

DAILY CURRENT AFFAIRS (DCA)

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THE TELECOMMUNICATIONS (TELECOM CYBER SECURITY) AMENDMENT RULES, 2025

Context

- **The Telecommunications (Telecom Cyber Security) Amendment Rules, 2025**, were notified by the Department of Telecommunications.

Key Amendments

- **TIUEs:** The rules create a new category called **Telecommunication Identifier User Entities (TIUEs)**, covering any business that uses phone numbers to identify customers or deliver services — except licensed telecom operators.
 - ♦ TIUEs must now comply with government directives on suspending phone numbers, respond to data requests and verify customer identities as prescribed by authorities.
- **Broad Scope:** The government has brought all digital services that use mobile numbers — from WhatsApp and payment apps to food delivery platforms — under telecom cybersecurity regulations.
 - ♦ This brings platforms such as Zomato, Swiggy, PhonePe, Paytm, Ola, Uber and messaging services under the same regulatory framework that governs Airtel and Jio.
- **Mobile number verification (MNV) system:** It established a government-run MNV system and mandated database checks before buying or selling used phones.
 - ♦ It will verify whether phone numbers provided by users correspond to legitimate telecom subscribers.
- **Immediate Action:** The rules allow authorities to act immediately without prior notice if deemed necessary for “public interest”.
- **Suspension of Accounts:** The rules empower authorities to order immediate suspension of user accounts across multiple services simultaneously.
 - ♦ It can order both telecom operators and apps to suspend its use.
- **Used Phone Sales Require Checks:** Anyone buying or selling a used mobile phone must now verify its International Mobile Equipment Identity (IMEI) number against a government database before completing the transaction.
 - ♦ The database will list IMEI numbers of devices that have been tampered with, reported stolen, or restricted for fraud or security reasons.

- ♦ Selling or purchasing devices with blacklisted IMEIs will be prohibited.
- **Government verification gateway:** Apps and services can request validation through this government platform, either voluntarily or when directed by authorities. Government agencies will have assured access.
 - ♦ The system will check user-provided numbers against databases maintained by telecom operators like Airtel, Jio and Vi.

Need for the Amendments

- The measures are meant to **target a cybercrime surge based on stolen or forged mobile connections and phone handsets**.
- **Financial Frauds:** As per the Indian Cyber Crime Coordination Centre (I4C), over 740,000 cyber crime cases were reported in just the first four months of 2024 85% related to online financial fraud.
 - ♦ Investment and trading scams often conducted through WhatsApp groups or Telegram channels using fake identities accounted for over 83,000 cases during that period.
- **Use of Mobile Phones:** Criminals routinely use fake, stolen or cloned mobile numbers to bypass one-time password verification, create fraudulent accounts on platforms, and impersonate legitimate users.
 - ♦ The stolen phone market has emerged as a major enabler to conduct fraud whilst evading tracking.
 - ♦ The mandatory IMEI checks aim to disrupt this supply chain.

Source: HT

STRENGTHENING GOVERNANCE THROUGH BLOCKCHAIN TECHNOLOGY

Context

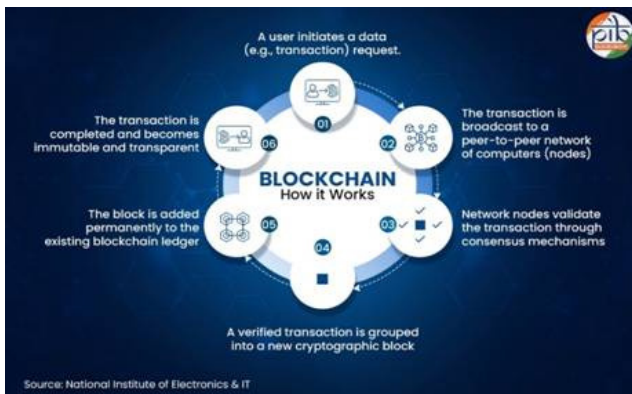
- India is accelerating its adoption of blockchain technology to transform governance, enhance transparency, and strengthen digital trust through the National Blockchain Framework (NBF).

What is Blockchain?

- Blockchain is a **distributed, transparent, secure, and immutable database** that functions like a **ledger of records or transactions**, resistant to tampering and accessible across a network of computers.

