensuring growth for both IPS and cadre officers.
- **Balanced Deputation:** While maintaining IPS at the top, the government could explore increasing the share of cadre officers in specialized technical or training wings.
- **Specialized Induction:** IPS officers being deputed to CAPFs should undergo mandatory force-induction training to understand the specific operational nuances of the BSF, CRPF, etc.
- **Strengthening OGAS Rights:** Ensuring that the financial and administrative benefits of being an Organised Group A Service are fully realized by CAPF cadre officers.

**Conclusion:**

The CAPF (General Administration) Bill, 2026 is a decisive step toward stabilizing the leadership structure of India's internal security forces by codifying the role of the IPS. While it addresses the need for a unified command and federal coordination, the government must simultaneously address the promotion aspirations of the dedicated CAPF cadre.

## HUMPBACK WHALE

A young humpback whale, nicknamed Timmy, has captured international attention after becoming stranded for a third time in the shallow Baltic waters off Germany's coast.

**About Humpback Whale:**

**What it is?**

- The humpback whale **(*Megaptera novaeangliae*)** is a species of baleen whale and one of the largest animals on Earth. It belongs to the rorqual family, a group that includes the blue whale and the fin whale. They are renowned for their complex songs and their tendency to perform spectacular aerial leaps (breaching).

**Habitat**

- **Global Distribution:** Found in all major oceans, from the edge of the ice packs to tropical islands.
- **Migration:** They have one of the longest migrations of any mammal, traveling up to **16,000 miles** annually between high-latitude feeding grounds (cold waters) and tropical breeding grounds (warm waters).
- **Non-Native Areas:** They are not native to the **Baltic Sea**, as the low salinity and lack of specific prey make it difficult for them to survive long-term.

**Key Characteristics**

- **Unique Appearance:** They have a distinctive body shape with long pectoral fins (up to one-third of their body length) and a knobby head covered in tubercles (hair follicles).
- **Size and Weight:** Adults typically range from **13–17 meters** (43–56 ft) in length and can weigh up to **40 metric tons**.
- **Feeding Method:** They are filter feeders that use baleen plates to trap small crustaceans (krill) and fish. They often use a unique bubble-net feeding technique to corral prey.
- **Tail Flukes:** The underside of a humpback's tail (fluke) has a pattern of white and black pigment that is as unique as a human fingerprint, allowing researchers to identify individual whales.

- **Acoustic Behavior:** Male humpbacks produce long, complex songs that can last up to 20 minutes and be heard for miles underwater; these songs evolve over time.

**Significance:**

- They play a vital role in ocean health by circulating nutrients through the water column and providing a massive carbon sink when they die and sink to the ocean floor.
- Their health and migratory patterns serve as critical indicators of climate change and ocean noise pollution levels.

## PERIODIC LABOUR FORCE SURVEY (PLFS) REPORT

The Ministry of Statistics and Programme Implementation (MoSPI) released the Periodic Labour Force Survey (PLFS) Annual Report for 2025.

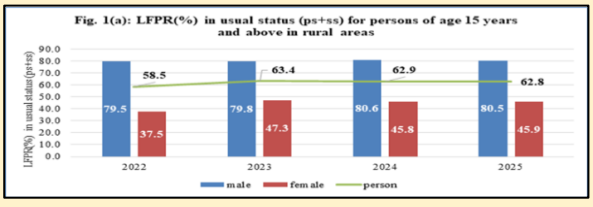
**About** Periodic Labour Force Survey (PLFS) Annual Report, 2025**:**

**What it is?**

- The PLFS was launched by the National Statistical Office (NSO) in 2017 to estimate key employment and unemployment indicators. It provides data in two formats: **Usual Status (ps+ss)**, which maps activity over the preceding 365 days, and **Current Weekly Status (CWS)**, which maps the preceding 7 days.

**Key Summary of the** PLFS Annual Report **2025:**

- **Stable Participation:** The Labour Force Participation Rate (LFPR) for ages 15+ remained stable at **59.3%**, with male participation at 79.1% and female at 40.0%.




- **Steady Employment:** The Worker Population Ratio (WPR) stood at **57.4%**. Notably, rural female WPR held steady at 44.9%, sustaining gains made since 2022.
- Declining Unemployment**:** The overall Unemployment Rate (UR) was **3.1%**. Youth unemployment (ages 15-29) saw a drop to **9.9%** from 10.3% in the previous year.
- **Shift to Regular Wage:** There is a positive shift in employment quality, with regular wage/salaried employees increasing to **23.6%**, while self-employment declined to 56.2%.
- **Sectoral Recomposition:** Agriculture's share of employment decreased from 44.8% to **43.0%**, while manufacturing saw an improvement to **12.1%**.


- **Education & Unemployment:** The unemployment rate among educated persons (secondary and above) reduced to **6.5%**, reflecting better absorption of the skilled workforce.
- **Gender Wage Growth:** Nominal wages for women grew across all sectors, with the highest growth of **8.8%** observed in the self-employed category.
- **Education Attainment:** At the all-India level, the average number of years in formal education for those aged 15+ reached **10.0 years**.

**Challenges Associated:**

- **Gendered Reasons for Inactivity:** A massive disparity exists in why individuals stay out of the labor force.

**Example:** While 69.8% of males cite continued studies, 44.4% of females cite child care/home-making, highlighting persistent socio-economic barriers for women.

- **Working Hour Disparity:** There is a significant gap in the duration of economic work between genders.

**Example:** Urban self-employed males work **17.5 hours more per week** than females, suggesting women bear a disproportionate burden of unpaid domestic work.

- **High NEET Rates:** A large portion of the youth remains outside the productive ecosystem.

**Example:** Approximately **25.0**% of persons aged 15-29 are Not in Employment, Education, or Training (NEET), posing a risk of a wasted demographic dividend.

- Low Vocational Training**:** The reach of formal skill development remains minimal.

**Example:** Only **4.2**% of the 15-59 age group reported receiving formal vocational or technical training, indicating a massive skill gap in the workforce.

- **Comparability Issues:** The change in survey methodology makes historical trend analysis difficult.

**Example:** Because the 2025 report uses a revamped sampling design and a calendar-year cycle, results are **not strictly comparable** with reports prior to December 2024.

**Way Ahead:**

- **Bridging the Gender Gap:** Implement policies that reduce the home-making burden on women, such as expanded affordable childcare and flexible work models.
- **Scaling Vocational Training:** Revitalize the Skill India Mission to increase the 4.2% vocational training rate to at least 20% to meet manufacturing demands.
- **Targeting Urban Youth:** Address the higher urban youth unemployment rate (13.6%) by incentivizing start-ups and service-sector hubs in Tier-2 and Tier-3 cities.
- **Formalization of Jobs:** Continue the shift from self-employment to regular salaried jobs by providing social security benefits to a wider array of workers.
- **Utilizing the** NEET Population**:** Create targeted bridge courses and apprenticeships specifically for the 25% of youth currently not in education or employment.

The PLFS 2025 report paints a picture of a resilient Indian labor market that is successfully transitioning toward manufacturing and regular salaried employment. While declining unemployment and rising female wages are positive indicators, the high percentage of youth in the NEET category and the low levels of vocational training remain critical hurdles. Addressing these structural gaps will be essential for India to fully capitalize on its demographic transition by 2028 and beyond.

## EXERCISE DWEEP SHAKTI

The Indian Armed Forces successfully concluded Dweep Shakti, a high-intensity tri-service exercise.

- The drill demonstrated seamless synergy between the Army, Navy, and Air Force in securing India's strategic island territories and maritime frontiers.

**About Exercise Dweep Shakti:**

**What It Is?**

- Dweep Shakti is a large-scale **Tri-Service joint military exercise** designed to test and validate India's integrated combat capabilities in coastal and island environments. It focuses on the rapid deployment of forces to protect remote island territories from maritime threats.

**Host:**

- The exercise was conducted under the aegis of the **Andaman and Nicobar Command (ANC)**—India's only theater command—utilizing the strategic geography of the Andaman and Nicobar archipelago.

**Organizations Involved:** Indian Army, Indian Navy and Indian Air Force.

**Aim:** The primary objective is to refine **integrated tactics and procedures** for rapid response, ensuring the three services can operate as a single cohesive unit during amphibious assaults and maritime dominance operations.

**Key Features:**

- **Amphibious Assaults:** Execution of complex sea-to-land maneuvers where troops were moved from naval ships to shore via landing crafts.
- **Maritime Dominance:** Coordinated patrols and drills to establish control over sea lines of communication and deter adversarial naval presence.
- **Beach Landing Drills:** Heavy equipment, including tanks and armored vehicles, were landed on simulated hostile shores to test logistical speed.
- **Next-Gen Tech Integration:** Extensive use of **swarming drones** and electronic warfare suites for reconnaissance and precision strikes.
- **Multi-Domain Interoperability:** Testing of unified communication protocols to ensure real-time data sharing between aircraft, ships, and ground troops.

**Significance:**

- Sends a strong signal of India's readiness to defend its unsinkable aircraft carriers (the island territories) in the face of rising regional maritime competition.
- Bolsters the defense of India's vast coastline and Exclusive Economic Zone(EEZ) by perfecting rapid-response mechanisms.

## GLOBAL ACTION PLAN FOR THE STEPPE EAGLE:

The Global Action Plan (GAP) for the Steppe Eagle (2026–2035) was officially adopted during CMS COP15, which concluded, in Campo Grande, Brazil.

**About Global Action Plan for the Steppe Eagle:**
**What It Is?**

- The Steppe Eagle Global Action Plan is a science-based international conservation framework designed to provide a coordinated strategy for the survival of the **Endangered** steppe eagle (*Aquila nipalensis*).
- It serves as a roadmap for range states to mitigate anthropogenic threats and stabilize the species' population.

**Aim:** The central vision is to **halt and reverse the decline** of the steppe eagle by delivering innovative, science-based conservation actions and community engagement across its entire migratory range.

**Key Features (6 Strategic Goals)**

The plan is built around **49 specific actions** categorized under six primary goals:

1. **Energy Infrastructure:** Reducing mortality caused by electrocution and collisions with powerlines and wind farms.
2. **Take and Trade:** Significantly reducing both legal and illegal killing, trapping, and trade (including online markets).
3. **Poisoning Prevention:** Understanding and mitigating the impact of unintentional poisoning from pesticides, NSAIDs (like Diclofenac), and heavy metals.

4. **Habitat Restoration:** Attaining and maintaining high-quality habitats and stable prey populations across the breeding and wintering grounds.
5. **Knowledge Gap Closure:** Increasing international research collaboration to better understand movement patterns and spatial hotspots.
6. **Effective Implementation:** Ensuring all range states endorse the plan through outreach, stakeholder engagement, and community involvement.

**About Steppe Eagle:**
**What It Is?**

- The Steppe Eagle is a large, migratory bird of prey belonging to the family **Accipitridae**. It is a quintessential raptor of the open plains and is known for its impressive transcontinental migrations, often traveling thousands of kilometers between its breeding and wintering grounds.

**IUCN Status:** Endangered
**Habitat:**

- **Global:** It breeds in the vast, open **steppes**, semi-deserts, and montane grasslands of the Palearctic region, stretching from **Romania and Russia**through **Kazakhstan to Mongolia and China**.
- **India:** It is frequently spotted in open habitats such as **grasslands, semi-arid regions, agricultural fields**, and even garbage dumps in states like Rajasthan, Gujarat, and Haryana.
    - The Thar Desert has emerged as a critical lifeline for these raptors, with the **Jorbeer Conservation Reserve** and **Desert National Park** now included in the Global Action Plan (2026–2035).

**Characters:**

- **Plumage:** Adults are dark brown with a pale golden nape; juveniles show a broad white band under the wings.
- **Size:** Large, heavy eagle with a wingspan of **7–2.1 m** and a long gape extending beyond the eye.
- **Feeding:** Hunts small mammals but also scavenges at carcasses and landfills.
- **Migration:** A soaring migrant that uses thermal currents; an important species of the Central Asian Flyway **(CAF)**.

## BAB EL-MANDAB STRAIT

The Bab el-Mandab Strait, known as the Gate of Tears, faces renewed threats of closure as Yemen-based Houthi rebels escalate ballistic missile attacks amid the widening Middle East conflict.


**About Bab el-Mandab Strait:**
**What It Is?**

- The Bab el-Mandab is a strategic maritime chokepoint and one of the world's most vital shipping lanes. It serves as the southern gateway to the Red Sea, acting as the primary link between the Indian Ocean and the Mediterranean Sea (via the Suez Canal).

**Location:**

- **Geography:** Situated between the **Horn of Africa** (Djibouti and Eritrea) to the southwest and the **Arabian Peninsula** (Yemen) to the northeast.
- **Connectivity:** It connects the **Red Sea** to the **Gulf of Aden** and the **Arabian Sea**.
- **Key Point:** The strait is split into two channels by **Perim Island**; the western channel is the primary lane for large commercial vessels.

**Origin of the Name:**

- In Arabic, *Bab el-Mandab* translates to **Gate of Tears.** Legend attributes the name to the many people who drowned there during an ancient earthquake that separated Asia and Africa, or to the extreme danger posed by its narrow, treacherous navigation channels.

**Key Features:**

- **Width:** At its narrowest point, the strait is only about **29 kilometers (18 miles)**wide, making it highly vulnerable to land-based missile attacks and naval blockades.
- **Volume:** It accounts for approximately **10% to 12% of global seaborne oil**and natural gas shipments.
- **Capacity:** Over **30 million tonnes of LNG** and millions of barrels of oil pass through it annually.
- **Alternative Route:** If blocked, ships must divert around the **Cape of Good Hope** (South Africa), adding roughly **4,000 to 6,000 nautical miles** and **14 to 20 days** to the journey.

**Significance:**

- It is a critical conduit for Persian Gulf oil and gas heading to Europe and North America via the Suez Canal and the **SUMED pipeline**.
- A massive volume of container traffic carrying consumer goods, electronics, and food between Asia and Europe relies on this passage.

## SUPERIOR KEROSENE OIL

The Ministry of Petroleum and Natural Gas has issued a gazette notification allowing the distribution of Superior Kerosene Oil (SKO) under the Public Distribution System (PDS) across 21 States and UTs, including Delhi and Gujarat.

**About Superior Kerosene Oil (SKO):**
**What it is?**

- Superior Kerosene Oil (SKO) is a highly refined middle distillate fraction of crude oil. It is a specific grade of kerosene that has undergone extra processing to remove impurities (like sulphur and aromatics), ensuring it meets stringent quality standards for domestic and industrial use.

- In India, it is primarily distributed through the **Public Distribution System (PDS)** to provide energy security to low-income households.

**Aim:** The primary aim of providing SKO is to ensure a **reliable and affordable fuel source** for cooking and lighting in rural and semi-urban areas.

**Key Characteristics of SKO:**

- **High Smoke Point:** It is refined to have a high smoke point (minimum 18-22 mm), which ensures that it burns with a steady, smokeless flame.
- **Low Sulphur Content:** SKO contains very low levels of sulphur, reducing the emission of harmful oxides (SOx) during combustion, making it safer for indoor use.
- **Flash Point:** It has a specific flash point (typically above **35°C** to **40°C**) to ensure safety during storage and transport, preventing accidental ignition.
- **Coloration:** In India, PDS-destined SKO is often dyed **blue** to distinguish it from non-subsidized kerosene and to prevent its illegal diversion for adulterating automotive fuels like diesel.

**Applications:**

- **Domestic Cooking:** Used in wick stoves and pressure stoves as a primary or backup cooking fuel.
- **Lighting:** Widely used in hurricane lanterns and simple lamps in areas with unreliable power grids.
- **Industrial Use:** Used as a solvent in paints, a degreaser in mechanical workshops, and a base for some pesticide formulations.

- **Aviation:** When further refined and treated with additives, a similar fraction serves as **Aviation Turbine Fuel (ATF)**.

