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Monthly Current Affairs Magazine

16TH FINANCE COMMISSION

16th Finance Commission pushes urbanisation agenda while tightening fiscal discipline for local bodies



About 16th Finance Commission:

- **Nature:** The Finance Commission is a **constitutional body established under Article 280** to define the financial relations between the Union and the States.
- **Composition:** It was **chaired by Dr. Arvind Panagariya**. The full-time members include Shri Ajay Narayan Jha, Smt. Annie George Mathew, and Dr. Niranjan Rajadhyaksha.
- **Mandate:** The 16th FC's mandate was to **recommend the vertical share of taxes for states and the horizontal formula to distribute those funds** among them for the five-year award period starting April 1, 2026.
- **Key recommendations of the 16th Finance Commission:**
 - **Vertical Devolution:** The Commission recommended **retaining the States' share of the divisible pool of central taxes at 41%**, which the Union Government has officially accepted.
 - **Horizontal Devolution Formula:** It introduced a major shift toward rewarding economic performance by **adding a 10% weight for "Contribution to GDP"** (replacing the previous tax effort criterion).
 - **Grants-in-Aid:** It recommended total grants of ₹9.47 lakh crore over five years, **specifically for local bodies (₹8 lakh crore) and disaster management (₹2.04 lakh crore)**.
 - **Fiscal Roadmap:** It recommended the **Centre reduce its fiscal deficit to 3.5% of GDP by 2030-31**. It also recommended a ceiling of 3% of GSDP for state fiscal deficits and proposed a strict ban on off-budget borrowings by states.

Key challenges:

- **Stagnant Devolution Share:** The Commission **retained the states' share of central taxes at 41%, despite several states demanding an increase to 50%** to meet rising welfare and infrastructure costs.
- **Cesses and Surcharges:** A primary "bone of contention" is the **rising use of cesses and surcharges by the Centre**. These now account for nearly 20% of the Gross Tax Revenue but are not shared with states, effectively shrinking the divisible pool.

- **Declining Effective Transfers:** While the **statutory rate is 41%**, the **effective transfer ratio** (devolution plus grants) is **projected to decline to about 32.7%** in 2026–27.
- **New “Contribution to GDP” Weight:** Introducing a 10% weight for a state’s contribution to GDP **favours industrialised, richer states** (e.g., Tamil Nadu, Karnataka). This has reduced the weight of Income Distance (from 45% to 42.5%), potentially hurting poorer states like Bihar and Uttar Pradesh.
- **Demographic Shifts: Southern states face a “demographic penalty”** as lower population growth—resulting from successful family planning—reduces their share under population-based criteria. There are also rising costs associated with an aging population in these states.

● **Way Forward:**

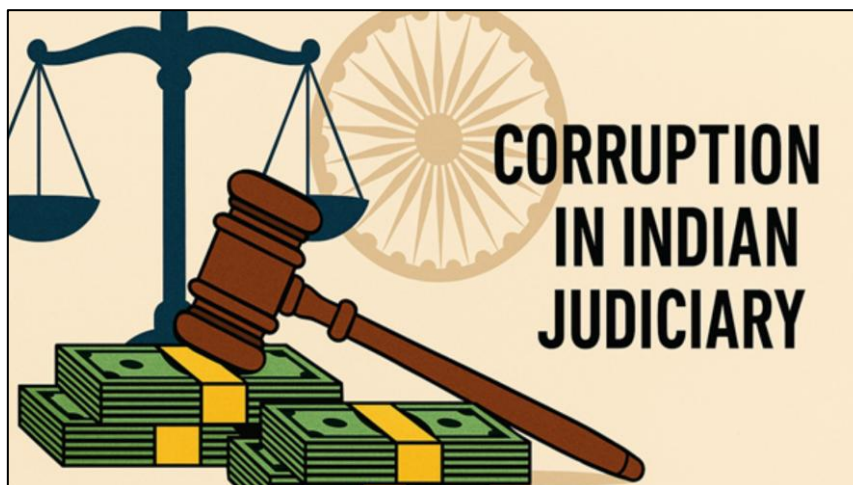
- **The “Grand Bargain”:** A primary proposal is for **states to accept the current 41% share in exchange for the Centre merging cesses and surcharges** into the shareable tax base.
- **Capping Levies:** Implementing a **statutory cap on cesses and surcharges**(e.g., at 10% of Gross Tax Revenue) to ensure they remain temporary and do not permanently erode the states’ share.
- **Transparency:** Requiring **annual disclosure of CAG-certified data** on net tax proceeds to give states a clear view of the actual funds available for devolution.
- **Strict Deficit Management:** Enforcing a **3% GSDP fiscal deficit cap for states and a 3.5% GDP cap for the Centre** by 2030–31.

Eliminating Off-Budget Borrowing: Strictly discontinuing the practice of borrowing through state-owned entities **to hide true debt levels.**

- **Subsidy Rationalisation:** Introducing **sunset clauses and clear exclusion criteria** for unconditional cash transfers to ensure they target the truly needy without straining budgets.

JUDICIAL CORRUPTION

Judicial corruption refers to the abuse of judicial power for private gain, manifesting as bribery, nepotism, political interference, or the manipulation of court records. In the Indian context, it represents a significant threat to the **Rule of Law** and the public’s faith in the impartiality of the third pillar of democracy.



Data Points on Judicial Corruption:

- **Massive Case Pendency (Catalyst):**
 - As per the National Judicial Data Grid (March 2026), total pending cases have crossed 5.2 crore.
 - Over 62% of cases are pending for more than one year, creating incentives for speed money to influence listings and hearings.
- **WJP Rule of Law Index (2025):**
 - In the World Justice Project Rule of Law Index 2025, India scores below the global median in the Absence of Corruption in the Judiciary indicator.
 - India's overall ranking remains around 77-79 out of 142 countries.
- **Transparency International Survey (2025):**
 - Around 20-25% of respondents interacting with district and sessions courts reported paying a bribe or using influence to process legal paperwork.
- **CVC Administrative Complaints (2025):**
 - The Central Vigilance Commission Annual Report 2025 recorded a 15% rise in complaints against court registry and clerical staff for illegal gratification related to filing and case numbering.
- **Bench Hunting Scam (2025)**
 - A High Court vigilance probe uncovered a racket where lawyers and registry officials manipulated case-listing systems to route cases to favorable benches.
- **Lower Judiciary Disciplinary Actions (2025):**
 - 12 judicial officers across three states were suspended or compulsorily retired following inquiries into disproportionate assets and questionable bail orders.

Constitutional Articles and Laws Associated

Constitutional Articles:

- **Article 124(4) & 217:** Provides the procedure for the **removal of judges** of the Supreme Court and High Courts on the grounds of proved misbehaviour or incapacity.
- **Article 235:** Grants the High Court administrative control over subordinate courts, including the power to take disciplinary action against judicial officers.
- **Article 50:** Directs the State to separate the judiciary from the executive, intended to prevent political corruption and ensure independence.
- **Article 227:** Power of superintendence over all courts by the High Court to ensure they function within the bounds of law and ethics.

Relevant Laws:

- **Judges (Inquiry) Act, 1968:** Regulates the procedure for the investigation and proof of misbehaviour of a judge of the Supreme Court or a High Court.
- **Prevention of Corruption Act, 1988:** Applies to judicial officers as public servants, though the Supreme Court's *Veeraswami case (1991)* mandated prior sanction from the Chief Justice of India before registering an FIR against a superior court judge.

Challenges Associated with Judicial Integrity:

- **The Opaque Collegium System:** Lack of transparency in the appointment of judges can lead to allegations of Uncle Judge syndrome or nepotism.

Example: In 2024-25, several petitions in the Supreme Court challenged the non-disclosure of internal deliberations regarding judicial elevations, citing a lack of meritocratic clarity.

- **Absence of an Internal Accountability Mechanism:** There is no statutory body to investigate complaints against superior judges, leaving a vacuum between internal peer review and the extreme step of impeachment.