- **Understanding Types of Blockchain:**

- ♦ **Public Blockchain:** In this network, all nodes can access records, verify transactions, perform proof-of-work, and add new blocks.
- ♦ **Private Blockchain:** It is a permissioned blockchain, restricted to selected participants within an organization.
- ♦ **Consortium Blockchain:** In this network, the blockchain is semi-decentralized, governed jointly by multiple organizations for shared data management and validation.
- ♦ **Hybrid Blockchain:** It is a blend of public and private blockchains allowing selective data access.



National Blockchain Framework (NBF)

- Developed by the **Ministry of Electronics and Information Technology (MeitY)**, NBF was launched in **2024** with a budget outlay of **₹64.76 crore**.
- NBF is designed to accelerate the development and deployment of **permissioned blockchain-based applications**, marking a strategic step towards building a secure, transparent, and scalable digital infrastructure for India.

Key Components of NBF

- **Vishvasya Blockchain Stack:** It is an indigenous and modular platform designed to provide the technical foundation for building and deploying blockchain-based applications for governance. The features of Vishvasya Blockchain Stack are:
 - ♦ **Blockchain-as-a-Service (BaaS):** Vishvasya enables rapid development and deployment of blockchain applications for governance, providing third-party cloud-based infrastructure and management so that organizations can launch blockchain applications without maintaining complex infrastructure themselves.

- ♦ **Distributed Infrastructure:** The stack is deployed across NIC data centres located in **Bhubaneswar, Pune, and Hyderabad**, ensuring fault tolerance, scalability, and resilience for blockchain-based applications.
- ♦ **Permissioned Blockchain Layer:** The platform is built on a permissioned blockchain, ensuring that only verified and authorized participants can join or validate transactions.
- ♦ **Open APIs and Integration Services:** Vishvasya provides open APIs (Application Programming Interfaces) and integration modules for authentication and data exchange.

- **NBFLite - Blockchain Sandbox for Startups and Academia:** A sandbox environment for startups, academia, and research institutions to prototype blockchain applications in governance.
- **Praamaanik:** It is an innovative solution that leverages blockchain technology to verify the **authenticity and source of mobile applications**.

Blockchain-Enabled Applications Transforming Governance

- **Certificates and Document Chain:** The chain allows secure issuance, storage, and retrieval of documents such as academic certificates, caste, income, ration cards, driving licenses, and birth or death certificates.
- **Logistics Chain:** Provides a tamper-proof and transparent platform to track goods across multiple stakeholders.
 - ♦ **Example: Karnataka's Aushada system** tracks medicines from manufacturers to hospitals, verifying quality, expiry, and traceability, reducing the risk of spurious drugs.
- **Property Chain:** Ensures transparency in land and property transactions, allowing verification of ownership and rights, minimizing disputes, and expediting resolution processes.
- **Judiciary Chain:** Blockchain facilitates electronic delivery of notices, summons, and bail orders, reducing delays and eliminating manual dependencies.
- ♦ **The Inter-operable Criminal Justice System (ICJS)** integrates the criminal justice ecosystem, ensuring a unified digital platform for case records, evidence, and judicial documents.

Initiatives for Blockchain Adoption in India

- **The Centre of Excellence in Blockchain Technology (NIC)** provides consultancy, training, and support for pilot projects, using platforms such as Hyperledger Fabric, Hyperledger Sawtooth, and Ethereum.
- **RBI is leveraging blockchain** for the Digital Rupee, enabling traceable, secure, and inclusive digital payments.
- **Telecom Regulatory Authority of India (TRAI)** has integrated blockchain-based Distributed Ledger Technology (DLT) to track SMS transmissions for regulatory compliance and consumer protection.
- **The National Securities Depository Limited (NSDL)**, has introduced a Distributed Ledger Technology (DLT)-based blockchain platform for Debenture Covenant Monitoring, marking a major step in modernizing India's capital markets.

Conclusion

- Various blockchain-based use cases are being studied across sectors to enhance efficiency and trust in public services.
- Key Proof of Concepts (POCs) include **Land Records** for secure ownership records, **Blood Bank** for transparent donation tracking, **GST Chain for real-time tax monitoring**, and **Public Distribution System (PDS)** for secure supply chains.