**How it differs from Regular Kerosene?**
While both are derived from the same petroleum fraction, the Superior tag denotes significant differences:

| Feature | Superior Kerosene Oil (SKO) | Regular/Low-Grade Kerosene |
|---|---|---|
| **Refining Level** | Highly refined with fewer impurities. | Less refined; contains more aromatics. |
| **Burning Quality** | Clean-burning; produces minimal soot/smoke. | Produces more smoke and a distinct odor. |
| **Sulphur Content** | Strictly controlled (very low). | Higher sulphur content, leading to more indoor pollution. |
| **Primary Use** | Household cooking and lighting. | Often used for heating or as an industrial furnace fuel. |
| **Safety** | Higher flash point for domestic handling. | May have more volatile components. |

## QDENGA (TAK-003): INDIA'S FIRST DENGUE VACCINE – NEWS CONTEXT:

India's drug regulator (DCGI) has granted clearance to **Takeda's tetravalent dengue vaccine TAK-003 (brand name Qdenga)** for use in individuals aged **4 to 60 years**.

This marks a significant shift from reactive **vector control measures** (insecticide use, breeding site elimination) to a **preventive approach** against dengue—a disease endemic to India with a long-term rising trend.


**Key Details & Important Facts:**
**Vaccine Name:** Qdenga (TAK-003)
**Developer:** Takeda (Japan-based)
**Type: Tetravalent** live-attenuated vaccine (targets all 4 dengue serotypes: DENV-1 to DENV-4)
**Platform:** Developed on **DENV-2 backbone**

**Regulatory Status in India:** Cleared by **Subject Expert Committee (SEC)** under DCGI
**Age Group:** 4 to 60 years

**Dosage Regimen: Two doses**, 3 months apart
**Key Advantage: No pre-vaccination screening** required (unlike earlier vaccine – Sanofi's Dengvaxia).
**Proven Efficacy:** Strong protection against **severe dengue & hospitalization.**
**Limitation:** Lower efficacy against **DENV-3 and DENV-4** (especially in seronegative individuals)
**Expected Cost in India:** ₹3,000–6,000 per dose; full course ₹6,000–12,000 (private sector initially)
**Indian Pipeline Candidate: DengiAll** (Panacea Biotec + ICMR) – single-dose, based on **NIH's TV003 platform**; Phase III trials ongoing; expected availability ~2027

The core theme is the **cautious introduction of the first dengue vaccine in India** as a **disease-modifying** rather than **transmission-blocking** tool.
While Qdenga significantly reduces severe disease and hospitalization—key public health gains—its lower efficacy against emerging serotypes (especially **DENV-3**) and high cost necessitate continued reliance on **vector control** and development of **next-generation vaccines** like DengiAll.

## IONS MARITIME EXERCISE

The Indian Navy hosted the IONS Maritime Exercise (IMEX) TTX 2026 at the Maritime Warfare Centre, Southern Naval Command, Kochi.


**About IONS Maritime Exercise (IMEX) TTX 2026:**
**What it is?**

- **IMEX TTX 2026** is a Table-Top Exercise (TTX) conducted under the framework of the Indian Ocean Naval Symposium (IONS).

- It is a **simulated multinational maritime security exercise** aimed at addressing **non-traditional maritime threats** in the Indian Ocean Region such as piracy, maritime terrorism, disaster response, illegal trafficking, and information-sharing challenges.

**Aim:** To strengthen interoperability, coordination, and decision-making among navies of IONS member states in handling maritime contingencies.

**Key Features:**

- Countries such as Bangladesh, France, Indonesia, Maldives, Mauritius, Sri Lanka, Singapore, Tanzania, and others participated, reflecting regional cooperation.

- Conducted in a sophisticated war-gaming environment, it allowed participants to tackle multi-scenario contingencies without live deployment constraints.

- Held under India's renewed IONS chairmanship, it showcases India's growing role as a **net security provider in the IOR**.

**Significance:**

- It advances India's maritime doctrine of **Security and Growth for All in the Region (SAGAR)** by promoting collective maritime security.

- The IOR is crucial for energy and trade flows; such exercises ensure safer Sea Lines of Communication (SLOCs) and regional stability.

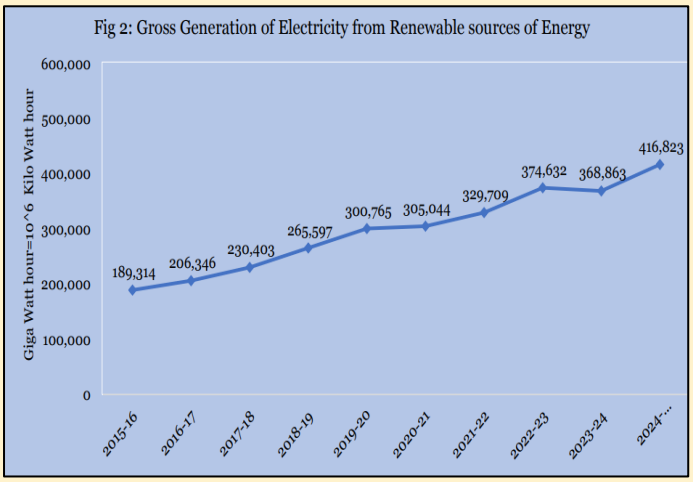
## ENERGY STATISTICS INDIA 2026 REPORT

The National Statistics Office (NSO) has released the 33rd edition of its annual publication, Energy Statistics India 2026, providing a comprehensive integrated dataset on India's energy reserves, production, and consumption.
**About Energy Statistics India 2026:**
**What it is?**

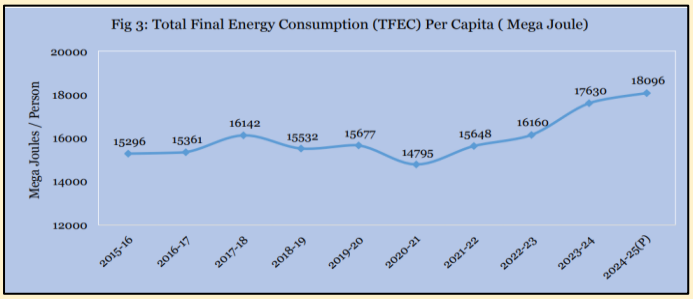
- **Energy Statistics India 2026** is the annual publication of the **National Statistics Office (NSO)**, under the Ministry of Statistics and Programme Implementation (MoSPI).
- It serves as a centralized repository of diverse information regarding the reserve, capacity, production, consumption, and trade of all energy commodities, including fossil fuels and renewables.

**Key Highlights of the Report:**

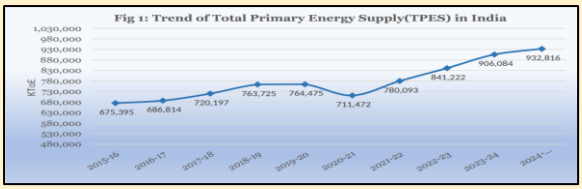
- **Primary Energy Supply:** The Total Primary Energy Supply (TPES) stood at **9,32,816 KTOE** in FY 2024-25, marking a growth of **2.95%** over the previous year.
- **Renewable Energy Potential:** India's total RE potential reached **47,04,043 MW** as of March 2025, with **Solar Energy** holding the highest share at approximately **71%**.




- **State-wise Concentration:** Over **70%** of RE potential is concentrated in six states: Rajasthan, Maharashtra, Gujarat, Andhra Pradesh, Karnataka, and Madhya Pradesh.
- **Capacity & Generation:** Installed RE capacity grew at a **CAGR of 10.93%**(2016–2025), while gross electricity generation from renewables reached **4,16,823 GWh** in FY 2024-25.
- **Consumption Trends:** Per-capita energy consumption rose from **15,296 MJ** in 2015-16 to **18,096 MJ** in 2024-25.




- **Efficiency Gains:** Transmission and Distribution (T&D) losses were reduced from **22%** in FY 2015-16 to **17%** in FY 2024-25.
- **Fossil Fuel Dominance:** Coal remains the primary energy source, with its supply increasing to **5,52,315 KTOE** in FY 2024-25.
- **Financial Growth:** Credit flow to the energy sector increased over **sixfold**, rising from ₹1,688 crore in 2021 to **₹10,325 crore** in 2025.




**Analysis:**

**Positive Aspects:**

- **Renewable Energy Momentum:** The staggering growth of solar potential (from 7.48 lakh MW to 33.43 lakh MW in one year) underscores a successful shift toward green energy targets.
- **Improved Efficiency:** A 5% reduction in T&D losses indicates better grid management and reduced wastage during electricity utilization.
- **Financial Robustness:** The sixfold increase in credit flow suggests high investor confidence and aggressive infrastructure financing in the energy sector.
- **Enhanced Data Transparency:** Incorporating previously missing data, such as international marine bunkers and e-Auction coal consumption, allows for more accurate policy-making.

**Challenges Yet to Tackle:**

- **Heavy Coal Dependency:** Coal remains the dominant source, with supply growing to 5,52,315 KTOE, making the transition to net-zero challenging.
- **Geographical Imbalance:** Over 70% of RE potential is limited to just six states, potentially leading to regional energy security disparities.
- **Rising Energy Demand:** The 30.41% surge in Total Final Consumption (TFC) since 2015-16 puts immense pressure on existing supply chains.
- **Persistent Grid Losses:** Despite improvements, a 17% T&D loss is still significant compared to global efficiency standards.

- **Rising Imports/Trade Reliance:** Consistent growth in Crude Oil and Natural Gas supply indicates a continued high reliance on imports for these commodities.

**Way Ahead:**

- **Decentralize RE Potential:** Focus on harnessing renewable resources in states beyond the top six to ensure balanced national energy growth.
- **Further T&D Reforms:** Implement advanced smart-grid technologies to bring the 17% distribution losses down to single digits.
- **Diversify Energy Mix:** Accelerate the transition from coal (the dominant source) to natural gas and hydrogen to meet climate commitments.
- **Leverage ASI Data:** Use the newly integrated Annual Survey of Industries(ASI) data to create targeted energy-efficiency programs for high-consumption industrial sub-sectors.
- **Sustain Credit Momentum:** Continue facilitating high credit flows (currently ₹10,325 crore) specifically toward emerging green technologies and storage solutions.

Energy Statistics India 2026 paints a picture of an economy successfully scaling its renewable capacity and financial investment while battling a persistent reliance on coal.
While efficiency gains and solar potential are impressive, the concentration of resources and rising overall demand remain critical hurdles. Ultimately, the report provides the essential data roadmap required to navigate India's complex transition toward a sustainable energy future.

## SIJIMALI BAUXITE MINE

Recent violent clashes between tribal villagers and police in Odisha's Rayagada district have left dozens injured following protests against the construction of an approach road for the Sijimali bauxite mine.


**About The Sijimali Bauxite Mine:**
**What it is?**
Sijimali is a massive high-grade bauxite reserve that was handed over to Vedanta Limited in 2023 through a government auction. The project is currently in its early development stages, having recently received conditional Stage-1 forest clearance from the Central government.

**Located in:** The mine covers an area of **1,500 hectares** and is spread across the **Rayagada and Kalahandi** districts of Odisha. It is situated within the Eastern Ghats hill ranges, a region characterized by a series of hills interspersed with fertile valleys.

**Key Features:**

- **Massive Reserves:** It holds an estimated **311 million tonnes** of high-grade bauxite ore.
- **Industrial Utility:** The bauxite from Sijimali is intended for refining into alumina, which is the primary raw material for producing aluminium.
- **Controversial Approvals:** While the administration claims unanimous approval from eight Gram Sabhas, local villagers allege these meetings were fraudulent and their signatures forged.

**About Bauxite Mines in Odisha:**

**What it is?**

Odisha is the undisputed leader in India's bauxite sector, serving as the backbone of the country's aluminium industry. The state's mineral wealth extends beyond bauxite to include significant deposits of iron ore, coal, and nickel.

**Resource Data:**

- National Share: Odisha accounts for 41% of India's total bauxite resources.
- Production Leader: As of 2021-22, the state contributed approximately 73% of India's total bauxite production.
- Overall Mineral Wealth: The state holds nearly 17% of India's total mineral reserves.

**Key Bauxite Mines in Odisha:**

- **Panchpatmali:** Operated by NALCO, it is one of the largest bauxite mines in the world.
- **Gandhamardan:** Located in Bargarh and Balangir districts, known for its ecological and medicinal significance.
- **Sijimali:** The newly auctioned site currently at the center of tribal-police clashes.
- **Niyamgiri:** A site of historical protest where 12 Gram Sabhas famously rejected Vedanta's mining bid in 2013 to protect the sacred hills.

**Tribes Involved:** The mining regions are predominantly inhabited by indigenous tribal communities whose livelihoods depend on the forest ecosystem.

- **Kondhs:** The broader tribal group inhabiting the Rayagada and Kalahandi regions.

- **Dongria Kondhs:** A **Particularly Vulnerable Tribal Group (PVTG)** who famously led the resistance at Niyamgiri, worshipping the forest's Niyam Raja as their supreme deity.

## PM MUDRA YOJANA (PMMY)

Prime Minister of India marked the 11th anniversary of the PM Mudra Yojana (PMMY), highlighting its role in redefining credit access and fostering entrepreneurship among the youth and women.

**About 11 Years of PM Mudra Yojana (PMMY):**

**What it is?**

- The Pradhan Mantri MUDRA (Micro Units Development & Refinance Agency) Yojana is a flagship scheme designed to provide collateral-free loans to non-corporate, non-farm small/micro-enterprises.
- It operates through a refinancing model, where MUDRA provides support to banks, NBFCs, and MFIs to lend to grassroots entrepreneurs.

**Launched in:** 2015.

**Aim:**

- To Fund the Unfunded by bringing small enterprises into the formal financial system.
- To encourage entrepreneurship among the youth (Yuva Shakti) and women (Nari Shakti).
- To generate large-scale employment opportunities at the local level.

**Key Features:**

- **Three Loan Categories:** The loans are tailored to the stage of growth of the business:
  1. **Shishu:** Loans up to **₹50,000** (for start-ups/early stages).
  2. **Kishore:** Loans from **₹50,000 to ₹5 lakh** (for established businesses seeking expansion).

3. **Tarun:** Loans from **₹5 lakh up to ₹10 lakh** (for diversification or larger scaling).
4. **Tarun Plus**: covers loans above ₹10 lakh and up to ₹20 lakh.

**NOTE:** Exclusively for entrepreneurs who have successfully availed and repaid Tarun loans.

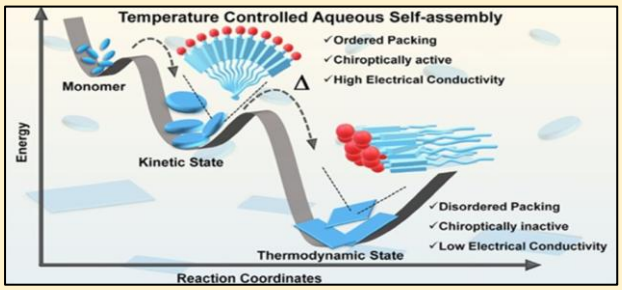
- **Collateral-Free:** No security or collateral is required from the borrower, lowering the barrier to entry for the poor.
- **MUDRA Card:** Borrowers receive a RuPay debit card for the loan amount, allowing for flexible withdrawals and management of working capital.
- **Processing Charges:** Generally, there are no processing fees for Shishu loans, making them highly accessible for micro-entrepreneurs.
- **Target Group:** Focuses specifically on small manufacturing units, service sector units, shopkeepers, fruit/vegetable vendors, and truck operators.

**Significance:**

- It has successfully bridged the credit gap for millions of citizens who were previously dependent on informal moneylenders and high-interest rates.
- A significant majority (historically around 68-70%) of the total loan accounts have been sanctioned to women entrepreneurs, fostering financial independence.
- Over 50% of the loans are typically disbursed to SC/ST and OBC categories, ensuring that the benefits of economic growth reach marginalized sections.

## NAPHTHALENE DIIMIDE

Researchers from CeNS and JNCASR have discovered a way to switch the structural and electrical properties of organic nanomaterials using only temperature.




**About Naphthalene Diimide (NDI):**

**What it is?**

Naphthalene diimide (NDI) is a specialized **amphiphilic molecule**, meaning it possesses both water-attracting and water-repelling parts. This unique chemical nature allows it to organize itself into complex architectures when placed in water.

**Discovered:** Centre for Nano and Soft Matter Sciences (CeNS) and Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR).