Example: The long-pending **Judicial Standards and Accountability Bill** has not been enacted, leaving the 1997 Values of Judicial Life as mere voluntary guidelines.

- **Post-Retirement Appointments:** The quid pro quo fear where judges might favor the government in anticipation of lucrative administrative or political posts after retirement.

Example: Recent appointments of retired judges to **Rajya Sabha** or as **Governors** within months of retirement have sparked ethical debates regarding judicial independence.

- **Administrative Corruption in Registry:** Middlemen and court clerks often act as conduits for bribery to manipulate bench hunting or case listings.

Example: In late 2025, a High Court in North India suspended several registry staff members following an expose on money-for-listing scams.

- **Shield of Contempt of Court:** The threat of Contempt is often perceived as a barrier to honest criticism or whistleblowing regarding judicial misconduct.

Example: The **NCERT controversy itself** highlights how mentioning corruption in textbooks can be viewed as scandalizing the court, leading to a blanket ban on educational content.

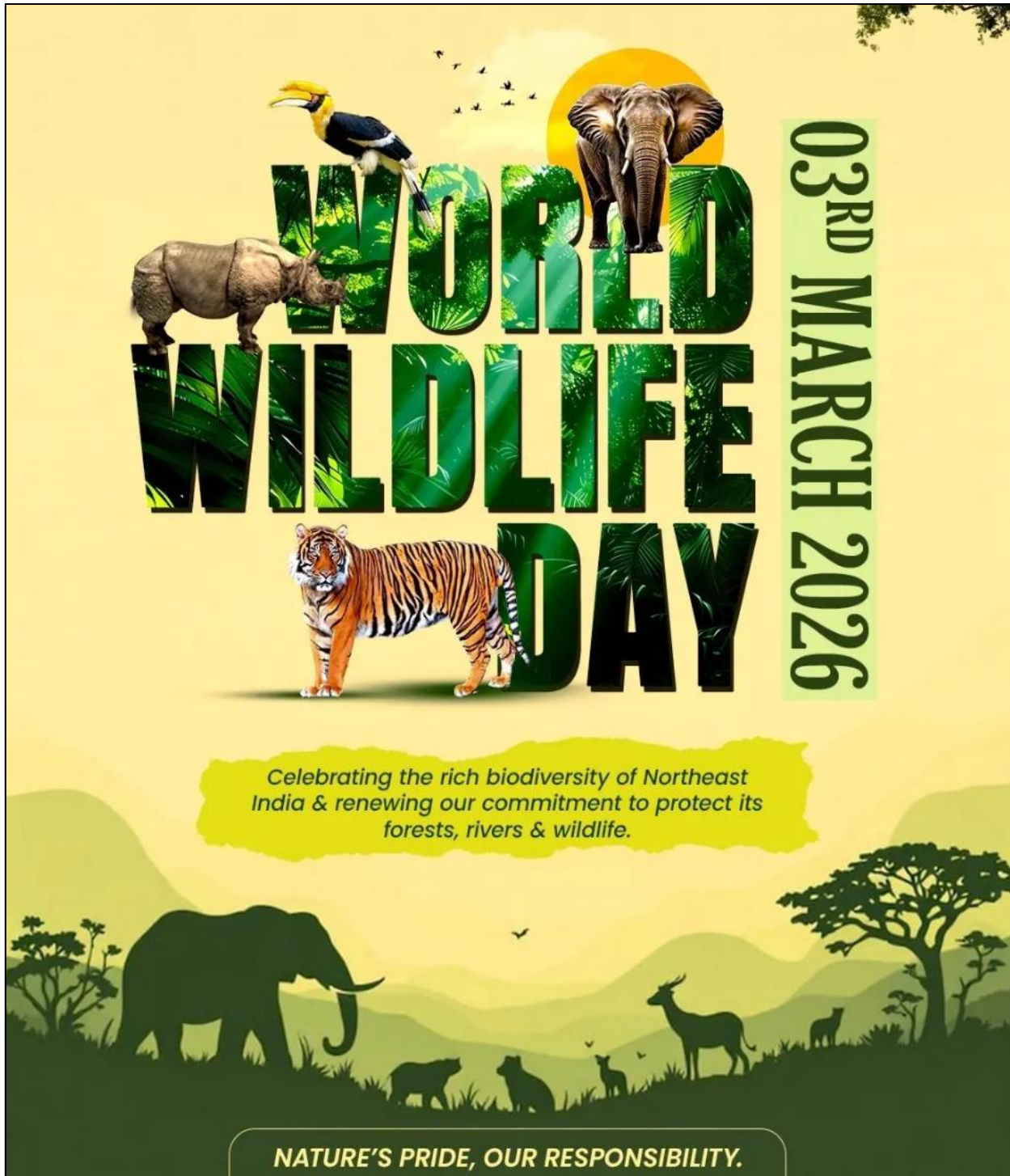
Way Ahead:

- **Enactment of Judicial Accountability Law:** Pass a robust Judicial Standards and Accountability Bill to create a permanent mechanism for investigating complaints against judges without undermining their independence.
- **Digitization (Phase III of E-Courts):** Fully automate case listing and filing through AI-driven systems to eliminate the human interface where bribery occurs in the registry.
- **National Judicial Appointments Commission (NJAC) 2.0:** Establish a transparent, bipartisan body for appointments that balances executive input with judicial primacy to end nepotism.
- **Cooling-off Period:** Mandate a **2-year cooling-off period** for retired judges before they can accept any government-appointed positions.
- **Transparent Assets Disclosure:** Legally mandate the annual public disclosure of assets and liabilities for all judges of the Subordinate, High, and Supreme Courts.

While the Supreme Court's ban on the NCERT textbook aims to preserve the Dignity of the Institution, the underlying challenge remains the gap between judicial immunity and institutional accountability. Addressing corruption through systemic reforms like **E-Courts** and a **Formal Accountability Bill** is essential to ensure that the temple of justice remains beyond reproach.

WORLD WILDLIFE DAY

The world observed World Wildlife Day on 3 March 2026 under the theme “Medicinal and Aromatic Plants: Conserving Health, Heritage and Livelihoods.”



About Wildlife Conservation:

What it is?

- Wildlife conservation is the practice of protecting wild plant and animal species and their habitats to ensure that healthy native ecosystems are restored, protected, or maintained.
- It involves a multidisciplinary approach encompassing law enforcement, scientific research, and community participation to prevent species extinction and maintain biodiversity.

Data and Statistics on Wildlife in India:

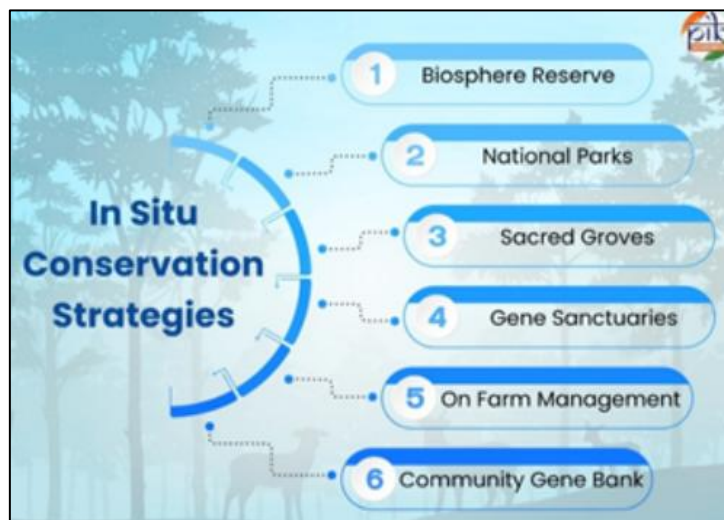
- **Mega-Biodiversity Hub:** India is one of the 17 mega-biodiversity rich countries, harboring nearly 7-8% of the world's recorded species while occupying only 2.4% of the global land area.
- **Medicinal Wealth:** India possesses approximately **15,000 medicinal plant species**, with about 8,000 species utilized in traditional Indian systems of medicine (AYUSH).
- **Protected Area Network:** As of 2026, India has a robust network of **1,000+ Protected Areas**, including National Parks, Wildlife Sanctuaries, and Conservation Reserves.
- **Economic Scale:** The annual domestic demand for medicinal plants in India is estimated at over **5,12,000 metric tonnes**, with 242 species traded in high volumes exceeding 100 MT per annum.
- **Global Export Share:** India is the **second-largest exporter of medicinal plants globally**, significantly contributing to the multi-billion dollar traditional medicine market.