Source: PIB

MAKHANANOMICS

In News

- Prime Minister Narendra Modi described the newly launched **National Makhana Board** as a transformative "revolution" for the sector.

Makhana

- It is the dried edible seed of the prickly water lily or **gorgon plant (Euryale ferox)**, a species which grows in freshwater ponds across South and East Asia.
- It is known for its violet and white flowers, and massive, round and prickly leaves — often stretching more than a meter across.
- Makhana, traditionally consumed in ritual settings, has recently gained recognition as a nutrient-rich, low-fat "superfood" and healthy snack.

Production areas

- Bihar is the leading producer of makhana in India, with cultivation concentrated in nine districts of the Mithilanchal region—particularly Darbhanga, Madhubani, Purnea, and Katihar, which account for 80% of the state's output.
- Around 15,000 hectares are used for makhana farming, yielding approximately 10,000 tonnes of popped makhana annually.
- The global makhana market was valued at \$43.56 million in 2023, and expected to touch the \$100 million-mark by 2033.

Issues and Concerns

- Bihar, despite being the top makhana producer, lacks food processing and export infrastructure, forcing it to sell raw fox nuts cheaply to other states like Punjab and Assam, which dominate exports.
- Poor market organization and multiple intermediaries result in low earnings for farmers and the state.
- Additionally, makhana cultivation remains labor-intensive and low in productivity, raising input costs.

Government initiatives

- The government is promoting its commercial potential through marketing efforts, improved industrial infrastructure, and the formation of the **Makhana Board**.
- In 2022, 'Mithila Makhana' was conferred a **Geographical Indication (GI) tag**, a certification that signifies that a product can only be grown in a particular geographical location, and as a result, has unique characteristics (like Darjeeling's tea or Mysore sandal soap).

Way Ahead

- Makhnanomics envisions rural empowerment, economic growth, and regional development.
- With better infrastructure, supportive policies, and improved market access, Bihar's makhana sector could transform from a subsistence crop into a globally recognized superfood industry.

Source:IE

CLOUD SEEDING

Context

- Delhi Chief Minister has said **cloud seeding is essential** for the national capital as it could play a key role in controlling rising pollution levels during the winter season.

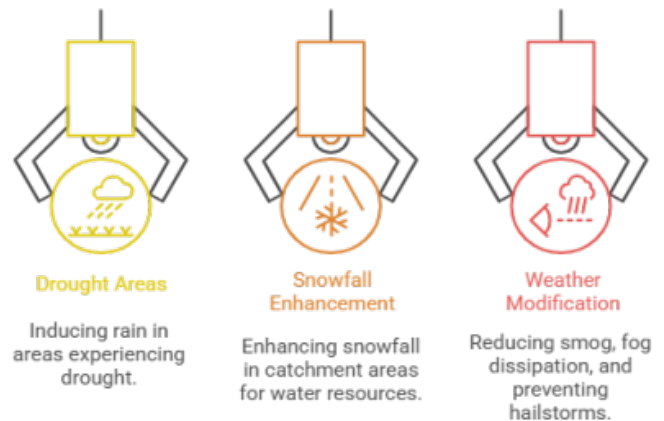
Why is Delhi's Air Quality Severe in Winter?

- **Temperature Inversion:** During winter, the air near the ground becomes cooler than the air above it.
 - ♦ This inversion layer traps pollutants (such as particulate matter and gases) close to the surface, preventing their vertical dispersion into the upper atmosphere.
- **Low Wind Speeds:** Winds are generally weaker in winter, which reduces horizontal dispersion of pollutants, allowing them to accumulate in the lower atmosphere.
- **Crop Residue Burning:** Each year, post-harvest stubble burning in neighbouring states like Punjab, Haryana, and western Uttar Pradesh releases large amounts of smoke and particulate matter.
 - ♦ Prevailing wind patterns carry this pollution towards Delhi, worsening air quality.
- **Dust and Urban Pollution Entrapment:** Urban dust and vehicular emissions linger longer in the atmosphere due to low boundary layer height in winter, compounding the pollution problem.

What is Cloud Seeding?