**How it Works?**

- **Aqueous Assembly:** In water, NDI molecules naturally group together through noncovalent interactions.
- **Room Temperature (Nanodisks):** At standard room temperature, these molecules form tiny circular **nanodisks**. These disks are highly conductive and interact with polarized light.
- **Thermal Trigger (Heating):** When the environment is heated, the molecules undergo a structural reorganization.
- **State Switch (Nanosheets):** The disks transform into two-dimensional **nanosheets**, causing the material to lose its specific light-interacting properties.
- **Conductivity Change:** This physical shift causes the electrical conductivity to drop **nearly sevenfold**, effectively allowing temperature to act as an electrical dimmer switch.

**What is Supramolecular Self-Assembly?**

- Supramolecular self-assembly is a process where molecules spontaneously organize themselves into well-defined structures without human intervention.
- Instead of strong chemical bonds, they use weaker **noncovalent interactions** to come together.
- It is essentially nature's way of Lego-building at the molecular scale, where the final shape is determined by the molecule's environment, such as temperature or the solvent used.

**Applications:**

- **Future Electronic Devices:** Creating organic circuits where electrical behavior can be precisely tuned or switched.
- **Smart Sensors:** Developing sensors that change their optical or electrical signals in response to thermal changes.
- **Tunable Optoelectronics:** Systems that can switch between different optical states for advanced displays or photonics.
- **Bioelectronic Interfaces:** Creating materials that can adapt and respond within biological environments for medical monitoring.
- **Adaptive Materials:** Designing smart surfaces that can dynamically change their properties based on external conditions.

## EMPEROR PENGUIN AND THE ANTARCTIC FUR SEAL

The International Union for Conservation of Nature (IUCN) has officially uplisted the Emperor penguin and the Antarctic fur seal to the Endangered category due to the devastating impacts of climate change.

**About Emperor Penguin and Antarctic Fur Seal:**

**What it is?**

- The Emperor penguin is the largest of all living penguin species and a sentinel species that serves as an indicator of the health of the Antarctic ecosystem. They are iconic for their survival in the harshest conditions on Earth and are currently facing a sharp decline due to human-induced greenhouse gas emissions.

**Habitat:**

- They are native to Antarctica and rely heavily on **fast ice**—sea ice that is fastened to the coastline or ocean floor.
- This ice serves as a critical habitat for raising their chicks and during their annual **moulting season**.

**IUCN Status:** Endangered

**Key Characteristics:**

- **Flightless Marine Birds:** They are highly specialized for life in the water but are not waterproof during their moulting phase.
- **Breeding Cycles:** They require stable ice platforms; early sea-ice break-up can lead to the collapse of breeding colonies and the death of chicks before they can swim.
- **Population Vulnerability:** Satellite imagery showed a loss of 10% of the population (over 20,000 adults) between 2009 and 2018 alone.
- **Climate Sensitivity:** They are uniquely vulnerable to the early spring break-up of ice caused by rising global temperatures.

**About Antarctic Fur Seals:**

**What it is?**

- The Antarctic fur seal is a marine mammal that is part of the eared seal family. Their survival is intrinsically linked to the Antarctic marine ecosystem, particularly the availability of **krill**, which is their primary food source.


**Habitat:**

- They inhabit the Antarctic and sub-Antarctic waters, with a major breeding stronghold at **South Georgia**.
- Rising ocean temperatures are pushing their habitat and food sources further south or to greater depths.

**IUCN Status:** Endangered

**Key Characteristics:**

- **Dietary Dependency:** They rely almost exclusively on krill; as warming oceans push krill deeper into colder water, the seals face severe food shortages.
- **Rapid Population Decline:** Their population plummeted from approximately 2.18 million in 1999 to just **944,000 in 2025**, a decline of over 50%.
- **Ageing Population:** High mortality rates among pups in their first year due to krill shortages have resulted in an ageing breeding population that cannot easily replenish itself.
- **Compounding Pressures:** Beyond climate change, they face increased competition for food from recovering baleen whale populations and predation by killer whales and leopard seals.

## ELEPHANTA ISLAND

The Archaeological Survey of India (ASI) has unearthed a 1,500-year-old T-shaped stepped reservoir on Elephanta Island, highlighting advanced ancient water management.

**About Elephanta Island:**

**What it is?**

- Elephanta Island, locally known as **Gharapuri** (City of Caves), is a UNESCO World Heritage site located in the Mumbai Harbour.
- It is world-renowned for its majestic rock-cut cave temples, primarily dedicated to the Hindu god Shiva, which represent the pinnacle of Indian rock-cut art and sculpture.

**Discovered/Named By:**

- **Original Name:** Local inhabitants called it Gharapuri.
- **The Elephanta Name:** The name Elephanta was given by **Portuguese explorers** in the 16th century after they found a massive monolithic stone elephant near the island's landing area.

**Kingdoms Associated:**

- **Kalachuris of Mahishmati:** The 6th-century excavations (including the recent coins of King Krishnaraja) suggest the Kalachuris were the primary patrons of the main caves.

- **Konkan Mauryas:** Historical records suggest they ruled the region before the Kalachuris.
- **Chalukyas & Rashtrakutas:** Subsequent dynasties that maintained or contributed to the island's religious and strategic importance.
- **Portuguese & British:** Later colonial powers who used the island for military and administrative purposes.

**Key Characteristics of Elephanta:**

- **Main Cave (Cave 1):** A sprawling 60,000-square-foot rock-cut temple featuring a complex layout of halls, pillars, and shrines.
- **Sadashiva (Trimurti):** The most iconic sculpture on the island, a 20-foot high masterpiece depicting Shiva as the Creator, Preserver, and Destroyer.
- **Gangadhara & Ardhanarishvara:** Elaborate relief panels depicting the descent of the Ganges and the union of Shiva and Parvati as half-male and half-female.
- **Geological Composition:** The caves are carved out of solid **basalt rock**, typical of the Deccan Trap formations.
- **Dual Religious Influence:** While primarily Shaivite (Hindu), there are also smaller groups of Buddhist stupas on the island, indicating a syncretic religious history.

**Recent Discovery (2025-2026 Excavation)**

- Stepped Reservoir: A T-shaped massive structure (14.7m long) built with imported stone blocks from the mainland, used to combat the island's rocky runoff and store monsoon water.
- Economic Hub Evidence: A dyeing vat for textiles and large storage pots suggest the island was an industrial and commercial center, not just a religious site.
- International Trade: Over 3,000 sherds of Mediterranean amphorae and West Asian torpedo jars prove that the island had maritime links with Rome and Mesopotamia.
- Numismatic Evidence: The discovery of 60 coins, including silver and copper coins of King Krishnaraja (Kalachuri dynasty), helps firmly date the island's peak activity to the 6th century CE.

## NATIONAL QUANTUM MISSION

The Union Minister for Science & Technology, recently announced that the National Quantum Mission (NQM) has achieved a historic 1,000-km secure quantum communication milestone in less than two years.

**About The National Quantum Mission (NQM):**

**What it is?**

- The National Quantum Mission is a specialized initiative aimed at seeding, nurturing, and scaling up scientific and industrial R&D in Quantum Technology(QT).
- It seeks to make India a leading nation in the quantum domain, which is considered the next frontier of computing and communication.

**Launched in:** The mission was formally approved by the Union Cabinet in April 2023 and became operational in **October 2024**.

**Aim:**

- To develop intermediate-scale quantum computers with 50-1000 physical qubits in 8 years.
- To establish a pan-India **Quantum Communications** network spanning 2,000 km.
- To ensure national security by developing indigenous, hack-proof communication systems.

Key Features:

- **Thematic Hubs (T-Hubs):** The mission is structured around four specialized hubs established in top academic and R&D institutions:

1. **Quantum Computing:** Developing hardware and software for high-speed computation.
2. **Quantum Communication:** Focusing on Quantum Key Distribution (QKD) and secure networks.
3. **Quantum Sensing & Metrology:** Creating highly sensitive sensors for navigation and healthcare.
4. **Quantum Materials & Devices:** Developing the physical components needed to sustain quantum states.

- **Quantum Key Distribution (QKD):** Utilizing the principles of quantum mechanics (like entanglement and superposition) to create encryption keys that are physically impossible to intercept without detection.
- **Satellite-Based Communication:** The mission includes plans for ground-to-satellite and long-distance inter-city quantum communication.
- **Startup Support:** Expansion of funding to ventures like **QNu Labs**, with new financial instruments like **Optionally Convertible Debt (OCD)** to support startups without immediate equity dilution.
- **Indigenous Development:** A strong focus on Atmanirbhar Bharat, ensuring all critical components—from photon sensors to atomic clocks—are developed within India.

**Significance:**

- By achieving the 1,000-km QKD milestone, India can now secure critical infrastructure, and financial systems against the threat of future quantum hacking.
- The mission bridges the gap between lab research and market-ready products, fuelling a new deep-tech economy and attracting private investment through TDB and BIRAC.

## MISSION MITRA

ISRO launched Mission MITRA in Leh, Ladakh, on April 2, 2026, to conduct India's first-of-its-kind team behavioral and physiological study in a high-altitude environment.


**About Mission MITRA:**

**What It Is?**

- Mission MITRA (Mapping of Interoperable Traits and Response Assessment) is an **Analog Space Mission** designed to simulate the isolation and environmental challenges of spaceflight on Earth.
- By utilizing the unique geography of Leh, which mimics certain stressors of space, ISRO aims to study how humans behave, communicate, and perform under extreme conditions.

**Launched In:** 2026.

**Location:** Leh, Union Territory of Ladakh (**Altitude:** ~3,500 meters).

**Organizations Involved:** ISRO (Indian Space Research Organisation)

**Aim:**

- To examine the coordination between the Gaganyatris (Crew) and the Ground Control Teams.
- To evaluate how hypoxia (low oxygen), cold temperatures, and isolation affect decision-making and psychological resilience.
- To refine protocols for long-duration human spaceflight missions.

**Key Features:**

- **Natural Analog Environment:** Leh provides a natural laboratory with low atmospheric pressure, extreme cold, and a desolate landscape similar to lunar or Martian surfaces.
- **Behavioral Mapping:** Detailed tracking of interoperable traits—how team members support one another and maintain morale during high-stress periods.
- **Physiological Monitoring:** Continuous health monitoring of the crew to study the effects of **hypoxia** (oxygen deprivation) on cognitive function.
- **Ground-Crew Link:** Real-time testing of communication lags and the effectiveness of ground support in helping the crew solve technical problems.
- **Simulated Missions:** The crew undergoes specific operational tasks while isolated in a habitat to simulate the closed-loop life support environment of a spacecraft.

**Significance:**

- The data generated on human factors will contribute directly to the safety and performance protocols of India's first manned space mission.
- This mission builds foundational knowledge for **long-duration missions**, such as the proposed Indian Space Station and future Moon landings.
- It marks a leap in India's indigenous research in aerospace medicine, reducing dependence on foreign analog data.

## MOUNT SEMERU

The Mount Semeru, the tallest and one of the most active volcanoes in Indonesia, erupted multiple times, sending thick ash plumes up to 1,100 metres into the sky.


**About Mount Semeru:**

**What It Is?**

- Mount Semeru, also known as **Mahameru** (The Great Mountain), is an active **stratovolcano** (composite volcano). It is characterized by its steep profile and periodic, explosive eruptions. It is the highest peak on the island of Java and a sacred site in local culture.

**Location:**

- **Island:** East Java, Indonesia.
- **Geographic Coordinates:** It is part of the **Tengger Massif**, a volcanic complex that includes the famous Mount Bromo.
- **Tectonic Setting:** Located on the **Pacific Ring of Fire**, where the Indo-Australian Plate subducts beneath the Sunda plate (which is part of Eurasian Plate).

**Origin and Formation:**

Mount Semeru is a product of subduction zone volcanism.

- The denser Indo-Australian oceanic plate sinks into the mantle beneath the Sunda Shelf.
- As the plate descends, water and volatiles are released, lowering the melting point of the overlying mantle and creating magma.
- Over hundreds of thousands of years, successive layers of hardened lava, tephra, and volcanic ash have accumulated to form its massive 3,676-metre structure.

**Key Features:**

- **Summit:** The highest point is called **Mahameru**. The active crater, **Jonggring Seloko**, is located southeast of the summit.
- **Eruption Style:** It is known for its **Vulcanian and Strombolian** activity, frequently emitting small ash explosions every 15–30 minutes, interspersed with massive, deadly eruptions.
- **Lahar Risk:** Due to high rainfall in Indonesia, the accumulated ash on its slopes often mixes with water to create **lahars** (volcanic mudflows) that race down river channels.
- **Pyroclastic Flows:** The volcano often generates hot avalanche clouds which are fast-moving currents of hot gas and volcanic matter that can reach speeds of over 100 km/h.
- **Height:** Rising **3,676 metres** above sea level, it dominates the landscape of East Java.

**Significance:**

- Indonesia is home to nearly 130 active volcanoes; Semeru is among the most closely monitored due to its proximity to dense population centres.
- In Hindu-Buddhist tradition, Semeru is considered the Abode of the Gods and a replica of the mythical Mount Meru of India. It is a major pilgrimage and trekking destination.

## PROTOTYPE FAST BREEDER REACTOR

Prime Minister of India congratulated scientists as India's first indigenous Prototype Fast Breeder Reactor (PFBR) at Kalpakkam, Tamil Nadu, successfully attained criticality.

**About India First Fast Breeder Reactor (FBR) Achieve Criticality:**

**What is Fast Breeder Reactor (FBR)?**

- A Fast Breeder Reactor is an advanced nuclear reactor that **generates more fissile material (fuel) than it consumes** while producing electricity. It is fast because it uses high-energy (fast) neutrons to sustain the fission chain reaction, unlike conventional reactors that use slow neutrons.

**What is Criticality?**

- In nuclear physics, **criticality** is the state in which a nuclear fuel sustains a **self-supporting chain reaction**. It is the point at which the number of neutrons produced by fission is exactly equal to the number of neutrons lost (through leakage or absorption) plus those causing new fissions.

**Developed By:** The 500 MWe PFBR has been developed by Bharatiya Nabhikiya Vidyut Nigam Ltd (BHAVINI).

**How It Works?**

1. Fuel: It uses a Uranium-Plutonium Mixed Oxide (MOX) fuel.
2. The Breeding Process: The reactor core is surrounded by a blanket of fertile material (Uranium-238). When these U-238 atoms capture fast neutrons, they undergo transmutation to become Plutonium-239, which is a high-grade nuclear fuel.
3. Coolant: Instead of water, it uses Liquid Sodium as a coolant because sodium does not slow down neutrons, allowing the fast reaction necessary for breeding.
4. Heat Exchange: The heat generated by fission is transferred to the liquid sodium, which then heats water to produce steam to turn turbines.

Aim:

- To create a surplus of Plutonium fuel to power future fast reactors.
- To act as a bridge to the third stage of India's nuclear programme, where **Thorium-232** will be converted into **Uranium-233**.
- To provide a sustainable, long-term solution to India's energy needs by extracting significantly more energy from uranium than conventional reactors.

**Key Features:**

- **Indigenous Design:** Built almost entirely with Indian technology and materials.
- **MOX Fuel Technology:** Utilizes recycled fuel from the first stage (Pressurized Heavy Water Reactors).
- **Passive Safety:** Equipped with advanced safety systems that can automatically shut down the reactor during emergencies without human intervention.
- **High Efficiency:** Operates at higher temperatures than conventional reactors, leading to better thermal efficiency.

**Significance:**

- Attaining criticality is the final scientific green light before the reactor begins generating electricity for the grid.
- It proves that the reactor's core geometry, fuel arrangement, and engineering calculations are accurate and functional.
- For India, PFBR criticality signals the formal operational start of the Second Stage of its nuclear roadmap, moving the country closer to utilizing its vast thorium reserves.

## ANDHRA PRADESH REORGANISATION (AMENDMENT) BILL, 2026

President of India has given her assent to the Andhra Pradesh Reorganisation (Amendment) Bill, 2026, officially declaring Amaravati as the sole and permanent capital of the state.


**About Amaravati:**
**What It Is?**

- Amaravati is a planned city situated on the banks of the **Krishna River**. It serves as the administrative, legislative, and judicial capital of Andhra Pradesh. The city is designed as a People's Capital, blending modern urban planning with deep-rooted historical and spiritual heritage.