Types of Conservation Methods:

1. In-Situ Conservation (On-site)

Protecting species within their natural habitats where they have evolved.

- **National Parks & Sanctuaries:** Areas with strict protection for flora and fauna (e.g., Corbett, Kaziranga).
- **Biosphere Reserves:** Large areas for ecosystem conservation and sustainable development (e.g., Nilgiri).
- **MPCDAs: Medicinal Plants Conservation and Development Areas** specifically designated for medicinal flora.
- **Sacred Groves:** Community-protected forest fragments based on religious and cultural beliefs.



2. Ex-Situ Conservation (Off-site)

Protecting species outside their natural habitats in controlled environments.

- **Gene Banks:** Long-term preservation of genetic material (e.g., **National Seed Gene Bank** at NBPGR).
- **Botanical Gardens & Zoos:** Providing breeding grounds and educational displays for rare species.
- **Cryopreservation:** Storage of seeds, pollen, or embryos at ultra-low temperatures to maintain viability.
- **Herbal Gardens:** Institutional or school gardens (e.g., Aushadhi Vantika) used for awareness and local supply.

Key Initiatives Taken So Far:

1. **Central Sector Scheme (NMPB):** A flagship scheme for the conservation and sustainable management of medicinal plants with an outlay of **₹322.41 crores (2021-2026)**.
2. **e-CHARAK Portal:** A digital platform and mobile app to enable information exchange and market access between farmers and herbal traders.
3. **National Ayush Mission (NAM):** Promotes the integration of medicinal plant cultivation with traditional farming to enhance farmer income.
4. **GI Tagging:** Protecting the heritage of specific plants like **Nagauri Ashwagandha** (registered Nov 2025) and **Kashmir Saffron** to ensure quality and origin.

Challenges Associated:

- **Overexploitation of Wild Stocks:** High market demand leads to unsustainable harvesting, threatening the survival of rare species in the wild.

Example: In 2025, the **Himalayan Trillium** faced severe depletion in the high-altitude zones due to illegal extraction for its high-value medicinal roots.

- **Habitat Fragmentation:** Infrastructure development and agricultural expansion continue to shrink the natural corridors required for species migration.

Example: The **Western Ghats** have seen localized extinctions of endemic aromatic plants in 2026 due to land-use changes for tourism and plantations.

- **Inadequate Standardisation:** Lack of uniform quality testing and certification makes it difficult for small farmers to access premium global markets.

Example: Recent rejections of **herbal raw drug exports** in late 2025 highlighted the gap in GACP (Good Agricultural and Collection Practices) compliance.

- **Climate Change Vulnerability:** Shifting rainfall patterns and rising temperatures are altering the chemical composition (potency) and flowering cycles of medicinal plants.

Example: The **Kashmir Saffron** yields in 2025-26 were affected by erratic snowfall, directly impacting the livelihoods of thousands of farmers.

Way Ahead:

- **Mainstreaming Cultivation:** Shifting the supply chain from wild-collection to **controlled cultivation** on private lands to reduce pressure on forests.
- **Blockchain in Supply Chain:** Implementing **Traceability Systems** on platforms like e-CHARAK to ensure that herbs are sourced sustainably and ethically.
- **R&D in Bio-Prospecting:** Investing in scientific research to unlock the modern pharmaceutical potential of the 15,000 identified species.
- **Community-Led Conservation:** Empowering **Biodiversity Management Committees (BMCs)** to ensure fair benefit-sharing and protection of traditional knowledge.

India's medicinal plant heritage is a unique confluence of ancient wisdom and modern economic potential. By bridging the gap between digital platforms like e-CHARAK and grassroots conservation in MPCDAs, India is securing its role as a global pharmacy. Protecting these green healers is not just an environmental duty, but a prerequisite for the health and prosperity of Viksit Bharat.

BUREAU OF INDIAN STANDARDS LAUNCHES STANDARDS FOR CLOUD COMPUTING

The Indian government, through the Bureau of Indian Standards (BIS), notified the nation's first-ever standards for cloud computing, data centre performance, and ethical AI deployment.



- The notification under the **BIS Rules, 2018**, establishes a voluntary but formal framework for digital infrastructure. It marks India's shift toward a globally aligned digital ecosystem, ensuring that as conglomerates invest in AI-ready infrastructure, they adhere to recognized performance and ethical benchmarks.

Key Features and Summary of Notification:

1. **International Alignment:** The standards are directly derived from the ISO (International Organization for Standardization) and IEC (International Electrotechnical Commission) frameworks.
2. **Standardized Cloud Terminology:** Establishes common definitions and foundational norms for cloud systems to be used across finance, healthcare, and government services.
3. **Cooling Efficiency Ratio (CER):** Formalizes a methodology to measure how efficiently data centres remove heat relative to electrical energy consumed.
4. **Ethical AI Design:** Embeds ethical considerations—such as transparency and bias mitigation—directly into the design and deployment phase of AI systems.
5. **Global Metric Adoption:** Confirms that India will continue to use global benchmarks like PUE (Power Usage Effectiveness), WUE (Water Usage Effectiveness), and CUE (Carbon Usage Effectiveness).
6. **Voluntary Status:** Currently, the standards are not mandatory; compliance will only become compulsory if the government issues a Quality Control Order (QCO).
7. **Infrastructure Roadmap:** Aligns with NITI Aayog's projection of growing India's data centre capacity from 1.5 GW in 2025 to 8–10 GW by 2030.

Need for Standards in Cloud and Ethical AI:

- **Interoperability in Critical Sectors:** Standardized cloud terminology ensures seamless data exchange between different platforms in vital sectors.

Example: The **Ayushman Bharat Digital Mission (ABDM)** requires standardized cloud frameworks to ensure patient records are accessible across diverse hospital cloud providers.

- **Energy and Thermal Management:** With AI workloads intensifying, data centres require massive power; standards prevent operational failures and environmental strain.

Example: The **Adani-EdgeConneX** and **Reliance** data centre expansions in 2025-26 necessitate strict cooling metrics to manage the heat generated by high-density AI chips.

- **Building Digital Trust:** Ethical AI standards prevent biased algorithms from affecting citizens, which is crucial for public acceptance of automated governance.

Example: As the **Indian Judiciary** explores AI for case summarization in 2026, ethical standards ensure that AI-judgments remain free from data-driven prejudices.

- **Attracting Global Investment:** Aligning with ISO-IEC makes India a trusted partner for global tech giants looking for standardized infrastructure.

Example: **Nvidia and Google's** recent partnerships with Indian firms for AI sovereign clouds rely on India having a regulatory environment compatible with international norms.

Challenges Associated

- **Pace of Technology vs. Regulation:** AI and cyber threats evolve faster than standard-setting bodies can update their documentation.

Example: The rise of **Sovereign AI** models in early 2026 has already challenged the initial definitions of cloud systems notified just months ago.

- **Compliance Costs for Startups:** High standards for data centres and AI ethics may increase the entry cost for smaller Indian startups.

Example: While conglomerates can afford **CER-compliant cooling**, smaller players in the **MeitY-backed AI startup hub** may struggle.

- **Security Integration Gap:** Standards currently focus on performance and ethics; however, deep-rooted cybersecurity from the start remains a distinct challenge.

Example: Recent **ransomware attacks on Indian healthcare grids** in late 2025 highlighted that performing data centres aren't always secure data centres.