- Cloud seeding is a **weather modification method** to enhance a cloud's ability to produce rain or snow.
- **History:** First demonstrated in 1946 by Vincent J. Schaefer, an American chemist and meteorologist.
- **Seeding Agents:** Clouds are usually injected with salts like silver iodide, potassium iodide, or sodium chloride to trigger condensation.
 - ♦ Silver iodide and dry ice (solid CO₂) – effective in supercooled clouds (below freezing).
 - ♦ Calcium chloride – used for warmer clouds (above freezing).
- **Working Principle:** The salts, or the seeding agents, serve as nuclei around which water droplets can form or ice can crystallise.
 - ♦ As water droplets grow, they collide with others in the cloud. As they become heavy, the cloud gets saturated and it rains.
 - ♦ Meteorologists identify clouds for seeding which have sufficient moisture but are unable to produce enough precipitation on their own.
- **Methods of Delivery:** These particles are dispersed into clouds using special aircraft, rockets, or dispersion devices kept on the ground.

Cloud Seeding Applications



Can Cloud Seeding Help in Combating Air Pollution?

- **Dependence on Natural Cloud:** Cloud seeding depends on natural clouds; it can't create them.
 - ♦ And even when clouds exist, the evidence that seeding reliably increases rainfall remains weak and contested.
- **Impact on Pollution:** When it rains and reduces pollution, the respite is temporary, the pollution levels go back up within a day or two.
- **Efficiency:** Fine particulate matter (PM_{2.5}) and PM₁₀ get washed away with prolonged precipitation.
 - ♦ However, there is no impact on other pollutants such as ozone and sulphur dioxide.

Cloud Seeding Challenges



What can be Other Measures?

- **Root Causes Identified by Science:** Long-standing scientific consensus attributes hazardous air quality to emissions from vehicles, industries, power plants, construction, waste burning, and agricultural stubble fires.
- **Known Long term Solutions:** Cleaner transport systems (electric mobility, public transport, emission norms).
 - ♦ Sustainable energy transition (phasing out coal, promoting renewables).
 - ♦ Effective waste management and dust control in construction.

- ♦ Urban planning that minimizes congestion and reduces pollution sources.
- **Focus on Quick Fixes:** There is an increasing reliance on temporary measures like smog towers, artificial rain, or short-term bans though they are effective in short terms.
- **The Need for Evidence-Based, Ethical Action:** Real change demands systemic reforms and long-term enforcement of emission controls.

Source: TH

NEWS IN SHORT

SREE NARAYANA GURU

Context

- The President of India inaugurated the observance of the **Mahasamadhi centenary of Sree Narayana Guru** at Sivagiri Mutt, Varkala, Kerala.

About

- Sree Narayana Guru was a **philosopher, spiritual leader and social reformer in India**.
- He led a reform movement against the **injustice in the caste-ridden society of Kerala** in order to promote spiritual enlightenment and social equality.
- He founded institutions like the **Sarada Mutt at Sivagiri** to promote education, spirituality, and social upliftment.
- His slogan, "**One Caste, One Religion, One God for All**," is a cornerstone of his philosophy and a widely recognized saying in Kerala.
- **Important work:** Daiva Dasakam, Nivritti Panchakam, and Atmopadesa Satakam.

Legacy

- His teachings deeply influenced later social reformers and movements, including the Vaikom Satyagraha (1924–25) for temple entry rights.
- Recognized as a saint, philosopher, and social reformer who transformed Kerala's caste-ridden society.

Source: PIB

GYAN BHARATAM MISSION

Context

- **The Gyan Bharatam Mission on manuscripts** under the **Union Culture Ministry**, signed Memorandums of Understanding with around 20

institutes for conservation, upkeep and digitisation of manuscripts.

Gyan Bharatam Mission

- National Mission for Manuscripts (NMM) is aimed to **preserve, document, and disseminate India's rich manuscript heritage**.
- The Mission has been restructured with the nomenclature '**Gyan Bharatam Mission**' as a **Central Sector Scheme** for the period **2024-31**.
- **The key objectives of the Mission include Survey and Documentation, conservation and preservation, publication and research etc.**
- The Culture Ministry had earlier **organised the first-ever international conference on Indian manuscripts** titled "Reclaiming India's Knowledge Legacy through Manuscript Heritage".