**Location:**

- **District:** Guntur district, Andhra Pradesh.
- **Geographic Feature:** Located on the southern bank of the **Krishna River**, positioned between the major urban hubs of **Vijayawada** and **Guntur**.

**Origin of the Modern City:**

- **Post-Bifurcation:** Following the creation of Telangana in 2014, Andhra Pradesh required a new capital.
- **Foundation:** The foundation stone for the modern city was laid on **October 22, 2015**, at Uddandarayunipalem.
- **Naming:** It was named after the ancient capital of the Satavahana dynasty, symbolizing a rebirth of Telugu pride.

**Historical Importance:**

Amaravati holds a prestigious place in Indian history, spanning over 2,000 years:

- **Satavahana Dynasty:** It served as the capital of the Satavahanas (2nd Century BCE to 3rd Century CE), who were among the first great rulers of Central and Southern India.
- **Buddhist Learning Center:** The city was a world-renowned centre for Buddhism. The **Amaravati Stupa** (Mahachaitya) was one of the largest in India, famously adorned with intricate limestone carvings known as the **Amaravati School of Art.**
- **Ancient Global Trade:** Historical records and Roman coins found in the region indicate that Amaravati was a major hub for trade with the Roman Empire and Southeast Asia.
- **Religious Pluralism:** It is known as **Aramavati** (City of Gardens) and is home to the **Amareswara Temple**, one of the five sacred Pancharama Kshetrams dedicated to Lord Shiva, making it a City of Five Religions including Hinduism, Buddhism, and Jainism.
- **Xuanzang's Visit:** The famous Chinese traveller **Xuanzang** visited the region in 639 CE, writing extensively about the magnificent monasteries and the vibrant Buddhist culture of the area.

**Significance:**

- The 2026 Act provides legal finality to the capital issue, ensuring that all three branches of government—Executive, Legislature, and Judiciary—function from a single point.
- As a Greenfield capital, it is intended to become a hub for IT, pharmaceuticals, and blue-economy industries due to its proximity to the Krishna River.
- The restoration of Amaravati as the capital is seen as a revival of the historical glory of the Telugu people.

## INDIAN SOFTSHELL TURTLES

Police in Greater Noida rescued 16 Indian Softshell turtles from a smuggler during a routine check.

- The turtles, native to the Ganga river system and protected under Schedule I of the Wildlife Protection Act, were being illegally transported.

**About Indian Softshell Turtles:**

**What It Is?**

- The Indian Softshell Turtle (*Nilssonia gangetica*), also known as the **Gangetic Softshell Turtle**, is a large freshwater reptile. Unlike most turtles that have a hard, bony scute, these belong to the family *Trionychidae*, characterized by a leathery shell that lacks a traditional keratinized cover.

**IUCN Status and Legal Protection:**

- IUCN Red List: Endangered.
- Wildlife Protection Act (1972): Schedule I (India's highest level of legal protection, equivalent to that of the Tiger).
- CITES: Appendix I.

**Habitat and Distribution:**

- **Primary Range:** Found predominantly in the **Ganges, Indus, and Mahanadi** riversystems.
- **Environment:** They prefer deep, turbid rivers, streams, large canals, lakes, and ponds with mud or sand bottoms where they can easily bury themselves.
- **Geographic Spread:** Distributed across India, Pakistan, Bangladesh, and Nepal.

**Key Characteristics:**

- **Soft Shell:** It has a flat, oval, and leathery carapace (upper shell) that is olive-green or dull green in color.
- **Distinct Head:** The head is large with a distinctive **snout-like proboscis** (pointed nose) that allows it to breathe while remaining submerged.
- **Size:** They are massive, with the carapace length reaching up to **94 cm**.
- **The 20-Claw Myth:** Poachers specifically target individuals with 20 claws (five on each limb), as they are falsely believed to bring good luck or have higher medicinal value in the black market.
- **Diet:** They are omnivorous scavengers, feeding on fish, mollusks, frogs, and occasionally rotting vegetation or carcasses.

**Significance:**

- As scavengers, they play a vital role in the river ecosystem by consuming organic waste and dead matter, helping to keep the Ganges and other rivers clean.
- Their presence indicates the health of the freshwater riverine systems.

## PROJECT CHETAK

BRO's Project Chetak has celebrated its 47th Raising Day on 4 April 2026 at Bikaner, Rajasthan, marking over four decades of strategic infrastructure development in India's western border region.

**About Project Chetak:**

**What it is?**

- **Project Chetak** is one of the largest and strategically significant infrastructure projects under the Border Roads Organisation (BRO).
- It was **raised in 1980** to develop and maintain roads and defence-related infrastructure in the **western border region**, especially across Rajasthan, Punjab, and northern Gujarat.

**Organisation Involved:** Border Roads Organisation (BRO)

**Aim:**

- To strengthen border infrastructure and military logistics in western India.
- To ensure all-weather connectivity for defence forces and border communities.
- To support national security and regional economic development.

**Key Features:**

- **Extensive Road Network:** Maintains over 4,000 km of roads across the western sector.
- **Defensive Infrastructure:** Includes 214 km of Ditch Cum Bund (DCB) for border security and flood control.
- **Strategic Upgradation:** Feeder roads toward the International Border are being upgraded to National Highway double-lane standards.

**Significance:**

- **National Security:** Ensures rapid movement of troops, equipment, and supplies to border areas.
- **Regional Development:** Improves connectivity for remote border villages, boosting trade, mobility, and socio-economic integration.

## INDIAN CRESTED PORCUPINE

Kashmir's red gold (Saffron) is under severe threat as the Indian crested porcupine has begun devouring saffron corms (underground bulbs) in the Pampore highlands.

**About The Indian Crested Porcupine:**

**What It Is?**

- The Indian crested porcupine (*Hystrix indica*) is a large, nocturnal rodent belonging to the Old World porcupine family. It is characterized by its coat of sharp quills, which serve as a highly effective defense mechanism against predators. In Kashmir, it has recently emerged as a significant agricultural pest, specifically targeting the roots and bulbs of high-value crops.

**Habitat:**

- **Geographic Range:** Found throughout Southern Asia and the Middle East, including India, Pakistan, and Iran.
- **Ecological Preference:** They are highly adaptable and live in various habitats, including rocky hillsides, scrublands, forests, and increasingly, **cultivated agricultural highlands** (like the *karewa* uplands of Pampore).
- **Nesting:** They are expert burrowers, creating extensive underground tunnel systems or using natural caves and rock crevices for shelter.

**IUCN Status:**

- **Least Concern (LC):** Globally, the species is widespread and not currently threatened with extinction.

**Key Characteristics:**

- **Defense Mechanism:** Its body is covered in multiple layers of quills; the longest quills are located on the neck and shoulder, forming a crest.
- **Nocturnal Behavior:** They are active primarily at night, making it difficult for farmers to monitor or deter them during their peak foraging hours.
- **Diet:** They are herbivorous, feeding on fruits, grains, and roots. Their powerful incisors allow them to dig deep and hollow out **corms and tubers**.
- **Size:** They are the largest rodents in India, weighing between **11 kg and 18 kg**.
- **Reproduction:** They have a high survival rate in areas where natural predators like **leopards** are declining.

## SAFFRON

About Saffron:

What It Is?

- Saffron is the world's most expensive spice by weight, derived from the dried, vivid crimson stigmas (thread-like structures) of the **Crocus sativus** flower, commonly known as the saffron crocus. Each flower produces only three stigmas, which must be hand-harvested and dried to produce the spice used in cooking, medicine, and dyes.

**Region and Cultivation:**

Saffron requires a very specific climate—cool, dry summers and cold, snowy winters—to thrive.

- **Global Leaders: Iran** is the largest producer, accounting for roughly 90% of global supply. Other major producers include **Spain, Greece, and Afghanistan**.

- **Indian Context:** In India, saffron is primarily grown in the **Kashmir Valley**, specifically in the **Pampore highlands** (Pulwama district), often referred to as the Saffron Bowl of Kashmir.
- **Soil Type:** It grows best in **Karewa soil**—lacustrine (lake-derived) deposits consisting of silt, sand, and clay, which are unique to the Kashmir valley and provide excellent drainage.

**Key Features:**

- **The Corm:** Unlike many plants grown from seeds, saffron grows from **corms**, which are underground, bulb-like stems. These corms are perennial and are the target of pests like the Indian crested porcupine.
- **Labor Intensive:** It takes approximately **150,000 to 175,000 flowers** to produce just **one kilogram** of dry saffron. Because the flowers bloom for only a few weeks in autumn and must be picked at dawn, the labor costs are immense.
- **Chemical Profile:**
  - **Crocin:** Responsible for the intense orange-yellow color.
  - **Picrocrocin:** Gives saffron its distinct, slightly bitter taste.
  - **Safranal:** Provides the characteristic hay-like or metallic aroma.
- **GI Tag Status: Kashmir Saffron** has been granted a **Geographical Indication (GI) tag**, which protects its identity and prevents the sale of adulterated or cheaper Iranian saffron under the Kashmiri name.
- **Grade and Quality:** It is graded based on the length of the red part of the stigma. Mongra (Kashmiri) or Sargol (Iranian) represents the highest grade, consisting only of the deep red tips without the yellow style.

## TAR BALLS MANAGEMENT RULES, 2026

The Ministry of Environment, Forest, and Climate Change has released the draft Tar Balls Management Rules, 2026, to protect India's coastline from oil spills.

**About Tar Balls:**

**What They Are?**

- Tar balls are small, dark, sticky, or hardened blobs of weathered crude oil found floating on the ocean surface or washed ashore on beaches. They are essentially the remnants of oil that has undergone physical and chemical changes due to environmental exposure.

**Chemical Composition:**

Tar balls are complex mixtures consisting of:

- **Hydrocarbons:** Primarily heavy, high-molecular-weight compounds like paraffins and aromatics.
- **Asphaltenes:** These provide the characteristic black color and sticky texture.
- **Impurities:** They often trap sand, shells, seaweed, and microplastics as they roll along the ocean floor or beach.
- **Sulfur and Metals:** Trace amounts of nickel and vanadium are often present, depending on the source of the crude oil.

**How They Are Formed?**

The formation of tar balls is a result of a process called **weathering**:

1. **Oil Release:** It begins with an oil spill from ships, offshore platforms, or natural oil seeps on the ocean floor.
2. **Evaporation & Dissolution:** Lighter components of the oil evaporate into the air or dissolve in water.
3. **Emulsification:** The remaining heavy oil mixes with seawater to form a thick, mousse-like emulsion.
4. **Fragmentation:** Wind and waves break this thick oil into smaller pieces.
5. **Solidification:** As the lighter fractions continue to leave, the residue hardens into sticky, dense spheres (tar balls) that are carried by currents to the shore.

**Key Features:**

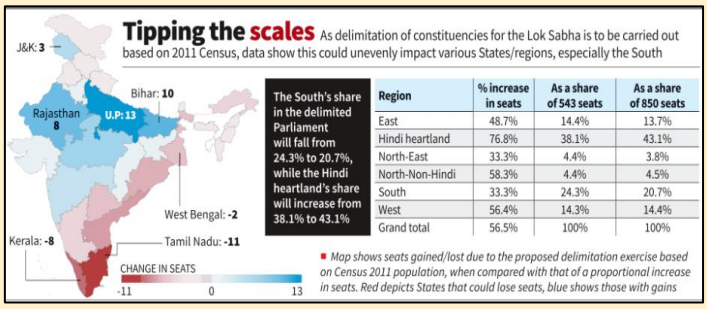
- **Persistence:** They are highly resistant to environmental degradation and can remain in the marine environment for a long time.
- **Size Variability:** They can range from the size of a coin to that of a basketball.
- **Seasonal Presence:** In India, they are most prominent on the western coast (Gujarat to Goa) between **April and September** due to south-westerly winds and currents.
- **Sticky Texture:** When fresh, they are soft and tacky, but they can become hard and crusty over time as they incorporate sand and debris.

**Implications:**

- Seabirds, fish, and sea turtles often mistake tar balls for food. Ingestion can lead to internal poisoning, while external coating can impair a bird's ability to fly or swim.
- They can smother coral reefs and seagrass beds, disrupting local marine habitats.
- Accumulation on beaches reduces the aesthetic value of coastal destinations, impacting the tourism industry in states like Goa.

## THE CONSTITUTION (131ST AMENDMENT) BILL, 2026

The Union Government has proposed The Constitution (One Hundred and Thirty-First Amendment) Bill, 2026, which seeks to increase the Lok Sabha's strength from 543 to 850 members.




**About The Constitution (131st Amendment) Bill, 2026:**

**What it is?**

- It is a landmark legislative proposal designed to overhaul the composition of the Indian Parliament and the process of redrawing electoral boundaries. It specifically targets **Articles 81, 82, and 334A** of the Constitution to address long-standing demographic shifts and gender representation gaps.

**Aim:**

- To expand the **Lok Sabha** to reflect India's significant population growth since the 1971 Census.
- To enable immediate implementation of **1/3rd reservation for women** in the Lok Sabha and State Assemblies by decoupling it from the requirement of a post-2026 Census.
- To provide a modern legal framework for the **Delimitation Commission** to readjust seats based on the latest available demographic data.

**Proposed Key Features:**

- **Increase in House Strength:** Proposes that the Lok Sabha consist of not more than **815 members** from States and **35 members** from Union Territories, totaling **850 members**.

- **Amendment to Article 82:** Seeks to delete the third proviso that mandates delimitation only after the first Census conducted after 2026. This allows the government to use pre-2026 Census data to redraw constituencies immediately.
- **Expedited Women's Reservation:** Amends **Article 334A** to allow the 1/3rd reservation for women to take effect immediately after delimitation, bypassing the delay originally stipulated in the 106th Amendment Act of 2023.
- **Delimitation Commission 2026:**
    - Empowered to redraw constituencies and readjust seat allocations.
    - Chaired by a **Supreme Court Judge** (serving or retired).
    - Includes the **Chief Election Commissioner** and **State Election Commissioners as** ex-officio members.
    - Will involve 10 associate members (5 MPs and 5 MLAs) per state, though they will lack voting rights.
- **Seat Rotation:** Seats reserved for women will be **allotted by rotation** among different constituencies in a State or Union Territory.
- **Judicial Immunity:** Orders issued by the Delimitation Commission and published in the Gazette will have the force of law and **cannot be challenged in any court**.

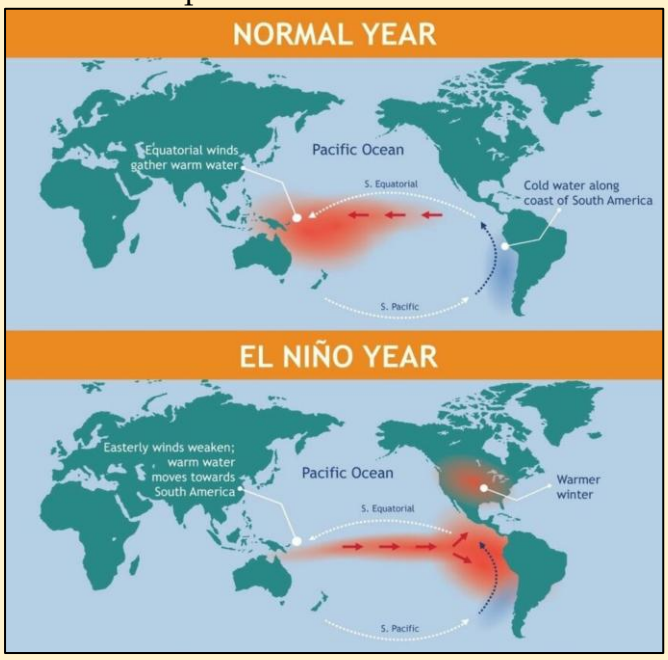
**Significance:**

- By increasing seats to 850, the Bill ensures that the ratio between the population and the number of representatives is more accurately reflected, potentially improving grassroots governance.
- It removes the constitutional bottleneck that would have delayed women's reservation until the 2030s, potentially transforming the political landscape in the very next general election.
- Redrawing constituencies based on current data addresses the demographic changes that have made the 1971-based seat allocation obsolete.