- **Resource Intensity (Power and Water):** AI expansion is projected to raise data centres' share of India's electricity use from **0.8% to 3% by 2030**.

Example: In water-stressed regions like **Bengaluru and Chennai**, the high **WUE (Water Usage Effectiveness)** required for AI cooling is creating friction with local resource needs.

Way Ahead:

- **Issuance of QCOs:** The government should selectively issue **Quality Control Orders** for critical sectors (like finance and defense) to make these standards mandatory.
- **Incentivizing Green Cooling:** Provide subsidies for data centres that achieve high **Cooling Efficiency Ratios (CER)** through liquid cooling or renewable energy.
- **Continuous Review Cycle:** Establish a Living Standard mechanism where BIS reviews AI ethics annually to keep up with generative AI breakthroughs.
- **Capacity Building:** Launch nationwide training for IT auditors to certify firms against these new ISO-IEC-aligned Indian standards.
- **Focus on Security:** Transition from Governance to Secured Governance by adding a cybersecurity layer to the AI deployment framework.

India's notification of cloud and AI standards is a landmark step in transforming the nation from a consumer of tech to a **standard-setter in tech**. By balancing high-performance data centre metrics with ethical AI guardrails, the government is ensuring that the digital backbone of **Viksit Bharat** is both efficient and trustworthy. This formalization provides the necessary stability for India to achieve its 10 GW data centre target by 2030.

INDIA -CANADA RELATIONS

Bilateral relations between India and Canada have undergone a strategic reset following Prime Minister Mark Carney's visit to India and his high-level talks with Prime Minister of India.



About India-Canada Bilateral Relations:

What it is?

- India and Canada share a relationship built on a “Strategic Partnership” centered around shared democratic values, the rule of law, and strong people-to-people ties. The partnership spans several critical sectors including nuclear energy, trade, education, and maritime security in the Indo-Pacific.

History of India-Canada Relations:

- **Early Cooperation:** Traditionally, the two nations shared a cooperative bond, particularly in the nuclear field, until it was disrupted in the 1970s.
- **Economic Integration:** Over the last 25 years, Canada has made major investments in India, with approximately 600 Canadian companies now operating on Indian soil.
- **The Trudeau Strain:** Relations faced severe deterioration during Justin Trudeau's tenure due to allegations regarding the killing of Hardeep Singh Nijjar.
- **The Carney Transition:** Ties began to improve last year after Mark Carney assumed office, leading to the resumption of high-level visits and trade talks.
- **Modern Strategic Reset:** The relationship has now shifted toward a “Strategic Energy Partnership” and a focus on middle-power collaboration against global power hegemony.

Need for Reset:

1. **Energy Security:** India requires stable long-term partners to meet its massive and growing energy demands through nuclear and renewable sources.

Example: The new \$2.6-billion, 10-year deal for Canadian uranium is essential for fueling Indian nuclear reactors.

1. **Economic Protectionism:** Both nations are seeking to defend their economies against the impact of great power hegemony and restrictive trade policies.

Example: Strengthening ties serves as a shield against the United States' current tariff policies affecting both countries.

1. **Trade Diversification:** There is an urgent need to expand bilateral trade to its full potential through a formal Economic Partnership Agreement.

Example: Leaders aim to double bilateral trade to \$50 billion by 2030 to bolster already robust economic ties.

1. **Indo-Pacific Stability:** Regional security requires coordinated efforts between democratic middle powers to ensure maritime safety.

Example: A planned defense dialogue aims to support maritime security cooperation across the Indo-Pacific region.

1. **Diaspora Management:** The presence of a massive Indian community in Canada necessitates a stable diplomatic environment for their welfare.

Example: With 1.8 million Indo-Canadians and 400,000 Indian students in Canada, the reset ensures their safety and academic continuity.

Challenges Associated:

1. **Sovereignty and Security Allegations:** Past accusations regarding extrajudicial activities remain a sensitive “under-the-surface” issue for both governments.

Example: The severe strain caused by allegations in the Hardeep Singh Nijjar case highlights how security issues can paralyze diplomacy.

1. **Trade Barriers:** Navigating complex regulatory frameworks to finalize the Economic Partnership Agreement by year-end remains a hurdle.

Example: Restarting trade talks required overcoming months of total deadlock following the diplomatic fallout of 2024-25.

1. **Extremism and Diaspora Politics:** The activities of separatist elements within Canada continue to be a primary point of contention for New Delhi.

Example: India has consistently raised concerns about the safety of its diplomats in Canada amidst protests by Khalistan supporters.

1. **Nuclear Regulatory Hurdles:** Expanding nuclear cooperation to build large and small reactors requires navigating strict international and bilateral safeguards.

Example: The plan to use Canadian expertise for Indian reactors depends on the successful execution of the 10-year uranium deal.

1. **Global Power Dynamics:** External pressures from great power rivalries and shifting US trade stances could disrupt middle-power alignment.

Example: Both nations must balance their reset while simultaneously reacting to the unpredictable tariff shifts from the US.

Way Ahead:

- **Finalize CEPA:** Conclude the India-Canada Comprehensive Economic Partnership Agreement by the end of 2026 to provide a legal framework for trade.
- **Operationalize Energy Pact:** Rapidly implement the Strategic Energy Partnership covering nuclear, LNG, solar, and hydrogen energy.
- **Strengthen Security Ties:** Operationalize the planned defense dialogue to maintain a rules-based order in the Indo-Pacific.
- **Critical Minerals Collaboration:** Secure supply chains for critical minerals necessary for India’s green energy transition and technological growth.
- **Enhance Student Welfare:** Streamline exchange programs and ensure a supportive environment for the 400,000 Indian students currently in Canada.

The strategic reset between India and Canada marks a transition from a period of deep mistrust to a pragmatism-driven partnership centered on energy and economic security. By moving past historical grievances, both nations are positioning themselves as collaborative middle powers capable of navigating global trade uncertainties. This renewed bond is essential for India’s energy future and the prosperity of its vast diaspora living in Canada.

CENTRAL WAREHOUSING CORPORATION (CWC)

The Central Warehousing Corporation (CWC) celebrated its 70th Foundation Day on March 2, 2026, marking seven decades of contribution to India's food security.

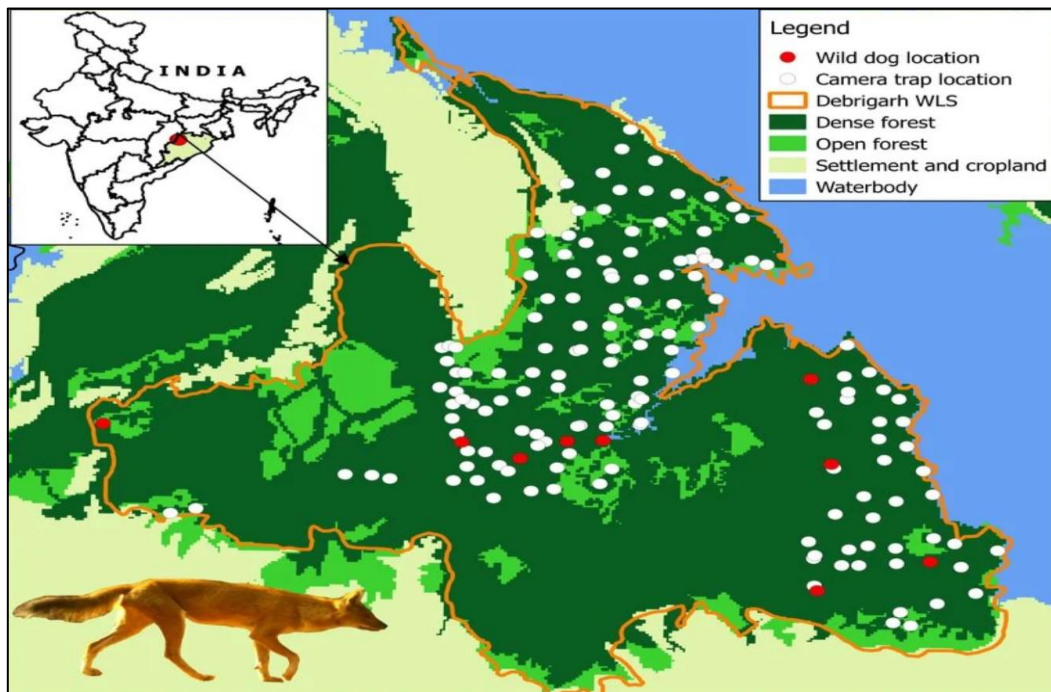


About Central Warehousing Corporation (CWC):