Source: TH

SAUDI ARABIA ENDS KAFALA SYSTEM

In News

- In a landmark labour reform, Saudi Arabia has officially scrapped the decades-old Kafala (sponsorship) system.

What was the Kafala system?

- The Kafala system required foreign workers to have a Saudi sponsor, usually their employer, who controlled their visa and legal status.
- This meant that workers couldn't change jobs, leave the country, or even renew their residence permits without the sponsor's consent.

Why did Saudi Arabia scrap the system?

- Human rights bodies long argued that this system often led to worker exploitation and abuse, as employees were left with little legal recourse if their employers withheld salaries or passports.
- The reform aligns with Saudi Crown Prince Mohammed bin Salman's Vision 2030, which aims to modernise the economy, attract foreign investment, and reduce the kingdom's reliance on oil.

How will this impact Indian workers in Saudi Arabia?

- Saudi Arabia currently has an estimated 1.34 crore foreign workers. They account for close to 42 per cent of the Kingdom's population, a majority of the estimated 1.34 crore workers hail from Bangladesh, India, Nepal and the Philippines.

Source: HT

RBI PROPOSES LIMITS ON BANKS CAPITAL MARKET EXPOSURE AND ACQUISITION FINANCING

Context

- The Reserve Bank of India (RBI) has issued a draft circular proposing limits on banks exposure to capital markets and corporate acquisitions to manage risks while promoting credit growth.

What are the Key Proposals?

- Capital Market Exposure:** Banks aggregate exposure, including direct and indirect (through funds, guarantees), should not exceed **40%** of their **Tier-1 capital**.
 - Tier-1 capital** includes **equity, retained earnings**, and certain instruments capable of absorbing losses.
- Acquisition Financing (Loans for Buying Companies):**
 - Banks' exposure to acquisition finance should be capped at **10%** of **Tier-1 capital**.
 - Banks may finance up to **70%** of the acquisition deal value; the remaining **30%** must come from the acquiring company.
 - Only listed entities** with satisfactory net worth and profitability for the last **three years** are eligible.
 - Loans must be fully secured by the target company's shares, so the bank can recover money if needed.
- It proposed **revised risk-weight guidelines** for non-banking financial companies' infrastructure loans, a move that could lower capital requirements for lenders financing established projects.

Source: TH

EXERCISE OCEAN SKY 2025

Context

- The Indian Air Force (IAF) is participating in Exercise Ocean Sky 2025, a multinational air combat exercise hosted by the Spanish Air Force at Gando Air Base, Spain.

About

- The exercise aims to foster **mutual learning, enhance interoperability, sharpen air combat skills, and strengthen defence cooperation** with friendly nations.

- The exercise brings together more than **50 aircraft** from Spain, Germany, Greece, Portugal, India, and the United States, including **India's Su-30MKI fighter jets**.

Growing India-Spain Defence Ties

- In August 2025, India received the final delivery of **16 Airbus C-295 military** transport aircraft at the Airbus Defence and Space facility in Seville, Spain.
- The C-295 project marks **India's first private sector venture in military aircraft production**, under a partnership between Tata Advanced Systems Limited (TASL) and Airbus Spain.
- A Final Assembly Line is being set up in **Vadodara, Gujarat**, to manufacture the remaining 40 out of 56 aircraft in India.

Source: TH

PROJECT ARUNANK

In News

- Project Arunank of the Border Roads Organisation (BRO) marked its 18th Raising Day in Naharlagun, Arunachal Pradesh.

Project Arunank

- It was established in **2008** and it has built over **696 km** of roads and 1.18 km of major bridges, enhancing connectivity to remote areas and supporting Armed Forces operations.
- Notable achievements** include the blacktopping of the 278 km Hapoli-Sarli-Huri Road and strategic links like the TCC-Maza and TCC-Taksing Roads.
- It has embraced **sustainable technologies** such as **Steel Slag, Geo Cells**, and GGBFS Concrete to improve infrastructure durability.
- Environmental efforts** include planting 23,850 trees under the '**Ek Ped Maa Ke Naam**' initiative, while welfare measures for Casual Paid Labourers have improved working conditions.