## EL NIÑO & IT'S IMPACT

India's weather office has forecast a **below-average monsoon in 2026**, with an **El Niño expected to develop** and weigh on rainfall in the latter half of the June-September season

- In past El Niño years, India has seen below-average rainfall, at times triggering severe droughts, crop damage, and export curbs.




**What is El Niño?**

- **El Niño** is the warming of the **central and eastern Pacific Ocean** (sea surface temperatures rise above normal)
- Alters **atmospheric circulation** and weakens **monsoon winds** over the Indian subcontinent

**How it Affects Indian Monsoon**

- Strongly linked to **weaker monsoons** (reduced rainfall)
- However, India has still seen average or above-average rains in **at least 5 of 17 El Niño events** over past seven decades
- But in the **last six El Niño years**, India has received **below-average rains**

**Historical Example (2009)**

- Even a **weak El Niño** led to sharp drop in rainfall to **78.2% of long-period average** – lowest in 37 years
- Weather models suggest **2026 El Niño could be strong**

**Why is Monsoon Important for India?**

**Rainfall Contribution**

- Delivers nearly **70% of India's annual rainfall**

**Agricultural Significance**

- Agriculture accounts for about **18% of India's $4 trillion economy**
- Employs nearly **half of India's 1.5 billion people**

**Impact of Below-Normal Rainfall**

- Smaller harvests of: **rice, cotton, soybeans**
- Lower soil moisture affects **winter crops** (wheat, rapeseed)
- May prompt export restrictions (as in 2023 El Niño year)
- May force India to **increase imports of edible oils** (palm oil, soyoil)
- Reduces **hydropower output** (accounts for about 6% of power mix)

**Impact on Inflation and Central Bank Policy**

**Food Inflation Link**

- Food accounts for nearly **one-third of India's consumer price index (CPI)**
- RBI monitors food inflation closely when setting monetary policy

**Recent Context (2024-2025)**

- Rainfall was **above average** over past two years
- Helped ease food prices and broader inflation
- Gave RBI room to **cut lending rates**

**2026 Risks**

- Below-normal rainfall + rising commodity costs (due to Iran conflict) = **higher overall inflation**
- Could force RBI to **raise interest rates**
- Slower economic momentum + higher inflation = **further hit to foreign investment**
- Additional pressure on **rupee** (already among worst-performing Asian currencies in 2026)

- **El Niño & La Niña:** Part of ENSO cycle; affects global weather patterns
- **Indian Monsoon:** June-September; southwest monsoon; 70% of annual rainfall
- **Rainfall classification:** Normal (96-104% LPA); Below-normal (90-96%); Deficient (<90%)
- **RBI's inflation targeting:** 4% target with 2-6% tolerance band

- **Below-average monsoon forecast** – El Niño expected to develop in latter half of season
- **Iran conflict** – rising commodity costs compounding inflation risks
- **Rupee depreciation** – among worst-performing Asian currencies in 2026
- **Export curbs possible** – rice, wheat, sugar (as seen in 2023)

## 500TH ANNIVERSARY OF THE FIRST BATTLE OF PANIPAT

April 21st marks the 500th anniversary of the First Battle of Panipat (April 21, 1526), a pivotal conflict where the outnumbered forces of Zahir-ud-din Muhammad Babur defeated the Lodi Sultanate.

**About 500 Years of the First Battle of Panipat: What it is?**

- The First Battle of Panipat was a landmark military engagement that signaled the end of the **Delhi Sultanate** and the beginning of the **Mughal Empire** in India. It is celebrated as a classic example of a victory of technique over numbers, where a small, disciplined force overcame a massive, traditional army.

**Happened In**: The battle took place on **April 21, 1526**, on the plains of Panipat (present-day Haryana, India).

**Kingdoms Involved:**

- **The Timurid Forces:** Led by **Zahir-ud-din Muhammad Babur**, a fugitive prince from Ferghana (Central Asia) with approximately 12,000 men.
- **The Lodi Sultanate:** Led by **Ibrahim Lodi**, the last Sultan of Delhi, commanding a vast force estimated at nearly 100,000 men and hundreds of war elephants.

**Background to the Battle:**

- Babur did not invade India solely for religious conquest; he was a political opportunist invited by disgruntled Lodi nobles.
- **Daulat Khan Lodi** (Governor of Punjab) and **Alam Khan** (Ibrahim's uncle) sought Babur's help to overthrow Ibrahim Lodi's perceived tyranny. Babur, having lost his ancestral lands in Central Asia, viewed Hindustan as a site for a new, permanent kingdom.

**Key Features of the Event:**

- **Tulughma Tactics:** Babur utilized a flanking maneuver where his turning parties wheeled around the enemy to attack from the sides and rear, compressing the Lodi army into a helpless mass.
- **Rumi (Ottoman) Device:** Babur effectively used Ottoman-style field artillery and matchlocks in open battle on a decisive scale, demonstrating their superiority over traditional elephant-based warfare.
- **Field Artillery Innovation:** While gunpowder existed in India, Babur was the first to use **matchlocks (tufang)** and cannons in an open-field battle rather than just for sieges.
- **Infantry Accuracy:** Unlike Indian forces who fired from elephants, Babur's arquebusiers fought on foot behind mantlets (*turah*), providing higher accuracy and faster reload speeds.

**Post-Event Developments:**

- **Collapse of the Sultanate:** Ibrahim Lodi was killed on the battlefield, leading to the immediate fall of Delhi and Agra to Babur's forces.
- **Hostile Occupation:** Babur initially faced a deeply hostile population; even the Muslim elite viewed him as a barbarian outsider, leading to several local revolts.
- **Battle of Khanwa (1527):** Babur had to consolidate his victory by defeating a massive Rajput confederacy under **Rana Sanga**, which ironically included Ibrahim Lodi's brother and Muslim chieftains like Hasan Khan Mewati.
- **Consolidation:** Within just two years, Babur expanded his control up to Bihar, effectively stabilizing his new empire before his death in 1530.

**Significance:**

- **End of an Era:** The battle marked the definitive end of the Lodi dynasty and the 320-year-old Delhi Sultanate.
- **Military Revolution:** It proved that **discipline and tactical imagination** were superior to sheer numerical strength and war elephants.
- **Founding of the Mughals:** It established the Mughal lineage which would rule India for over 300 years, profoundly shaping Indian architecture, cuisine, and administration.

## PRIME MINISTER INTERNSHIP SCHEME (PMIS):

The Ministry of Corporate Affairs (MCA) has expanded the Prime Minister Internship Scheme (PMIS) to allow final-year graduate and postgraduate students to apply for paid internships.

**About Prime Minister Internship Scheme (PMIS):**

**What it is?**

- The PMIS is a flagship phygital initiative of the Government of India designed to provide structured, paid internship opportunities to the youth in India's top 500 companies.
- It acts as a bridge between formal education and the professional corporate world, offering hands-on experience across diverse sectors.

**Launched In:** The pilot phase of the scheme was launched in **October 2024**, following the announcement in the Union Budget 2024-25.

**Nodal Ministry:** Ministry of Corporate Affairs (MCA).

**Aim:**

- To develop critical workplace competencies like problem-solving, teamwork, and adaptability.
- To embed experiential learning into the academic journey as envisioned in the National Education Policy.
- To provide real-world exposure to business environments and corporate processes to ensure students are job-ready upon graduation.

**Key Features:**

- **Financial Assistance:** Interns receive a monthly stipend of **₹5,000** from the government and **₹500** from the company (totaling **₹5,500** or more; current pilot highlights indicate a minimum assistance of **₹9,000** per month in some contexts).
- **Age Criteria:** Open to youth between the ages of **18 and 25 years**.
- **Top Companies:** More than **300 companies** are currently participating in the pilot phase, posting roles on an ongoing basis.
- **Duration:** The scheme typically provides for a **12-month** internship period to ensure deep industry immersion.
- **Insurance Cover:** Interns are provided with insurance coverage under the Pradhan Mantri Jeevan Jyoti Bima Yojana and Pradhan Mantri Suraksha Bima Yojana.

**New Rules (2026 Expansion)**

- **Expanded Eligibility:** Participation is no longer restricted to those who have already completed their degrees; **final-year undergraduate and postgraduate students** are now eligible.
- **Mandatory NOC:** Students must submit a **No Objection Certificate (NOC)** from their respective educational institutions.
- **Academic Assurance:** The NOC must explicitly state that the internship will **not interfere** with the student's academic requirements or attendance.
- **Authorized Signatories:** The NOC can be signed by the Head of Department (HoD), Dean, Principal, or Training & Placement Officer.
- **Pilot Phase Integration:** These changes are implemented starting with the third round of the pilot phase, accessible via the official portal.

## DOLPHIN FRIENDS INITIATIVE

The forest department in Prayagraj has launched the Dolphin Friends volunteer network to strengthen conservation of the endangered Gangetic dolphin through community participation and regular river monitoring.

**About Dolphin Friends Initiative:**

- Dolphin Friends is a dedicated community-based volunteer network created to monitor the movement, breeding, and habitat conditions of the endangered Gangetic river

**Aim:**

- To protect and monitor the endangered Ganges river dolphin, especially during sensitive breeding seasons like the monsoon.

- To create awareness among local communities and build a participatory conservation model for long-term river ecosystem protection.

**Key Features:**

- **Community Participation:** Fishermen and boatmen are actively involved as key stakeholders due to their direct engagement with river ecosystems and dolphin habitats.
- **Seasonal Monitoring:** Special surveillance is intensified during the monsoon season, which is the breeding period for dolphins, ensuring better reproductive protection.
- **Scientific Support:** Research scholars and teachers are being included to strengthen ecological monitoring, documentation, and awareness campaigns.
- **Hotspot Surveillance:** Focused monitoring is being conducted in key dolphin habitats such as Phaphamau, Chhatnag, Meja, Prayagraj, Patna, and Fatehpur with regular reporting systems.

**Significance:**

- Rising dolphin numbers indicate improving water quality and healthier river ecosystems, making dolphins strong indicators of freshwater ecological health.
- The initiative strengthens conservation through a people + policy model by combining grassroots participation with institutional programmes like Project Dolphin.

## DRUZHBA PIPELINE

The resumption of Russian oil flows through the Ukrainian section of the Druzhba pipeline, has led Hungary to lift its veto on a critical 90 billion euro EU loan for Kyiv.


**About The Druzhba Pipeline:**

**What it is?**

- The Druzhba (meaning Friendship) pipeline is one of the world's longest and largest crude oil pipeline networks. It serves as a vital energy artery connecting Russia to several countries in Central and Eastern Europe.

**Established In:** The system was constructed by the Soviet Union and began operations in **1964** to supply oil to the then-socialist bloc countries of the Council for Mutual Economic Assistance (COMECON).

**Located Between:** It originates in the **Almetyevsk** region of central Russia, where several pipelines carrying crude from Siberia, the Urals, and the Caspian Sea converge. It runs through Belarus and then splits into two major branches:

- **Northern Branch:** Continues through Poland to **Germany**.
- **Southern Branch:** Runs through Ukraine to **Hungary, Slovakia, and the Czech Republic**.

**Aim of the Pipeline:**

- To provide a reliable, high-capacity overland route for transporting Russian crude oil directly to European refineries, bypassing maritime routes.
- Historically designed to integrate the economies of Eastern Europe with the Soviet Union; today, it remains a critical infrastructure for landlocked refineries in Central Europe.

**Key Features:**

- **Massive Capacity:** The system has a capacity of **1.2 million to 1.4 million barrels per day**, with the potential to scale up to 2 million barrels.
- **Southern Leg Vulnerability:** The southern section, which passes through **Western Ukraine**, has become a flashpoint for conflict-related damage and political leverage.

- **Branching Network:** The network spans approximately **4,000 kilometers**, feeding major industrial hubs such as Germany's PCK Schwedt refinery.

- **Transit Geography:** Unlike many newer pipelines, Druzhba is unique because it relies on the cooperation of transit states like Ukraine and Belarus to reach the European Union.

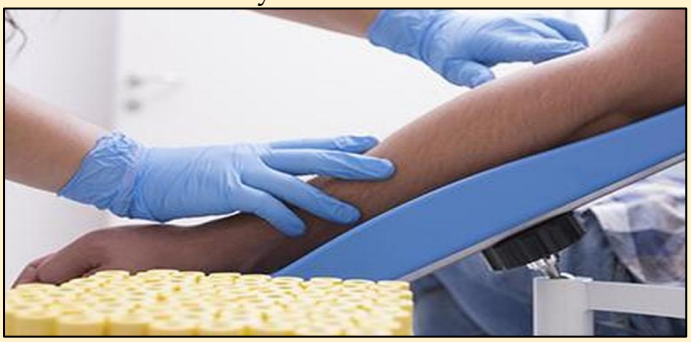
**Significance:**

- The pipeline has become a politically charged piece of infrastructure, where disruptions can be used by transit or recipient states to block or unlock international aid and sanctions.

- Despite EU efforts to decouple from Russian energy, countries like **Hungary and Slovakia** remain heavily dependent on this specific pipeline for their domestic oil supply.

## HAEMOPHILIA

The World Health Organization (WHO) advanced a new resolution to improve care equity for haemophilia, highlighting that India currently carries the world's second-largest burden with nearly 1.4 lakh estimated cases.



**About Haemophilia:**

- Haemophilia is a rare, inherited bleeding disorder characterized by the blood's inability to clot properly. This occurs because the blood lacks sufficient **clotting factors**—specialized proteins that work with platelets to stop bleeding after an injury.

**There are two primary types:**

- **Haemophilia A:** The most common type, caused by a deficiency in **Factor VIII**.

- **Haemophilia B:** Also known as Christmas Disease, caused by a deficiency in **Factor IX**.

**Causes and Genetic Pattern:**

- **X-Linked Recessive Inheritance:** The condition predominantly affects males because the genes for clotting factors are located on the X chromosome. Females, having two X chromosomes, are usually carriers but can occasionally experience mild symptoms.
- **Spontaneous Mutations:** Approximately **one-third of all cases** occur due to a spontaneous genetic mutation where there is no previous family history of the disorder.
- **Protein Deficiency:** The root cause is the low or absent levels of essential proteins (Factors VIII or IX) that act as the glue in the body's clotting mechanism.

**Signs and Symptoms:**

The severity of symptoms depends on the level of clotting factors present in the blood:

- **Prolonged Bleeding:** Bleeding that lasts much longer than normal after minor cuts, dental work, or surgery.
- **Easy Bruising:** Large, deep bruises resulting from minor bumps.
- **Haemarthrosis (Joint Bleeding):** Spontaneous internal bleeding into joints (knees, elbows, ankles), causing swelling, pain, and stiffness.
- **Life-Threatening Crises:** Severe cases can involve spontaneous **brain hemorrhages** or bleeding into vital organs, which can be fatal without immediate intervention.
- **Chronic Damage:** Repeated joint bleeds lead to progressive joint deformity and long-term disability.

**Key Features**

- **Diagnostic Tools:** Diagnosis involves physical exams and specific blood tests like **Complete Blood Count (CBC)**, **aPTT** (clotting time), and **factor activity assays**.
- **Severity Levels:** Classified as mild, moderate, or severe based on the percentage of clotting factor in the blood.
- **Prophylaxis:** A key management feature involving regular infusions of clotting factors to prevent bleeding before it starts, rather than just treating it after an injury.
- **Modern Therapies:** Advances include **non-factor therapies** (like emicizumab) and **gene therapy**, which aims to provide a long-term cure by enabling the body to produce its own clotting factors.

**Significance:**

- India's massive undiagnosed population (nearly 1 lakh people) represents a significant hidden health crisis that requires urgent registry and screening.
- Haemophilia is at the forefront of **gene therapy** research, serving as a model for how genetic engineering can potentially eliminate inherited diseases.

## SUBARNAREKHA RIVER:

The Indian Army safely neutralised a high-risk World War II-era bomb weighing approximately 227 kg recovered from the Subarnarekha River in East Singhbhum.


**About Subarnarekha River:**

- The Subarnarekha is a major rain-fed river in eastern India, known as the lifeline of the tribal communities in the Chhota Nagpur region. Its name is derived from the Sanskrit words *Subarna* (gold) and *Rekha* (line/streak), referring to the tradition of finding gold particles in its sandy bed.