- **Nature:** The Central Warehousing Corporation (CWC) is a **Central Public Sector Enterprise (CPSE)** under the **Ministry of Consumer Affairs, Food & Public Distribution**.
 - **Objective:** It serves as a premier logistics and warehousing organization **supporting India's food security, agricultural storage, and integrated supply chain management**.
 - **Establishment:** It was established in **1957 under the Warehousing Corporations Act, 1962** (later governed under Companies Act framework).
- **Evolution:** Its roots trace back to wartime food administration during World War II, when a separate Food Department was set up in 1942. Post-independence **restructuring of the Food Ministry (1947-1958)** led to the **transfer of warehousing functions to the central government**.
 - **Scientific Storage:** Construction and management of warehouses and godowns for **foodgrains, sugar, fertilizers, and other commodities**.
 - **Logistics & Supply Chain Services:** Inland container depots (ICDs), **container freight stations (CFSs)**, and **integrated logistics hubs**.
 - **Support to PDS & Food Security:** Assists **procurement, buffer stocking, and distribution** under the Public Distribution System (PDS).
 - **Custom Bonded Warehousing:** Facilitates import-export trade by offering **bonded storage and customs clearance support**.
 - **Infrastructure Development:** Acquisition and leasing of land **for warehousing expansion across states**.
 - **Significance:** It plays a critical role in maintaining buffer stocks and ensuring smooth distribution of essential commodities nationwide. It also contributes to **India's goal of becoming a top global logistics performer** by improving storage efficiency and reducing supply chain bottlenecks.

DEBRIGARH WILDLIFE SANCTUARY

The Debrigarh Wildlife Sanctuary is set to host the second edition of the two-day 'Indian Bison Fest'.

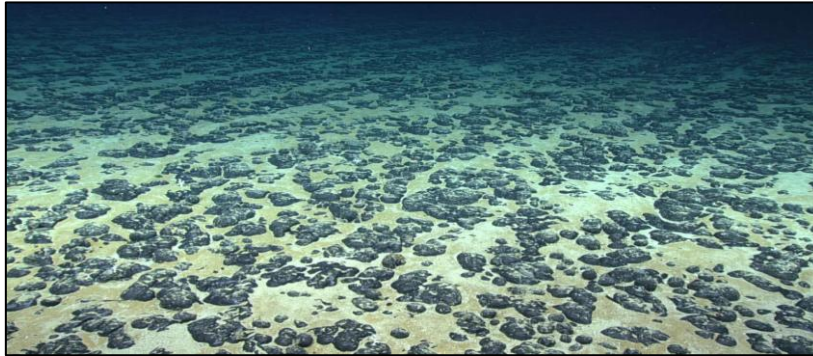


About Debrigarh Wildlife Sanctuary:

- **Location:** It is situated in the Bargarh district of Odisha.
- **Other names:** It is also known as the “Land of Bisons” due to its significant population of Indian Gaur.
- **Lifeline:** It is bounded on the east and north by the **Hirakud Reservoir (Mahanadi River)**, the world’s longest earthen dam.
- **Terrain:** It is characterised as an amphi-terrestrial habitat, an **integrated landscape of forests, grasslands, and wetlands.**
 - **Status:** It was declared a **wildlife sanctuary in 1985**. It is also a designated Eco-Sensitive Zone (ESZ).
 - **Historical significance:** It finds a special mention because of noted **freedom fighter Veer Surendra Sai**. During his rebellion against the British, his base at Barapathara was located within the sanctuary.
- **Vegetation:** Most of the plant sanctuary is covered with **mixed and dry deciduous forest.**
 - **Flora:** Major trees found here are **Sal, Asana, Bija, Aanla, Dhaura**, etc.
 - **Fauna:** These include **Indian leopards, sloth bears, chousingha (four-horned antelope), sambar deer, gaurs (Indian bison)**, wild boars, and Indian wild dogs (dholes) are among the notable animal residents.
- **Birds:** It is one of the most flocked wintering grounds of migratory birds that visit the sanctuary from far-off places. Some of the most prominent among them are the **crested serpent eagle, Flower Peckers, red-vented bulbul, tree pie, drongo, and white eye oriental.**
- **Eco-Tourism:** It is managed through a **community-driven model involving local Gond tribal women**, providing sustainable livelihoods through safaris and eco-cottages

DARK OXYGEN

Scientists exploring the deep Pacific Ocean have reported the discovery of what they describe as “dark oxygen”, detected about 4,000 metres below the ocean surface where sunlight never reaches.



The finding challenges the long-standing scientific understanding that oxygen on Earth is primarily produced through photosynthesis, a process that requires sunlight.

The discovery was made during research on polymetallic nodules located on the Pacific Ocean floor and has sparked new discussions about oxygen production in extreme environments.

What Is ‘Dark Oxygen’?

“Dark oxygen” refers to oxygen detected in deep-sea environments where sunlight is completely absent. Traditionally, oxygen production has been linked to photosynthesis, carried out by plants, algae, and certain bacteria that use light energy to convert water and carbon dioxide into oxygen.

However, researchers observed measurable oxygen levels in deep ocean regions where photosynthesis is impossible. The study, published in the journal “Nature Geoscience”, found that oxygen concentrations near polymetallic nodules increased over time during experiments conducted in sealed conditions on the seafloor.

How Scientists Detected Oxygen In The Deep Sea

The research was conducted in the **Clarion-Clipperton Zone**, a vast region of the Pacific Ocean known for its mineral-rich seabed. Scientists used specialised instruments and benthic chambers to isolate small sections of the ocean floor and measure chemical changes over time.

Unexpectedly, oxygen levels inside these chambers increased rather than decreased. Normally, microbes and chemical reactions consume oxygen in deep-sea sediments.

Researchers believe polymetallic nodules (rich in metals like manganese, nickel, cobalt, and iron) act like natural batteries.

Process:

1. These nodules generate small electrical currents.
2. The current splits seawater molecules.
3. This electrolysis-like reaction separates water into hydrogen and oxygen.
4. Oxygen released this way is called dark oxygen because it forms without sunlight.

Scientific significance

- Challenges the idea that photosynthesis is the only major source of oxygen.
- Suggests deep-sea ecosystems may generate their own oxygen.

Astrobiology implications

- Oxygen could exist on planets without sunlight-based life, affecting how scientists search for life in space.

ALMA TELESCOPE

Recently, astronomers have captured the central region of our Milky Way in unprecedented detail with the help of the ALMA telescope.



About ALMA Telescope:

- **Full form:** ALMA stands for **Atacama Large Millimeter/submillimeter Array**.
 - **Location:** It is a radio telescope located in the **Atacama Desert in Chile**.
- **Objective:** It is a state-of-the-art radio-telescope that **studies celestial objects at millimetre and submillimetre wavelengths**.
- **Development:** It was designed, planned and constructed by the **US's National Radio Astronomy Observatory (NRAO), the National Astronomical Observatory of Japan (NAOJ) and the European Southern Observatory (ESO)**.
- **Launch:** It has been fully **functional since 2013**.
 - **Expanse:** It consists of 66 high-precision antennas, spread over a distance of **up to 16 km in the Atacama Desert** of northern Chile. These antennas can be moved closer together or farther apart for different perspectives – like the zoom lens of a camera.
- **Sensitivity:** It also has extraordinary sensitivity, which allows it to **detect even extremely faint radio signals**.