Future Plans

- BRO plans to expand road networks, build new bridges and tunnels, and enhance high-altitude connectivity using advanced technologies for safer, more sustainable infrastructure.

Source: PIB

ICGS AJIT AND ICGS APARAJIT

In News

- The Indian Coast Guard launched two advanced **Fast Patrol Vessels—ICG Ship Ajit and ICGS Aparajit—at Goa Shipyard Limited (GSL).**

ICGS Ajit and ICGS Aparajit.

- These vessels are the seventh and eighth in a series of eight indigenously built FPVs being constructed by Goa Shipyard Limited (GSL) for the ICG, underscoring India's growing self-reliance in defence shipbuilding.
- The 52-metre-long vessels displace 320 tonnes and are equipped with Controllable Pitch Propellers (CPP) — the first of their kind in this class of ships in India — ensuring superior manoeuvrability and propulsion efficiency.

Importance and Roles

- The FPVs are designed for multi-mission roles such as fisheries protection, coastal patrol, anti-smuggling, anti-piracy, and search and rescue operations, especially around India's island territories and Exclusive Economic Zone.
- This marks a key step in enhancing India's coastal defense and maritime surveillance capabilities.

Source:PIB

INDO-TIBETAN BORDER POLICE (ITBP) RAISING DAY

In News

- The 64th raising day of Indo-Tibetan Border Police (ITBP) was observed recently.

Indo-Tibetan Border Police (ITBP)

- It was raised on October 24, 1962 and it guards the 3,488 km-long **India-China border**, stretching from the Karakoram Pass in Ladakh to Jachep La in Arunachal Pradesh.
- It also plays a crucial role in **internal security operations**, including **anti-Naxal duties** in Chhattisgarh.
- Many of the ITBP's Border Out Posts are located at altitudes between 9,000 and 18,800 feet, where temperatures can plummet to minus 45 degrees Celsius during winters.

Relevance

- It is recognised as a specialised armed police force.
- It trains its personnel in mountaineering, skiing, and tactical combat, in addition to maintaining

readiness for disaster response and relief operations in the Himalayan region.

- It has conducted numerous rescue missions, providing timely assistance to citizens affected by natural calamities.

Source:PIB

CARABID BEETLES

Context

- Recent research in Italy has shown that carabid ground beetles can serve as potential bioindicators of microplastic pollution in soil.

About Carabid Beetles

- Carabid beetles, belonging to the **family Carabidae**, are **nocturnal predators** that inhabit nearly all terrestrial ecosystems worldwide.
- Species diversity:** Around 34,000 species globally and over **1,000 species** recorded in India.
- Physical traits:** Flattened, elongated bodies (**mostly dark or metallic-shiny**), and prominent mandibles for predation.
- Ecological Role:**
 - ♦ **Natural pest controllers:** Feed on a variety of agricultural pests like caterpillars, slugs, aphids, weevils, and snails.
 - ♦ **Indicator of soil quality:** High carabid diversity reflects low pesticide use, good organic matter, and balanced soil moisture.



Source: TH

PILOT WHALES

Context

- More than two dozen pilot whales have died after becoming stranded on a remote beach in New Zealand.

About

- **Scientific name:**
 - ♦ *Globicephala melas* (Long-finned Pilot Whale).
 - ♦ *Globicephala macrorhynchus* (Short-finned Pilot Whale).
- **Family:** Delphinidae (Oceanic dolphins).
- Despite their name, **they are not true whales but large oceanic dolphins.**
- They were named pilot whales because **it was thought that each pod followed a 'pilot' in the group.**
- **Distinctive Appearance:** Pilot whales have a distinctive appearance characterized by a bulbous forehead and a long, black body with a white or light-gray saddle patch behind the dorsal fin.
- **Habitat & Distribution:** Long-finned species prefer cooler waters (North Atlantic, Southern Ocean).
 - ♦ **Short-finned species** prefer warmer tropical and subtropical waters, including parts of the Indian Ocean and Arabian Sea.
- **Conservation Status:**
 - ♦ The IUCN Red List for short finned whales is Least Concern.
 - ♦ The data is not sufficient for the long finned whales.

Source: DD