**Origin:** It originates near **Piska/Nagri**, close to Ranchi, the capital of Jharkhand.
**States it Flows Through:** The river traverses three Indian states: **Jharkhand, West Bengal, and Odisha**.
**Mouth:** After flowing for a total length of 395 km, it joins the **Bay of Bengal** near Talsari in Odisha.
**Tributaries:** The river is fed by several prominent tributaries, the most significant being the **Kharkai**, which meets the Subarnarekha at a confluence known as **Domuhani** in Jamshedpur.
**Other tributaries include:**

- Roro and Kanchi
- Harmu Nadi and Damra
- Karru and Chinguru
- Karakari, Gurma, and Garra
- Singaduba, Kodia, Dulunga, and Khaijori.

**Key Geological Features:**

- **Hundru Falls:** Created where the river falls from a height of **98 metres (322 ft)**. Constant erosion has carved spectacular rock formations at the base of the falls.
- **Drainage Basin:** The river covers a relatively small drainage area of **18,951 square kilometres**, yet it is a critical multi-state basin.
- **Mining Zones:** The river passes through regions rich in **copper and uranium ores**, which significantly influences the chemical composition of its sediment.
- **Flood Hazards:** The lower reaches, particularly in Odisha and West Bengal, are prone to flash floods. In 2007, the river reached a record flood level of **12.2 metres**.

**Significance:**

- Historically, gold was mined near its origin, and the riverbed continues to be a site for gold panning by local communities.

- It supports major industrial hubs, most notably the city of **Jamshedpur**, India's first planned industrial city.

## WORLD EARTH DAY 2026

World Earth Day 2026 is being celebrated on April 22 with the global theme Our Power, Our Planet, emphasizing collective environmental responsibility and sustainable action.

**About** World Earth Day 2026**:**
**What it is?**

- World Earth Day is an annual global environmental event observed every year on **22 April** to raise awareness about environmental protection, climate action, biodiversity conservation, and sustainable development.

- It was first celebrated in **1970** in the United States and has now grown into one of the world's largest civic observances involving over 190 countries.

**Aim:**

- To encourage individuals, governments, and institutions to adopt sustainable practices for protecting ecosystems and natural resources.

- To strengthen global action against climate change, pollution, deforestation, and biodiversity loss through collective participation.

**Theme (2026):** Our Power, Our Planet
**Key Features:**

- A special lecture titled *Exploring Antarctica: A Journey to the White Continent* by distinguished ISRO professor Dr. Amitava Sen Gupta focuses on polar science, climate systems, and Antarctic research.

- Conducted to test students' understanding of biodiversity, climate science, and environmental sustainability while promoting scientific curiosity.

- Events like exhibitions, seminars, plantation drives, and science outreach programs are organized globally to strengthen environmental consciousness.

**Significance:**

- Earth Day acts as a major global platform to connect environmental protection with public participation, making sustainability a people-driven movement.

- It supports long-term climate resilience by encouraging scientific awareness, green innovation, and responsible environmental governance.

## ADI SHANKARACHARYA

Prime Minister of India paid tribute to Adi Shankaracharya on his Jayanti, celebrating the 1,200th birth anniversary of the philosopher-saint.

**About** Adi Shankaracharya**:**

- Adi Shankaracharya (approx. 788–820 CE) was a philosopher, theologian, and saint who is credited with reviving Hinduism at a time when it was declining under superstition and ritualism.
- Born in **Kalady, Kerala**, he lived a short but miraculous life of only 32 years, during which he traveled the length and breadth of India to spread the message of the Vedas.

**Early Days and Quest for Knowledge**

- **Guru Search:** At the age of eight, driven by a desire for liberation, he left Kerala and walked 2,000 kilometers to the banks of the Narmada to find his Guru, **Govindapada**.
- **Prodigious Scholar:** Under his Guru's guidance, he mastered the Vedic scriptures by age twelve and completed all his major commentaries by the age of sixteen.

**Philosophical Contribution:**

- Advaita Vedanta **(Non-Dualism)**: Shankaracharya's core philosophy is summarized in the statement: ***Brahma Satyam Jagan Mithya, Jeevo Brahmaiva Na Para***(Brahman is the only Truth, the world is unreal, and there is no difference between the individual self and Brahman).
- **Concept of Oneness:** He taught that the *Atman* (soul) and *Brahman* (Universal Consciousness) are one and the same.
- **Maya:** He explained the world's perceived reality as *Maya* (illusion), which disappears once true knowledge (*Jnana*) is attained.
- **Harmony of Worship:** He introduced the Shanmata system, organizing the worship of six primary deities (Siva, Vishnu, Shakti, Ganesha, Muruka, and Surya) to unify diverse Hindu sects.

**Literary and Organizational Works:**
Shankaracharya was a prolific writer and a brilliant organizer who restructured the spiritual landscape of India.

- **Commentaries (*Bhashyas*):** He wrote fundamental commentaries on the **Prasthanatrayi**—the Brahma Sutras, the Bhagavad Gita, and 12 major Upanishads.
- **Devotional Poetry:** He composed over 72 hymns, including *Soundarya Lahari*, *Sivananda Lahari*, and the famous *Nirvana Shatakam*.
- **Treatises:** Authored 23 books on Advaita philosophy, such as *Viveka Chudamani*and *Atma Bodha*.
- **Establishment of the Four Amnaya Maths:** To preserve the Vedas, he established four primary monasteries in the four corners of India:

| Direction | Place | Math Name | Veda |
|---|---|---|---|
| North | Badrinath | Jyotir Math | Atharva Veda |
| South | Sringeri | Sringeri Math | Yajur Veda |
| East | Puri | Govardhan Math | Rig Veda |
| West | Dwaraka | Sarada Math | Sama Veda |

**Significance:**

- By establishing Maths in the extreme north, south, east, and west, he created a spiritual security grid that unified India culturally and geographically.
- He successfully debated and defeated various leaders of opposing sects, replacing ritualism with the intellectual path of *Jnana* (knowledge).
- He organized monks into the **Dasanami Sampradaya** (ten names), ensuring a structured order of wandering teachers to educate the masses.

## INDIA-AFRICA FORUM SUMMIT (IAFS)

India is set to host the Fourth India-Africa Forum Summit (IAFS) 2026 in late May, marking the first such gathering in over a decade since 2015.


**About** The India–Africa Forum Summit (IAFS)**:**

**What it is**?

- The India–Africa Forum Summit (IAFS) is the official institutional platform for **African-Indian relations**. It serves as a high-level consultative mechanism between the Government of India and the member states of the African Union **(AU)** to promote South-South cooperation.

**Established In:**

- **First Summit:** April 4–8, 2008, in New Delhi, India.

**Aim:**

- To widen and deepen the ambit of mutual cooperation for the benefit of both regions.
- To support Africa in health, education, and human resource development through initiatives like the IIT Madras campus in Zanzibar.
- To move beyond traditional trade and Line of Credit models toward direct Foreign Direct Investment (FDI) and industrial partnerships.

**History of Summits**

1. **2008 (New Delhi):** The inaugural meeting between India and 14 African countries chosen by the AU. It focused on rising oil and food prices.
2. **2011 (Addis Ababa, Ethiopia):** Held at the AU headquarters, this summit expanded the partnership's scope to include 15 African nations and focused on infrastructure development.
3. **2015 (New Delhi):** The largest-ever turnout, involving delegates from all 54 African nations. It was a major diplomatic outreach by the Modi government to solidify India's presence on the continent.

**Functions of the IAFS:**

- **Developmental Initiatives:** Implementation of projects in the agricultural sector, information and communication technology (ICT), and industry.
- **Diplomatic Expansion:** Providing a platform to take stock of India's growing diplomatic footprint; India has opened **16 new missions** in Africa since 2018, totaling 45 missions.
- **Security & Defense:** Discussing peace, security, and defense cooperation to ensure a stable maritime and continental environment.
- **Policy Harmonization:** Aligning positions on global issues like trade protectionism, good governance, and civil society promotion.
- **Resource Management:** Coordinating on the supply of critical items and ensuring stable supply chains even during regional conflicts.

**Significance:**

- The 2026 summit is critical as it occurs during a time of global supply chain disruptions caused by the U.S.-Israel-Iran conflict, highlighting Africa's role as a stable resource partner.
- It marks a transition from donor-recipient relations to partner-investor relations, with a push for Indian big business to step in with FDI.

## UNITED NATIONS RESOLUTION 47

On April 21, 1948, the United Nations adopted Resolution 47, a document that fundamentally changed the trajectory of the Jammu and Kashmir conflict.

**About** Resolution 47 on Kashmir**:**

**What it is**?

- Resolution 47, formally titled The India-Pakistan Question, is a UN Security Council (UNSC) resolution that recommended a three-step process to restore peace and conduct a plebiscite in Jammu and Kashmir. It was passed under **Chapter VI** of the UN Charter, meaning its provisions were recommendations rather than legally binding directives.

**Background:**

- **The Invasion:** In October 1947, tribal raiders supported by Pakistan invaded J&K. Maharaja Hari Singh acceded to India to seek military help.
- **The Reference:** By January 1948, despite military gains, India feared a full-scale war. On the advice of Lord Mountbatten, Prime Minister Nehru approached the UN.
- **India's Expectation:** New Delhi's request was specific: ask Pakistan to stop assisting the invaders and deny them use of its territory. India believed its legal case (based on the Instrument of Accession) was foolproof.

**Aim of the Resolution:**

The primary aim was to stop the fighting and establish a democratic mechanism to decide the state's future. The resolution outlined a **three-step sequence**:

1. **Withdrawal by Pakistan:** Pakistan was to use its best endeavors to secure the withdrawal of tribesmen and Pakistani nationals.
2. **Withdrawal by India:** Once the Commission was satisfied that the invaders were withdrawing, India was to progressively reduce its forces to the minimum required for law and order.
3. **The Plebiscite:** A UN-nominated Plebiscite Administrator would then conduct a free and impartial referendum to decide whether J&K would accede to India or Pakistan.

**Key Events:**

- **The Rebranding:** In a significant symbolic blow to India, the UNSC changed the agenda from the Jammu and Kashmir question to the **India-Pakistan question**, effectively treating the two as equal parties in a territorial dispute.
- **Cold War Interests:** The US and UK, led by British delegate Philip Noël-Baker, appeared to favor Pakistan. Strategically, Pakistan was seen as a more useful ally against the Soviet Union.
- **Nehru's Betrayal:** Nehru felt the British had reneged on their promises. He famously remarked that the UN's handling of the issue had opened the eyes of India a bit regarding the realities of international diplomacy.

**Implications and Legacy**

- The plebiscite was never held because the first step—complete withdrawal of Pakistani forces—was never fulfilled. India maintained that the referendum could only happen once the soil was cleared of invaders.

- Critics argue that Nehru's decision to go to the UN internationalized a bilateral issue, giving third parties a permanent seat at the table.
- The Simla Agreement **(1972):** Following the 1971 war, India and Pakistan signed the Simla Agreement, agreeing to resolve all issues bilaterally, which India interprets as a move that superseded the UN resolutions.

## SAMRIDDH GRAM INITIATIVE:

India's Samriddh Gram initiative has been nominated for the prestigious WSIS Prizes 2026 in the Enabling Environment category.

**About Samriddh Gram Initiative:**

**What it is?**

- Samriddh Gram is an integrated phygital service delivery model designed by the **Department of Telecommunications (DoT)**. It utilizes the high-speed broadband backbone of **BharatNet** to transform rural connectivity into a platform for essential social and economic services.

**Launched In:** The initiative was active in its pilot phase by 2024–25, with the first Samriddhi Kendra officially inaugurated by Union Minister in Umri Village, Madhya Pradesh, recently.

Aim:

- To bridge the rural-digital divide by providing one-stop community hubs for essential services.
- To demonstrate the socio-economic impact of integrated service delivery in health, education, and governance.

**Key Features:**

- **Samriddhi Kendras (SK):** One-stop physical centers (800–1000 sq. ft.) that serve as hubs for various digital and assisted services.
- **Healthcare (Telemedicine):** Facilitates teleconsultations through platforms like **e-Sanjeevani** and provides health kiosks for basic diagnostics.
- **Education & Skills:** Equipped with **AR/VR smart classrooms** and labs offering vocational courses from government platforms like Diksha and Swayam.
- **Smart Agriculture:** Deploys IoT sensors for soil monitoring, smart pump controls, and drone-based farming assistance.
- **E-Governance & Commerce:** Provides assisted access to government schemes and connects local entrepreneurs to digital commerce platforms like **ONDC**.
- **Public Safety:** Enhances village security through smart CCTV cameras and drone-based surveillance.
- **Broadband Expansion:** Promotes Fiber-to-the-Home (FTTH) connections and **PM-WANI** public Wi-Fi hotspots for last-mile connectivity.

**About WSIS Prizes 2026:**

**What it is?**

- The **World Summit on the Information Society (WSIS) Prizes** are a global recognition platform that honors innovative projects leveraging Information and Communication Technologies (ICTs) to advance sustainable development.

**Organizations:** International Telecommunication Union (**ITU**).

**Aim:**

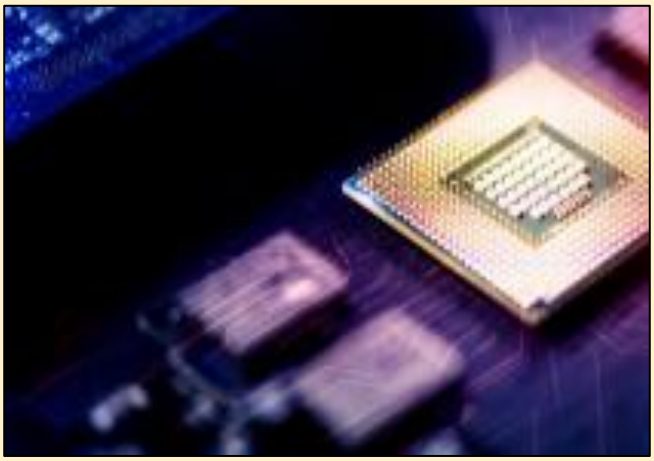
- To celebrate projects that effectively implement **WSIS Action Lines** and contribute to the UN Sustainable Development Goals (SDGs).
- To foster global digital cooperation and share best practices in ICT-driven inclusive growth.

**Key Features:**

- **Multistakeholder Platform:** Brings together governments, academia, civil society, and the private sector to evaluate and collaborate on digital issues.
- **Action Line Categories:** Nominations are categorized into 18 Action Lines; India's Samriddh Gram is nominated under **AL C6: Enabling Environment**.
- **Public Voting Phase:** Winners are determined through a multistakeholder process that includes a public voting phase.

## 3D GLASS CHIP PACKAGING FACILITY

The Indian government has laid the foundation stone for the country's first 3D glass chip packaging facility in Bhubaneswar, Odisha, marking a strategic pivot toward cutting-edge semiconductor technology.



**About 3D Glass Semiconductor Packaging:**
**What it is?**

- It is an advanced form of **3D Heterogeneous Integration (3DHI)** that uses **glass substrates** instead of traditional organic or silicon materials to stack and connect multiple chip components vertically.
- This technology allows different types of chips—such as logic, memory, and sensors—to be combined into a single, highly efficient 3D module.

**Developed By:**

- **Lead Company:** 3D Glass Solutions (3DGS), a US-based firm.
- **Project Location:** Bhubaneswar, Odisha, India.

**Aim:**

- To place India at the cutting edge of global semiconductor technology by mastering advanced packaging.
- To provide a domestic supply of high-performance modules for AI, 5G, defense, and data centers.
- To bypass the physical limitations of **Moore's Law** by increasing computing power through vertical stacking rather than just shrinking transistors.

**How it Works?**

Traditional chips are laid out on a 2D plane. In 3D glass packaging:

1. **Vertical Stacking:** Multiple chiplets (smaller, functional pieces of a chip) are stacked on top of each other.
2. **Glass Substrate:** Glass replaces silicon or plastic as the base. Glass is used because it is more rigid, can handle higher temperatures without warping, and allows for extremely high-speed connections between stacked components.

3. **3D Integration:** Through-glass vias (tiny vertical holes) allow signals to travel vertically between layers, dramatically reducing the distance data has to travel compared to traditional 2D layouts.