Why Atacama Desert:

- **Low Humidity:** Millimetre waves are highly susceptible to absorption by atmospheric water vapour. The Atacama is the **driest place on Earth, minimizing signal loss**.
- **High Altitude:** At **5,000+ metres**, the atmosphere is thin, providing a **clearer "window" to the universe**.
 - **International Partnership:** ALMA is not an Indian project; it is a **global collaboration** involving:

Europe: European Southern Observatory (**ESO**).

North America: U.S. National Science Foundation (**NSF**) and **National Research Council of Canada**.

East Asia: National Institutes of Natural Sciences (**NINS**) of **Japan, South Korea, and Taiwan**.

Host Country: Republic of **Chile**

- **Major discoveries:**
 - **Black Hole Imaging:** Part of the Event Horizon Telescope (EHT) project that captured the **first image of the supermassive black hole (Sagittarius A*)** at the center of the Milky Way.
 - **Protoplanetary Disks:** Captured detailed images of **the disk around the star HL Tauri**, revolutionizing theories on how planets form.
 - **Einstein Ring:** Observed the **bending of light from distant galaxies** in unprecedented detail.

SAINT TIRUMANKAI ALVAR

The Ashmolean Museum (Oxford) is set to return a 16th-century bronze idol of Saint Tirumankai Alvar, after research indicated it was photographed in 1957 at the Soundarrajaperumal temple, Thadikombu (Tamil Nadu) and later replaced by a replica.



- Alvars: Tamil Vaishnavite saints who composed devotional hymns to Vishnu.
- Major Alvar texts compiled in Nalayira Divya Prabandham.
- Idol repatriation often occurs through provenance research and diplomatic negotiations.

About Thirumangai Alvar One of the **12 Alvars**, the Tamil poet-saints devoted to **Lord Vishnu**. Associated with the **Bhakti movement in South India**. His hymns are part of the **Divya Prabandham**, an important Vaishnavite devotional text.

GOLESTAN PALACE

The Golestan Palace, a UNESCO World Heritage Site in Tehran, reportedly suffered damage due to shockwaves and debris from nearby airstrikes amid escalating US-Israel-Iran tensions in 2026.



- Golestan Palace is a historic royal complex that served as the official residence of the Qajar dynasty and is one of the oldest historic monuments in Tehran.
- The palace complex, comprising multiple buildings, halls, and museums, reflects a unique blend of Persian architecture and European artistic influences.

Located in: Tehran (Iran)

Status: UNESCO World Heritage Site (inscribed in 2013)

History:

- The origins of the site date back to the **Safavid era (16th century)** when Tehran's royal citadel was developed.
- The complex gained prominence when the **Qajar dynasty (1794-1925)** made Tehran the capital and adopted Golestan Palace as the royal residence.
- Major reconstruction occurred during the reign of **Naser al-Din Shah in the 19th century**, giving the palace its current form.
- During the **Pahlavi era (1925-1979)**, it was mainly used for formal state ceremonies, including royal coronations.
- Today, the complex functions as a **museum and cultural heritage site**.

Key Features:

1. **Architectural Complex:** The palace consists of **17 structures**, including palaces, museums, halls, and gardens built largely during the Qajar period.
2. **Blend of Architectural Styles:** Combines traditional **Persian architectural design with European decorative elements**, reflecting Iran's interaction with the West in the 19th century.
3. **Major Structures:** Important buildings include Marble Throne (Takht-e Marmar), Mirror Hall, Brilliant Hall, Salam Hall, Diamond Hall, and the Edifice of the Sun (Shams-ol-Emareh).
4. **Cultural Archives:** The complex houses photographic archives, manuscript libraries, and historical documents, representing early photography in Iran.
5. **Royal Ceremonial Site:** Historically used for coronations, royal receptions, and diplomatic ceremonies.

Significance:

- Symbolises the political and cultural history of the Qajar dynasty and Iran's transformation into a modern state.
- Represents a rare fusion of Persian and European artistic traditions.

MEGALITHIC ROCK CUT CHAMBERS

These are subterranean burial structures carved directly into laterite rock. They represent a unique funerary architecture where the dead were interred with grave goods, reflecting the Megalithic culture's complex beliefs about the afterlife.



Various Names:

Locally, these structures are known by several evocative names in Kerala and surrounding regions:

- Muniyara (Hermit's cell)
- Pandava Cave (Linked to the mythological Pandavas)
- Peeranki Cave (Cannon cave)
- Nidhikuzhi (Treasure pit)
- Kalppathayam (Stone box/granary)

Origin and Period:

- **Era:** These structures are generally linked to the Iron Age/Megalithic period in South India, dating back roughly **2,000 to 2,500 years**.
- **Region:** Predominantly found in the laterite-rich belts of Kerala and parts of coastal Karnataka.

Purpose:

- The primary purpose was **secondary burial**.
- Megalithic communities practiced elaborate rituals where the bones of the deceased were collected and placed inside these chambers, often accompanied by pottery, iron tools, and beads to assist the soul in the journey beyond.

Key Characteristics:

- **Architecture:** Carved out of laterite rock with a **circular inner chamber**.
- **Entrance:** Usually features a narrow **shaft** leading down to the chamber, with the opening sealed by a heavy stone slab.
- **Top Aperture:** Often contains a small circular hole (around 5 cm in the recent find) at the top, possibly for ritualistic offerings or as a passage for the spirit.
- **Associated Monuments:** Frequently found near other Megalithic structures like **Umbrella Stones (Kudakkallu)** or Cap stones (Toppikallu).

Significance:

- They shed light on the socio-religious practices and ritualistic beliefs (Megalithism) of ancient South Indian societies.
- Demonstrates the early mastery of iron tools used to carve intricate spaces into hard laterite rock.
- Provides physical evidence for dating the transition from the Neolithic to the Iron Age in the Western Ghats region.

DUSKY EAGLE-OWL

The elusive Dusky Eagle-owl (*Ketupa coromanda*) has been sighted in the Phato tourism zone of Uttarakhand's Terai West forest division after a 15-year hiatus.

What it is?

- The Dusky Eagle-owl is a large, powerful bird of prey belonging to the family Strigidae. Unlike many other owls, it is notably **partly diurnal**, meaning it can be active and hunt during the day, especially in cloudy or overcast weather.



Habitat and Distribution:

- **General Range:** Found across South and Southeast Asia, including India, Nepal, Bangladesh, and Pakistan.
- **Specific Environment:** It favors lowland riparian forests (forests near water bodies), plantations, and old-growth woodlands.
- **Elevation:** Typically resides in flat, open habitats at elevations ranging from 0 to 250 meters.

IUCN Status: Least Concern.

Key Characteristics:

- **Physical:**
 - A large, grayish-brown owl (48–58 cm long) with striking yellow eyes.
 - It features long, prominent **ear tufts** (feathers used for camouflage and communication), fine barring on its underparts, and white patches on its shoulders.
- **Biological/Dietary:** An apex predator with a highly diverse diet. It hunts birds (crows, parakeets, herons), mammals (rats, hares, squirrels, porcupines), fish, reptiles, and insects.
- **Social/Breeding:** It rarely builds its own nest, preferring to repurpose old stick nests made by kites, vultures, or eagles. A female typically lays **1 to 3 eggs**.
- **Vocalization:** Its call consists of low, guttural notes that increase in speed and volume before trailing off.

Significance:

- Known as a litmus test species, its presence indicates a healthy, undisturbed ecosystem with a robust prey base.
- Its elusive nature and superior camouflage make it a master of disguise, rarely seen by humans even in known habitats.
- The sighting in the Corbett landscape reflects the success of habitat management and the restoration of natural corridors in Uttarakhand.

OPERATION SANKALP

- Operation Sankalp (Sanskrit for **Commitment**) is the Indian Navy's proactive maritime security initiative launched to ensure the safety of Indian-flagged merchant vessels and maintain regional stability in the Indian Ocean Region(IOR).