**Key Features:**

- **High Precision:** Glass substrates allow for higher-density connections, which is critical for the most advanced semiconductor nodes.
- **Thermal Stability:** Glass effectively manages the heat generated by powerful AI processors, preventing performance throttling.
- **Heterogeneous Integration:** Enables the mixing of different technologies (e.g., combining a high-speed logic chip with a massive memory chip) in a single compact package.
- **Production Scale:** The Odisha plant is designed to produce **70,000 glass panels**and **50 million assembled units** annually.
- **Low Signal Loss:** The electrical properties of glass minimize energy waste, making devices more power-efficient.

**Significance:**

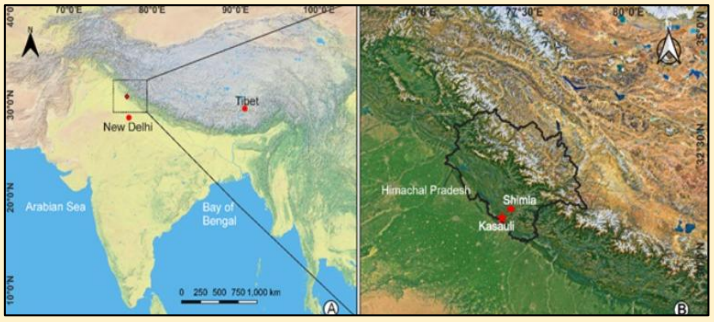
- **Beating Moore's Law:** As shrinking transistors becomes physically impossible, 3D stacking is the primary way the industry continues to increase computing power.

- **Global Tech Map:** This project is unique among India's 10 approved semiconductor plants because it involves **novel technology** that is still being mastered globally, rather than just established manufacturing processes.

- **Strategic Autonomy:** By producing 3DHI modules for defense and AI, India reduces its reliance on high-end imports for its most sensitive technological needs.

## JAMUN CULTIVATION

A pioneering study has established that the Jamun (Syzygium) genus originated approximately 80 million years ago in East Gondwana, with India serving as its primary evolutionary cradle.




**About India Emerges as Cradle of Jamun Evolution:**

**What is Jamun?**

- Jamun, scientifically known as ***Syzygium***, is a genus of flowering plants belonging to the myrtle family, Myrtaceae. It is an ecologically and economically significant plant group, valued for its nutritious fruit, medicinal properties, and timber.

**Evolutionary Timeline and Formation**

- **Ancient Origin:** New research dates the genus back to **~80 million years ago**(Late Cretaceous), originating in the **East Gondwanan** landmass.

- **Indian Diversification:** Contrary to older theories suggesting an Australian origin, fossil evidence indicates India was a major center for early diversification.
- **The Kasauli Breakthrough:** Researchers discovered 11 well-preserved fossil leaves, named ***Syzygium paleosalicifolium***, in the **Kasauli Formation** of Himachal Pradesh, dating back to the Early Miocene (~20 million years ago).
- **Historical Reassessment:** A critical re-examination of Paleogene and Neogene deposits confirms the genus has been continuously present in India since the **Early Eocene (~55 million years ago)**.

### Key Features of the *Syzygium* (Jamun) Genus:

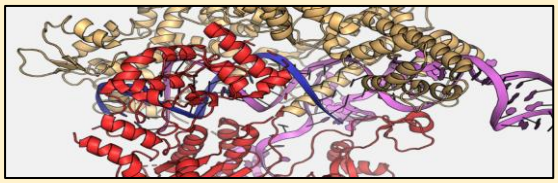
- **Leaf Morphology:** Characterized by specific shapes, sizes, and intricate venation patterns (the arrangement of veins).
- **Venation Architecture:** Scientists analyzed 22 distinct morphological characters, including the density and angle of secondary veins, which are unique to the genus.
- **Adaptability:** The evolutionary timeline indicates the genus survived massive climatic shifts, moving from the Paleogene to the Neogene periods (60 to 20 million years ago).
- **Taxonomic Diversity:** *Syzygium* is one of the most species-rich genera of flowering plants, showing a continuous and resilient presence in the Indian subcontinent for over 50 million years.

### Significance of the Discovery:

- It corrects the misconception that Jamun originated in Australia, establishing India as the primary center of early diversification.
- By understanding how *Syzygium* evolved through past vegetation and climate changes, scientists can improve **predictions for future climate scenarios**.
- Recognizing India as an evolutionary cradle aids in ecological planning and the conservation of native plant species.

## GENETICALLY MODIFIED (GM) MOSQUITOES

A landmark study conducted in Tanzania has confirmed that genetically modified (GM) mosquitoes can effectively block malaria parasites from real-world human infections.



### About Genetically Modified (GM) Mosquitoes:

### What they are?

- Genetically modified mosquitoes are insects whose DNA has been altered using precision engineering tools, such as **CRISPR-Cas9**, to achieve specific biological outcomes.

### Aim:

- To break the cycle of malaria by ensuring mosquitoes can no longer carry or pass the *Plasmodium* parasite to humans.
- To provide a solution where traditional methods, like insecticides and anti-malarial drugs, are failing due to evolving resistance.

### How they are Developed?

- **CRISPR-Cas9 Integration:** Scientists use the CRISPR molecular scissors to insert specific genes into the mosquito genome.
- **Gene Drive Mechanism:** A gene drive is engineered to ensure the modified gene is passed to nearly all offspring (over 90%), rather than the standard 50%.
- **Anti-Parasite Molecules:** In population modification, genes are added that trigger the production of **antimicrobial peptides** or antibodies in the mosquito's midgut to destroy parasites after a blood meal.
- **Sterility Genes:** In population suppression, genes like *doublesex* are targeted to make female offspring sterile, leading to a population collapse.

**Key Features:**

- **Biased Inheritance:** Gene drives bypass traditional Mendelian genetics, allowing a trait to spread rapidly through an entire wild population over a few generations.
- **Target Specificity:** The modifications are typically species-specific (e.g., targeting only *Anopheles gambiae*), theoretically leaving other non-target insects unharmed.
- **Midgut Activation:** The latest models are designed to activate anti-parasite molecules specifically when the mosquito takes a blood meal, maximizing effectiveness at the point of infection.
- **Phased Testing:** Researchers use split gene drives (where components are kept in separate mosquito lines) to test safety and efficacy before creating a fully self-propagating version.
- **Ecological Persistence:** Unlike chemical pesticides that wash away, a successful gene drive persists in the environment as long as the mosquito population exists.

**Significance:**

- The Tanzania study proved these mosquitoes work against wild malaria parasites found in local children, not just weakened laboratory strains.
- Developing this tech in Africa (Tanzania) ensures that endemic countries lead the scientific and regulatory oversight of the tools used in their own backyards.
- Once released, a self-propagating gene drive could potentially cover vast, hard-to-reach areas where traditional healthcare infrastructure is weak.

## LANJIA SAORA COMMUNITY

The Lanjia Saora community is in the news for its resilient efforts to preserve its unique visual heritage, such as traditional metal earrings and tattoos, while adapting these customs to modern lifestyles.

**About The Lanjia Saora Community:**

**Who They Are?**

- The Lanjia Saoras are one of the oldest and most distinct tribes in India, belonging to the **Sauras** ethnic group. They are recognized by the Government of India as a **Particularly Vulnerable Tribal Group (PVTG)** due to their stagnant population, low literacy levels, and traditional agricultural practices.

**Habitat:**

- **Region:** They primarily inhabit the densely forested and hilly terrains of the **Rayagada and Gajapati districts** in southern Odisha.
- **Living Conditions:** They live in **mud-and-thatch homes** scattered across undulating, undulating landscapes, often isolated from mainstream urban centers.

**History and Belief System:**

- **Ancient Origins:** The Saoras find mention in Hindu epics like the *Ramayana*(associated with Shabari) and the *Mahabharata*, marking them as an ancient indigenous lineage.
- **Nature Intertwined:** Their history is rooted in a belief system deeply **intertwined with nature**. Rituals are performed to appease forest deities and ancestral spirits, which they believe govern their harvest and health.

**Key Characteristics:**

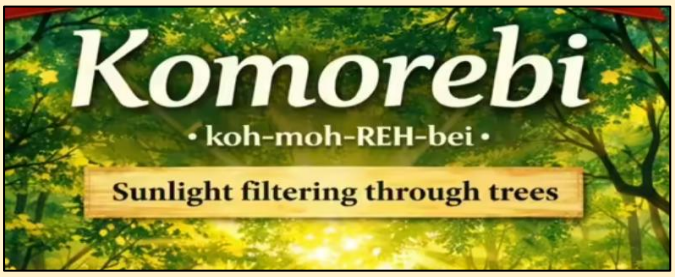
- **Visual Traditions:**
    - **Earrings:** Known for large, **thick circular metal earrings** fixed into stretched earlobes. While the older generation wears them permanently as markers of identity, the youth are transitioning to hooked versions for comfort.
    - **Tattoos:** Intricate geometric patterns or nature-inspired motifs were traditionally etched permanently for spiritual protection.
- **Livelihood:** They sustain themselves through **shifting cultivation** (Podu Chasa), foraging for forest produce, and small-scale farming.
- **Artistic Heritage (Idital):** They are famous for their **Saora paintings** (Idital), which are wall murals made using red ochre and rice paste. These paintings serve as a visual language to communicate with the spirit world.
- **Music and Dance:** Music is intrinsic to their daily life, used during every significant life event, from birth to the Guar (funeral) ritual.
- **Social Structure:** They maintain a highly egalitarian society with a strong sense of communal resource sharing and collective decision-making.

**Significance:**

- The Lanjia Saoras represent a vital link to India's **pre-Vedic indigenous history**and ancient visual languages.
- Their survival is proof of sustainable co-existence with the Eastern Ghats' ecosystem.
- Saora art has gained international recognition, influencing modern Indian textile design and contemporary tribal art.

## KOMOREBI

Japanese word Komorebi has recently gone viral globally, trending across social media platforms for its poetic expression of sunlight filtering through tree leaves.




**About Komorebi:**
**What It Is?**

- **Komorebi** is a beautiful Japanese word that refers to the dappled sunlight that passes through the leaves and branches of trees. It is not merely a visual description, but also captures the emotional calm, serenity, and reflective mood associated with such a moment.

**Origin:**

The word originates from **Japanese language and culture**, where nature deeply shapes vocabulary and aesthetics.

It is derived from three Japanese elements:

- **Ko** → tree
- **More** → to leak / filter
- **Bi** → light

Together, it literally means **light leaking through trees.**

**Features:**

- **Nature-Centric Expression:** It reflects the close relationship between language and natural surroundings in Japanese culture.
- **Untranslatable Beauty:** There is no exact English equivalent, making it an example of a culturally rich untranslatable word.
- **Mindfulness Symbolism:** It is increasingly associated with slow living, calmness, aesthetic minimalism, and emotional healing.

**Significance:**

- **Cultural Significance:** It highlights how language can encode philosophy, perception, and environmental consciousness.
- **Contemporary Relevance:** In today's fast-paced digital life, it symbolizes the need to pause, observe, and reconnect with nature.

## EXERCISE DUSTLIK

The Indian Army contingent has departed for Uzbekistan to participate in the 7th edition of Joint Military Exercise DUSTLIK, scheduled to be held at the Gurumsaray Field Training Area.


**About Military Exercise Dustlik:**

**What it is?**

- Exercise DUSTLIK is a premier annual bilateral military training exercise conducted between the Indian Armed Forces and the Uzbekistan Armed Forces. It serves as a platform for sharing operational experiences and refining combat tactics in diverse environments.

**Host:** Uzbekistan, specifically the **Gurumsaray Field Training Area** in Namangan.
**Nations:** India and Uzbekistan.
**Cycle:** The exercise is held annually, alternating between India and Uzbekistan. The 2025 edition was held in Pune, India.
**Aim:** The primary objective is to foster deep military cooperation and enhance the combined capability of both forces to execute joint operations in **semi-mountainous terrain**. It focuses on improving physical fitness, joint planning, and the synchronization of special arms skills.

**Key Features:**

- **Operational Drills:** The training includes land navigation, strike missions on enemy bases, and the seizure of enemy-held areas.
- **Command & Control Coordination:** It establishes a unified operational algorithm between the command-and-control structures of both nations to ensure seamless joint planning.
- **Tactical Exchange:** Both sides share their Tactics, Techniques, and Procedures (TTPs) and familiarize themselves with each other's operational procedures.
- **Validation Exercise:** The joint training culminates in a intensive **48-hour validation exercise** designed to test tactical drills for neutralizing Unlawful Armed Groups through joint special operations.
- **Inter-Service Participation:** Notably involves both the Army and the Air Force components from both countries to improve inter-service synergy.

**Significance:**

- Central Asia is part of India's extended neighborhood, and DUSTLIK is a vital pillar of India's strategic outreach to Uzbekistan, a key regional player.

- It strengthens the ability of both militaries to work together under a unified command, which is essential for potential future peacekeeping or joint security missions.

## INDIA - SOUTH KOREA PARTNERSHIP

The April 2026 state visit of South Korean President to India marked a major boost in ties after eight years. Both countries adopted a Joint Strategic Vision (2026–30) aiming to double trade to $50 billion by 2030.

The partnership now focuses on technology, supply chains, and Indo-Pacific stability amid global disruptions.

**Strategic & Political Foundations**

- **Shared democratic vision & strategic alignment:** India and South Korea see each other as key partners—aligned through Act East Policy and New Southern Policy, with convergence in the Indo-Pacific via Indo-Pacific Oceans Initiative.
- **Stronger institutional engagement:** Annual leader meetings, a new 2+2 dialogue, and expanded parliamentary exchanges deepen structured cooperation.

**Economic & Trade Cooperation: The $50 Billion Target**

- **CEPA 2.0 for balanced trade:** Upgrade of Comprehensive Economic Partnership Agreement to reduce trade imbalance and expand into digital trade, green economy, and supply chains.
- **New economic & security frameworks:** Industrial Cooperation Committee and Economic Security Dialogue to boost sectors like semiconductors, EV batteries, and ensure resilience in critical minerals and green hydrogen.
- **Digital & financial integration:** Linkage of Unified Payments Interface with Korea's system, plus fintech cooperation for cross-border financial services.

**Defence & Technology: Co-Development and Innovation**

- **Defence manufacturing boost:** Expansion of K9 Vajra collaboration (L&T–Hanwha) with more tech transfer, and exploration of new air defence and missile systems.
- **Innovation in defence:** Launch of Korea-India Defence Accelerator (KIND-X) to link startups, incubators, and investors.
- **Digital & semiconductor cooperation:** India-Korea Digital Bridge on AI and data, with investment push in semiconductors.

**Shipbuilding & Maritime Partnership**

**Comprehensive Framework:**

- A dedicated framework for partnership in shipbuilding, shipping, and maritime logistics was adopted.
- **Greenfield Shipyard:** HD Korea Shipbuilding (HD KSOE) signed a non-binding MoU for joint development of a large greenfield shipyard in Southern India.
- **Ports & Logistics:** MoU on Cooperation in the Ports sector, with ROK aiding in port infrastructure development.

**Energy & Resource Security**

**Joint Statements:**

- Separate Joint Statements on Cooperation in Sustainability and Energy Resource Security were issued.
- Steel Dialogue: Annual India-ROK Steel Dialogue launched, focusing on green steel-making. POSCO and JSW signed an MoU for a 6 MMT Integrated Steel Plant in Odisha.
- Critical Minerals: Cooperation to strengthen supply chains for strategic resources, critical minerals, and rare earths.

**Cultural & People-to-People Ties**

**Ancient Connect:**

- PM Modi invoked the legend of Queen **Heo Hwang-ok** (Princess Suriratna of Ayodhya) who married Korean King Kim Suro in 48 AD, highlighting two millennia of shared heritage.

**Modern Cultural Wave:**

- President Lee noted that "Bollywood movies and Indian cuisine have become part of everyday culture" in Korea, while K-pop and K-dramas are hugely popular in India.
- **Cultural Exchange Programme (2026-2030):** Signed to promote cooperation in film, animation, and gaming.
- **Friendship Year:** 2028-29 will be commemorated as the "Year of India-ROK Friendship".

The April 2026 summit between India and South Korea reset ties from a buyer-seller model to co-development and strategic trust. With goals like $50B trade, Unified Payments Interface integration, and defence collaboration, the real test lies in effective implementation to deliver economic and Indo-Pacific security gains.

## SCARBOROUGH SHOAL

Satellite imagery from April 2026 reveals that China has deployed a floating barrier and multiple vessels to block the entrance of the Scarborough Shoal.


**About Scarborough Shoal:**
**What it is?**

- Scarborough Shoal (known as **Bajo de Masinloc** in the Philippines and **Huangyan Island** in China) is a triangular-shaped chain of reefs and rocks with a central lagoon. It is not an island but a high-tide feature that serves as a traditionally rich fishing ground and a strategic maritime landmark in the South China Sea.

**Location:** Situated in the eastern part of the South China Sea, approximately **120 nautical miles** (222 km) west of the Philippine island of Luzon and about 470 nautical miles from the coast of China.

**Origin:** It is a coral atoll formed on an underwater volcanic mount. Its strategic value lies in its proximity to the Philippine mainland and vital international shipping lanes.

**Nations Involved:**

- **Philippines:** Claims the shoal based on its proximity and its location within the Philippines' 200-nautical-mile **Exclusive Economic Zone (EEZ)** under UNCLOS.
- **China:** Claims the shoal as part of its historical territory under the controversial **Nine-Dash Line** (now often cited through historical rights).
- **Taiwan:** Also maintains a claim over the feature similar to China's.

**Key Issues:**

- **Effective Control vs. Legal Rights:** While a **2016 Permanent Court of Arbitration**ruling invalidated China's expansive claims and noted that the blockade violated international law, China has maintained de facto control since a 2012 standoff.
- **Militarization and Barriers:** China frequently uses Maritime Militia (fishing trawlers) and Coast Guard vessels to install floating barriers, preventing Filipino fishermen from accessing the lagoon.

- **Pretext for Occupation:** The recent establishment of a national nature reserve by China is viewed by Manila as a legal pretext for permanent occupation and potential construction of artificial structures.

**Implications:**

- The shoal is a flashpoint that could trigger the **U.S.-Philippines Mutual Defense Treaty** if a confrontation turns into an armed attack on Philippine vessels.
- The persistent blockade deprives local Filipino fishing communities of their traditional livelihoods, leading to economic distress in coastal provinces like Zambales.
- Diplomats fear China may escalate presence at the shoal while the U.S. is preoccupied with conflicts in the Middle East, testing the limits of the Manila-Washington alliance.

## RELIEF SCHEME

The Government of India has expanded the geographical coverage of the RELIEF (Resilience & Logistics Intervention for Export Facilitation) scheme to include Egypt and Jordan.


**About The RELIEF Scheme:**

**What it is?**

- RELIEF is a time-bound, targeted intervention launched to mitigate the financial and logistical risks faced by Indian exporters due to geopolitical tensions in West Asia. It acts as a financial buffer against extraordinary war-risk surcharges, freight hikes, and insurance spikes that threaten the competitiveness of Indian goods.

**Launched In:** The scheme was officially launched on **March 19, 2026**, as part of the **Export Promotion Mission (EPM)**.

**Nodal Agency:** ECGC Limited (formerly Export Credit Guarantee Corporation of India).

**Aim:**

- To prevent order cancellations and safeguard employment in export-linked sectors during maritime crises.
- To provide surety and confidence to exporters, especially MSMEs, allowing them to continue shipments to high-risk zones.
- To stabilize the financial burden on exporters by covering the gap between normal and conflict-era logistics costs.

**Key Features:**

The scheme is structured into three complementary components with a total financial outlay of **₹497 Crore**:

- **Component I (Enhanced Cover for Insured Exporters):**
  - For existing ECGC policyholders, it provides up to **100% risk coverage** for war-related and political losses.
  - Premiums are frozen at **pre-disruption rates**, with the government absorbing the additional risk cost.
- **Component II (Facilitating New Coverage):**
  - Encourages new exporters to obtain ECGC cover for upcoming shipments with a **95% risk coverage** backstop.
  - Recently clarified to include those obtaining a fresh **ECGC Whole Turnover Policy** on or after March 16, 2026.

- **Component III (Reimbursement for Non-Insured MSMEs):**
    - Provides a **50% reimbursement** of extraordinary freight and insurance surcharges (e.g., War Risk Surcharge).
    - Capped at **₹50 Lakh per exporter** to ensure wide distribution of benefits.
- **Eligible Destinations:** Now covers UAE, Saudi Arabia, Kuwait, Qatar, Oman, Bahrain, Iraq, Iran, Israel, Yemen, Egypt, and Jordan.

**Significance:**

- It ensures that India's export momentum is not derailed by regional conflicts or the closure of critical chokepoints like the **Strait of Hormuz**.
- By reimbursing 50% of logistical surcharges, it protects the narrow profit margins of smaller businesses that are most vulnerable to shipping volatility.

## COLORADO RIVER

Recent study by the University of Washington has explained why billions of litres of water from the Colorado River are disappearing before reaching major reservoirs like Lake Mead and Lake Powell.


**About The Colorado River:**

**What it is?**

- The Colorado River is a 1,450-mile-long (2,330 km) river known as the Lifeblood of the American Southwest. It is the principal freshwater artery for one of the most arid regions in North America, supplying water for municipal use, hydropower, and irrigation to 40 million people.

**Located in:**

- **Origin:** The river originates at the Continental Divide at **La Poudre Pass** in Rocky Mountain National Park, Colorado, at an elevation of 10,000 feet.
- **Location:** It occupies an area of approximately 250,000 square miles across seven U.S. states and two Mexican states.

**States and Regions It Flows Through:**

- **Upper Basin States:** Colorado, New Mexico, Utah, and Wyoming.
- **Lower Basin States:** Arizona, California, and Nevada.
- **International:** It flows into northwestern Mexico through the Sonoran Desert before reaching its mouth at the Gulf of California.

**Tributaries:**

- **Upper Basin:** The Green (its largest tributary), Gunnison, San Juan, Dolores, and Roaring Fork rivers.
- **Lower Basin:** The Gila, Little Colorado, Virgin, and Bill Williams rivers.

**Key Features of the River**

- **Grand Canyon:** The river is the primary architect of the **Grand Canyon**, having carved its path through millions of years of geological layers.
- **Horseshoe Bend:** A world-famous entrenched meander near Page, Arizona, where the river makes a 270-degree turn in a 1,000-foot-deep canyon.

- **Major Reservoirs:** Home to **Lake Mead** (formed by Hoover Dam) and **Lake Powell**(formed by Glen Canyon Dam), the two largest man-made reservoirs in the U.S..
- **The Law of the River:** A complex collection of compacts, federal laws, and treaties (notably the 1922 Colorado River Compact) that govern its water allocation.

**Why the Water is Vanishing?**

Recent scientific breakthroughs have shifted the blame from simple evaporation to a complex ecological siphoning effect:

- **Aridification:** Rising temperatures are permanently reducing flows through a transition from drought to a state of chronic dryness.
- **Biological Pumps:** Warmer, drier springs cause mountain vegetation (from wildflowers to high-elevation forests) to wake up earlier and draw moisture directly from the melting snowpack before it can reach the river.
- **Clear Sky Effect:** Clearer skies and increased solar radiation enhance the thirst of plants, which use snowmelt as a primary food and cooling supply.
- **Vapour Pressure Deficit:** A warmer atmosphere pulls even more moisture from the soil and snow, leaving only 50% of anticipated runoff even when snowpack is at 100% of normal.

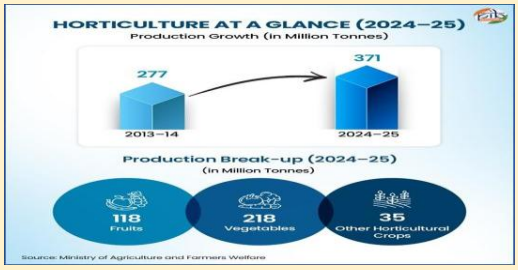
## HIGH-VALUE CROP DIVERSIFICATION

The **Union Budget 2026-27** has introduced a crop-specific, regionally differentiated strategy to accelerate the diversification into **high-value crops** across India's coastal, North Eastern, and Himalayan regions.

**About Accelerating India's High-Value Crop Diversification:**

**What are High-Value Crops?**

- High-value crops (HVCs) primarily refer to horticultural produce such as fruits, vegetables, flowers, spices, medicinal, and aromatic plants. They are termed high value because they generate significantly higher net returns per unit of land compared to traditional staple crops like cereals (wheat/rice) and pulses.




**Data and Statistics on High-Value Crops**

- **Coconut Leadership:** India ranks **second globally** in coconut production (22.44% of world total), supporting the livelihoods of approximately **30 million people**.
- **Export Strength:** In 2024-25, cashew exports reached **USD 369.17 million**, while cocoa exports stood at **USD 295.58 million**.
- **Horticulture Output:** Total horticultural production grew to **370.74 million tonnes** in 2024-25, far outstripping previous decades.
- **Agarwood Dominance:** India hosts nearly **150 million agarwood trees**, with **90%**concentrated in the North Eastern states, particularly Tripura and Assam.

**Horticulture as a Driver of Agricultural Growth**

- **Economic Nucleus:** Horticulture accounts for approximately **37% of the Gross Value Output (GVO)** within the agricultural crops sub-sector.
- **Global Standing:** India is the **world's largest producer** of onions and shallots (22.42% of global share) and ranks second in vegetables, fruits, and potatoes.
- **Productivity Growth:** Over the last decade, the sector has grown at **4.45%**, the highest rate compared to traditional agriculture.

- **Nutritional Security:** Beyond income, HVCs provide essential vitamins and minerals, fuelling the agro-processing industry and improving national nutrition.

- **Employment Engine:** These crops are labour-intensive, creating significant local employment opportunities in rural and tribal areas.

**Regionally Anchored Strategies:**

- **Coastal Regions (Coconut, Cashew, Cocoa, Sandalwood):** Focused on replacing aging trees with high-yielding varieties and promoting Indian Cashew as a premium brand.
- **North Eastern Region (Agarwood):** Leveraging the Oud market with a potential **₹2,000 crore annual turnover** in Tripura through sustainable cultivation and CITES-aligned export quotas.
- **Himalayan/Hilly Regions (Walnuts, Almonds, Pine Nuts):** Promoting high-density cultivation of Chilgoza (Pine nuts) and walnuts to boost tribal incomes in J&K and Himachal Pradesh.
- **Intercropping Models:** Promoting cocoa as an intercrop in coconut and arecanut plantations to utilize 40-50% sunlight penetration and provide extra income.
- **Institutional Support:** Utilizing bodies like the **Coconut Development Board** and **Directorate of Cashewnut and Cocoa Development** to modernize nurseries and train women in value addition.

**Challenges Associated with Diversification:**

- **High Initial Investment:** Transitioning to high-value perennials like sandalwood or agarwood requires significant capital and a long gestation period.

- **Perishability:** Unlike cereals, horticultural crops have a **short shelf-life**, necessitating advanced cold-chain infrastructure to prevent post-harvest losses.

- **Climate Vulnerability:** High-value crops in hilly regions (like walnuts and almonds) are highly sensitive to shifting snowfall patterns and temperature spikes.
- **Fragmented Landholdings:** Nearly **10 million coconut farmers** operate on small plots, making it difficult to achieve economies of scale for processing.
- **Quality Standardization:** Meeting stringent international phytosanitary standards remains a hurdle for Indian HVCs to penetrate high-end markets in the EU and USA.

**Way Ahead:**

- Infrastructure Integration: Strengthening Post-Harvest Management (PHM)through the Mission for Integrated Development of Horticulture (MIDH) to reduce losses.
- Brand Building: Positioning Indian Sandalwood and Indian Cocoa as premium global brands by 2030 to command higher international prices.
- Farmer Producer Organizations (FPOs): Facilitating more Coconut and Cashew FPOs to organize fragmented sectors and improve bargaining power.
- Digital Mapping: Expanding the use of geospatial mapping for agarwood and high-density nut orchards to monitor growth and yield accurately.
- Rural Youth Participation: Encouraging rural youth and startups to engage in value-added processing (e.g., virgin coconut oil or fermented cocoa) to create a Gaon to Global value chain.

India's shift toward high-value crop diversification represents a move from subsistence farming to a commercially viable, export-oriented agricultural economy. By leveraging regional agro-climatic strengths through the Union Budget 2026-27, India is laying the foundation for a **Viksit Bharat** where farmers are global entrepreneurs.

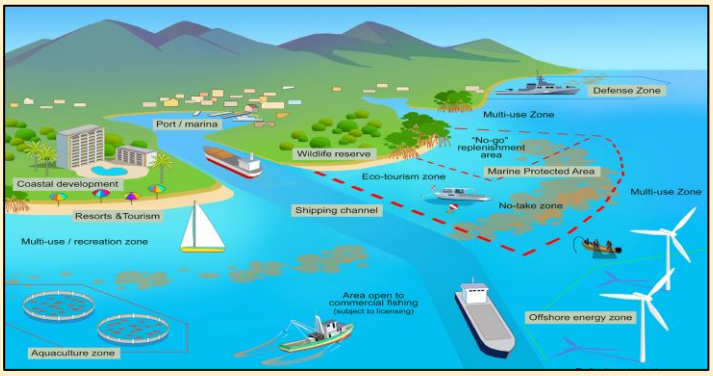
## MARINE SPATIAL PLAN

- Odisha has become the **first state in India** to launch a **Marine Spatial Plan (MSP)** under the second phase of the India-Norway sustainable ocean management initiative
- The state government signed an **MoU with the National Centre for Coastal Research (NCCR)** under the Ministry of Earth Sciences for implementation
- First phase (2021-2022) was implemented in **Puducherry and Lakshadweep**

**What is Marine Spatial Planning (MSP)?**

**UNESCO-IOC definition:**

- A **public process** of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve **ecological, economic, and social objectives** specified through a political process.




**Key Features**

- **Data-driven planning tool** that maps marine areas and allocates zones for activities such as fishing, tourism, shipping, conservation, and energy projects
- Balances **economic growth with environmental protection**
- Promotes **sustainable use of marine resources**
- Supports development of **Blue Economy**

**Why Odisha Needs MSP**

- **Rich but sensitive coast:** ~574 km coastline with lagoons, mangroves, and estuaries supporting high biodiversity.
- **Rising development pressure:** Industry, tourism, and ports increasing resource conflicts—needs balanced growth.
- **High climate risk:** Frequent cyclones and sea-level rise demand adaptive coastal planning.

**Implementation Details**

- **Scientific mapping (NCCR):** Study coastal waters off Odisha—benthic mapping, salinity, temperature—and identify zones for tourism, fisheries, and seaweed/seagrass cultivation.
- **Policy & governance:** Data-driven policymaking to support multi-sector coastal development and stakeholders.

**India-Norway Collaboration**

- India–Norway **Integrated Ocean Initiative (2019)**: pilot phase (2021–22) in Puducherry & Lakshadweep with ~₹8–10 crore/year funding.
- Expansion phase (2026): Odisha as first full-scale state; backed by MoES with support interest from World Bank & UNEP.

**Strategic Significance**

**Blue Economy Alignment**

- Aligns with Centre's emphasis on **Blue Economy as one of ten core dimensions of growth** (New India by 2030 vision)
- Supports sustainable ocean resources utilisation for economic and social development

**Static-Dynamic Linkage**

**Static (Geography / Economy Syllabus)**

- **Blue Economy:** One of ten core dimensions of India's growth (New India 2030 vision)
- **Coastal Regulation Zone (CRZ):** Regulated under Environment Protection Act, 1986
- **India's coastline:** 7,516 km (mainland: 5,422 km; island territories: 2,094 km)
- **Odisha coastline:** ~550 km (3rd longest among Indian states after Gujarat and Andhra Pradesh)

**Dynamic (Current Affairs – April 2026)**

- **First state to implement MSP** – Odisha leads in integrated ocean planning
- **Phase I (2021-22):** Puducherry, Lakshadweep (UTs)
- **Phase II (2026):** Odisha (first state)
- **International collaboration:** India-Norway (2019 MoU)
- **Climate resilience:** MSP as tool for adaptation in cyclone-prone region

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