Launched in: The operation was officially launched on **June 19, 2019**, following escalating security concerns and attacks on commercial shipping in the Gulf of Oman and the Strait of Hormuz.

Organizations Involved: The mission is executed through meticulous coordination between the **Indian Navy** and several key ministries.

Aim:

- To guarantee the secure passage of Indian commercial vessels through the Strait of Hormuz, Gulf of Aden, and Gulf of Oman.
- To combat the growing threat of piracy in the IOR.
- To safeguard India's substantial maritime trade, particularly oil imports, from unconventional threats.

Key Features:

- **Continuous Presence:** Maintains a steady deployment of frigates and destroyers in the Gulf of Aden and the Gulf of Oman.
- **First Responder Status:** Positions the Indian Navy as the Preferred Security Partner in the region, providing immediate assistance during maritime emergencies.
- **Anti-Piracy Legislation:** Supported by the **Maritime Anti-Piracy Act 2022**, which provides the legal framework to criminalize and prosecute piracy.
- **Comprehensive Surveillance:** Utilizes maritime surveillance aircraft and Special Forces (MARCOS) for 24/7 monitoring of sea lanes.
- **Escort Missions:** Since its inception, the Navy has safely escorted hundreds of merchant vessels carrying millions of tonnes of cargo.

Significance:

- Protects trade routes vital for India's energy security; nearly 62% of India's oil imports originate from the Persian Gulf.
- Demonstrates India's capability as a blue-water navy to project power and protect national interests independently.

STATEMENT OF INTENT ON NUTRITION AND HEALTH

NITI Aayog and UNICEF India have signed a Statement of Intent (SoI) to strengthen nutrition and health outcomes in India's aspirational regions.



About NITI Aayog-UNICEF Statement of Intent on Nutrition and Health:

What it is?

- The Statement of Intent (SoI) is a collaborative framework between NITI Aayog and UNICEF India to support strategic interventions aimed at improving nutrition and health outcomes in underserved districts and blocks.

Aim:

- Improve maternal and child nutrition indicators in aspirational districts and blocks.
- Strengthen implementation systems for health and nutrition programmes at the grassroots level.

Key Features:

- **CSR Mobilisation through I4N Platform:** UNICEF's **IMPAct4Nutrition (I4N) platform** will help channel CSR investments from businesses and industry bodies into nutrition initiatives.
- **Strengthening Anganwadi Infrastructure:** Focus on improving facilities and service delivery through the Integrated Child Development Services system.
- **Capacity Building of Frontline Workers:** Training and support for Anganwadi workers and other field-level health staff to improve programme delivery.
- **Community Engagement and Nutrition Literacy:** Promoting awareness campaigns to improve utilisation of nutrition and health services.
- **Knowledge Sharing and Best Practices:** Creation of platforms to identify and scale successful models of nutrition and health interventions across aspirational regions.

ABOUT IMPACT4 NUTRITION (I4N) PLATFORM

Source – I4N

- The **IMPAct4Nutrition (I4N)** platform is also known as the **Initiative to Mobilize Private Action for Nutrition**.
- It is a **knowledge and resource platform on nutrition** that connects businesses with the social movement **around POSHAN Abhiyaan**.
- **Launched in:** The platform was **launched in 2019**.
- **Aim:** The initiative **aims to encourage businesses to actively participate in improving nutrition awareness** and promoting **healthy lifestyles**.
- **Partners:** Incubated by **UNICEF India**, the platform is supported by partners including **CII, NASSCOM, Tata Trusts, Sight and Life, and CSRBOX**.
- **Aligned With:** The initiative **supports the POSHAN Abhiyaan programme launched by India in 2018**.
- **Key initiatives**
 - **Corporate engagement:** The platform mobilises businesses and CSR partners to support nutrition-focused interventions.
 - **Knowledge hub:** It acts as a central hub for sharing nutrition knowledge and best practices.
 - **ACE card strategy:** A unique framework involving **Assets for nutrition, CSR/Cash for nutrition, and Employees' engagement** to drive behavioral change.
 - **Workplace nutrition:** It promotes nutrition awareness among employees, families, customers, and the wider community.



SHTIL MISSILE

The Ministry of Defence signed ₹5,083-crore defence contracts to strengthen India's maritime security, including procurement of Shtil surface-to-air missile systems for frontline Indian Navy warships.

What it is?

- **Shtil** is a ship-based surface-to-air missile (SAM) system designed to intercept aircraft, helicopters, anti-ship missiles, and other aerial threats targeting naval vessels.
- It is primarily deployed on frontline warships to provide medium-range air defence in maritime combat environments.



Developed by:

- The system was developed by **Russian defence industries**, with export handled by JSC Rosoboronexport.
- It is based on the **Buk missile family**, widely used in Russian air defence systems.

Aim:

- To strengthen the layered air-defence architecture of naval fleets.
- To provide rapid-reaction protection to warships against multiple aerial threats, especially in contested maritime zones.

Key features:

- **Medium-range naval SAM system** capable of engaging aircraft, UAVs, and anti-ship missiles.
- **Vertical Launch System (VLS)** allows missiles to be fired quickly in multiple directions without rotating launchers.
- **All-weather operational capability**, enabling engagements day and night in complex maritime environments.
- **Rapid reaction time** for quick interception of incoming aerial threats.
- **Integration with naval radar and fire-control systems** for improved target tracking and engagement.

Significance for India:

- Enhances survivability of frontline warships of the Indian Navy.
- Strengthens India's maritime security architecture in the Indian Ocean Region(IOR).
- Supports layered air defence strategy, complementing other naval missile systems like Barak-8.

INDIA- BHUTAN TRANS- BOUNDARY RIVER COOPERATION

- India and Bhutan share a unique and deep-rooted partnership centered on **water diplomacy**.
- This cooperation involves the joint management of river basins that flow from the Himalayas in Bhutan into the Indian states of **Assam and West Bengal**.



- It covers **three main pillars:** hydropower generation, flood management, and technical data sharing.

Major Rivers Flowing Through:

Several perennial rivers originate in the Bhutanese highlands and serve as the lifeline for both nations:

- **Manas River:** The largest river system of Bhutan; it meets the Brahmaputra in Assam.
- **Sankosh River:** Forms the border between Bhutan and India in certain stretches.
- **Wang Chhu (Raidak):** Supports multiple major hydropower plants.
- **Amo Chhu (Torsa):** Flows into West Bengal.
- **Punatsangchhu (Sankosh tributary):** Currently the site of massive joint infrastructure development.

Major Projects:

The Hydro-diplomacy between the two nations has resulted in several iconic projects:

- **Punatsangchhu-I & II:** Massive 1,200 MW and 1,020 MW projects (respectively) being implemented with Indian assistance.
- **Chukha Hydropower Project:** The first major project (336 MW), which became a gold standard for bilateral cooperation.
- **Kuri Chhu & Tala Projects:** Essential contributors to Bhutan's export revenue and India's power grid.
- **Mangdechhu:** A 720 MW project recently handed over to Bhutan, known for its high efficiency.

Key Features of the Partnership:

- **Hydro-Meteorological Network:** India supports a network of observation stations in Bhutan to provide real-time data on water levels.
- **Flood Forecasting:** Joint mechanisms to provide early warnings to downstream Indian states (Assam and West Bengal) during the monsoon.
- **GLOF Monitoring:** Enhanced focus on monitoring melting glaciers to prevent Glacial Lake Outburst Floods that threaten both nations.
- **Capacity Building:** Indian agencies like **WAPCOS Ltd.** provide technical expertise and training to Bhutanese engineers.

Significance:

- Hydropower is the largest contributor to Bhutan's GDP and its biggest export to India.
- Provides India with clean, renewable firm power to balance its national grid.

OLEUM GAS

A major oleum gas leak at Bhageria Industries Ltd in Boisar, Maharashtra, forced the evacuation of over 2,000 residents, including 1,600 students.



- Oleum, commonly referred to as **fuming sulfuric acid**, is a highly corrosive chemical consisting of dissolved sulfur trioxide (SO_3) in concentrated sulfuric acid (H_2SO_4). It releases dense white fumes when exposed to moist air.

Chemical Name:

- **Oleum** (Fuming Sulfuric Acid)
- Chemical representation: $\text{H}_2\text{SO}_4 \cdot x\text{SO}_3$
- When $x = 1$, the compound is **Disulfuric Acid ($\text{H}_2\text{S}_2\text{O}_7$)**, also called **Pyrosulfuric Acid**

Production:

Oleum is produced through the **Contact Process**, which involves:

1. Burning sulfur to produce sulfur dioxide (SO_2).
2. Oxidizing SO_2 to sulfur trioxide (SO_3).
3. Absorbing SO_3 into concentrated sulfuric acid to form oleum.

This method avoids directly dissolving SO_3 in water, which would create an uncontrollable acid mist.

Properties of the Gas:

- **Physical Properties:**
- **Appearance:** It appears as dense, white cloudish smoke when leaked into the air.
- **Freezing Point:** Its freezing point varies strongly with concentration; it can be solid at room temperature or remain liquid as low as zero degree.
- **Chemical Properties:**
 - **Dehydration:** It is an extremely strong dehydrating agent, capable of pulling water elements out of sugars to leave pure carbon (the **carbon snake reaction**).
 - **Corrosivity:** It is highly corrosive but lacks free water to attack surfaces, making it less corrosive to certain metals in its pure form compared to diluted acid.
 - **Hydration:** It has a very high enthalpy of hydration; when SO_3 in oleum meets water/moisture, it forms a fine mist of sulfuric acid.

Impact on Health:

- **Acute Irritation:** Exposure can cause minor to severe **eye irritation**.
- **Respiratory Distress:** Hazardous fumes can cause irritation to the respiratory tract; emergency responders use **Self-Contained Breathing Apparatus (SCBA)** to avoid inhalation.
- **Sulfuric Acid Mist:** In large releases, it creates a mist of micrometre-sized sulfuric acid particles that are hazardous over wide areas.

Applications:

- **Sulfuric Acid Manufacture:** Used as an intermediate to produce concentrated sulfuric acid by dissolving SO_3 without creating difficult-to-manage mists.
- **Explosives:** Used in manufacturing explosives like **Trinitrotoluene (TNT)** to create anhydrous nitration mixtures.
- **Organic Chemistry:** Acts as a harsh reagent for secondary nitration of nitrobenzene.
- **Industrial Transport:** Transported in rail tank cars as a safe way to move sulfuric acid compounds between refineries and consumers.

ESSENTIAL COMMODITIES ACT (ECA), 1955

In response to an energy crisis triggered by recent geopolitical strikes on Iran, the Centre invoked the Essential Commodities Act (ECA), 1955.



About The Essential Commodities Act, 1955 (ECA):

What it is?

- The Essential Commodities Act is a central legislation enacted to control the **production, supply, and distribution** of specific commodities deemed essential for the general public. It empowers the government to prevent hoarding and black marketing while ensuring equitable distribution at fair prices.

Aim:

- To ensure the steady availability of essential goods.
- To prevent artificial scarcity and regulate the prices at which these commodities are bought or sold.
- To secure commodities for the defense of India or the efficient conduct of military operations.

Key Features

- **Declaration of Commodities:** Essential commodity means any item specified in the **Schedule** of the Act.
- **Amending the Schedule:** The Central Government can add or remove commodities from the Schedule in consultation with State Governments.
- **Stock Limits:** The government can fix the quantity of a commodity any person or trader can hold in stock.
- **Price Regulation:** The Act allows for the fixation of prices, particularly for items like foodgrains, edible oils, and sugar.
- **Penalties:** Contravention of orders under Section 3 can lead to imprisonment ranging from **three months to seven years**, plus fines.
- **Confiscation:** Authorities have the power to seize and confiscate commodities, along with the vehicles or animals used for their transport, if the Act is violated.

When the Act is Invoked:

The Act is typically invoked during extraordinary circumstances to protect consumers:

- **War or Famine:** As seen in the recent 2026 energy crisis linked to the U.S.-Israel-Iran conflict.
- **Natural Calamities:** Used during the COVID-19 pandemic to ensure the availability of masks and sanitizers.
- **Extraordinary Price Rise:** Invoked when the retail price of non-perishable agricultural produce increases by **50%**, or horticultural produce by **100%**.
- **Festive Seasons/Elections:** Historically used to moderate prices of wheat or sugar before major festivals or state elections to maintain stability.

Significance

- Acts as a primary tool to ensure that essential food items remain affordable for vulnerable sections of society.
- Prevents traders and wholesalers from hoarding goods to create speculative price hikes.

KARBI ANGLONG GINGER

Assam has marked a major agricultural milestone by flagging off its first-ever trial export consignment of 1.2 metric tonnes of GI-tagged Karbi Anglong Ginger to London.



- Karbi Anglong Ginger is a premium variety of ginger known for its distinct aroma, strong pungency, and medicinal properties.
- It has received a Geographical Indication (GI) tag, certifying its unique origin and quality attributes.

Region:

- Grown in the **Karbi Anglong district** of Assam.
- Cultivated mainly in the Singhasan Hills using traditional Jhum (shifting cultivation) and Tila cultivation methods.

Key Characteristics:

- **Aromatic & Pungent:** Known for a strong, earthy flavour with high essential oil content.
- **Medicinal Value:** Used in traditional medicine for digestive and anti-inflammatory properties.
- **Organic & Traditional Cultivation:** Grown largely using age-old farming practices, enhancing its natural quality.
- **High Market Demand:** Preferred for culinary, pharmaceutical, and processing industries.

Significance:

- GI recognition enhances export value and ensures better price realization for local farmers.
- Supports India's strategy to diversify agricultural exports under value-added and region-specific branding.

RUDDY SHELDUCK

Residents of Mudh village in Ladakh have been protecting the Ruddy Shelduck for over two decades, escorting fledglings safely to the Indus River during breeding season.



- The **Ruddy Shelduck** (*Tadorna ferruginea*), also known as the **Brahminy duck**, is a large migratory waterfowl species found across Europe, Central Asia, and parts of Africa, wintering in South Asia.
- In India, Ladakh is its **only breeding site**, where it nests in high-altitude wetlands between June and August.

Habitat:

- Occupies diverse ecosystems: rivers, lakes, marshes, ponds, deltas, and even man-made reservoirs.
- Found from sea level to elevations up to 4,800 metres, including deserts, steppes, and Himalayan plateaus.
- In Ladakh, it breeds in high-altitude valleys before moving broods to the Indus River.

IUCN Status:

- Classified as Least Concern by the International Union for Conservation of Nature (IUCN).

Key Characteristics:

1. Physical Features:

- Distinctive **orange-brown (ruddy) plumage** with a creamy white head.
- Males have a **dark neck ring** during breeding season.
- Wings show striking contrast of **white coverts and black flight feathers**.

2. Biological Traits:

- Highly adaptable to varied climates and altitudes.
- Can be sedentary, migratory, or semi-nomadic depending on region.
- Migratory populations traverse extreme terrains like the **Himalayas and Gobi Desert**.

3. Reproductive Behaviour:

- Generally **monogamous**, with long-term pair bonds.
- Clutch size ranges from **8-13 eggs**.
- Nests in unconventional sites such as **tree hollows, rock crevices, fox dens, or building attics**.

4. Social Behaviour:

- Adults often cooperatively monitor multiple broods.
- Known for strong pair fidelity, symbolizing marital loyalty in Buddhist culture.

Significance:

- Contributes to wetland biodiversity and acts as an indicator of ecosystem health in fragile Himalayan habitats.
- Revered in Buddhism; considered sacred and a symbol of fidelity, encouraging community protection.

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