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FISCAL CHALLENGES OF INDIAN MUNICIPALITIES

Context

- Urban India drives **nearly two-thirds** of the national GDP but remains financially weak, with municipalities controlling less than one per cent of tax revenue.

Concerns over Fiscal Architecture of Municipalities

- The 74th Constitutional Amendment Act (1992)** empowered Urban Local Bodies (ULBs) to perform 18 functions listed in the **12th Schedule**, including water supply, waste management, and public health.
 - However, the corresponding **financial devolution has been weak** and inconsistent across States, resulting in a situation where responsibility is decentralised but revenue is not.
- Dependency on Higher-Level Transfers:** Cities increasingly rely on tied and scheme-based grants, such as under the Smart Cities Mission or AMRUT, limiting local flexibility and innovation.
- Weak Own-Revenue Base:** Property tax, user fees, and local cesses form the backbone of ULB revenues but together constitute only 20–25% of potential municipal income.
 - Inefficient valuation, political resistance to rate revisions, and low collection efficiency further erode fiscal capacity.
- Impact of GST:** Before GST, cities collected revenue through **octroi, entry tax, advertisement tax, and local surcharges**, which together formed about 19% of total municipal income.
 - GST subsumed these taxes, depriving municipalities of independent revenue sources.

What are the constitutional provisions?

- Article 243X:** Authorises State Legislatures to empower municipalities to levy, collect, and appropriate taxes, duties, tolls, and fees.
- Article 243Y:** Mandates the **State Finance Commission (SFC)** to recommend measures for distributing State revenues between the State and municipalities and to review their financial position.
- Article 280(3)(c):** Empowers the **Central Finance Commission (CFC)** to recommend measures to augment State Consolidated Funds for municipal finances based on SFC recommendations.

Municipal Bonds: The New Frontier of Local Finance

- Municipal bonds are debt instruments issued by Urban Local Bodies (ULBs) such as municipal corporations or councils to raise money from investors. However, their success depends on deeper structural reforms.
- Current Challenges:**
 - Flawed Credit Rating System:** When agencies rate a city's financial health, they often ignore regular grants and transfers from the State or Centre. This makes cities appear weaker than they actually are, reducing their ability to attract investors.
 - Low Credibility of Cities:** Many cities don't have strong financial records or proper audits. Investors hesitate to buy bonds because they fear the city may not be able to repay the money on time.

Way Ahead

- Adopt Global Best Practices:** In countries like **Denmark, Sweden, and Norway**, municipalities have the authority to **levy local income tax**, ensuring direct accountability between citizens and local governments.
- Recognise Transfers as Legitimate Income:** Grants and shared taxes must be treated as part of city income to build credible balance sheets.
- Reform Credit Ratings:** City ratings should factor in governance quality, transparency, and citizen participation, not just narrow financial metrics.
- Enable Fiscal Innovation:** Municipalities should be allowed to earmark a portion of GST compensation or their State tax share as collateral for bond issuance.

Source: TH

INDIA'S BIOTECH SURGE

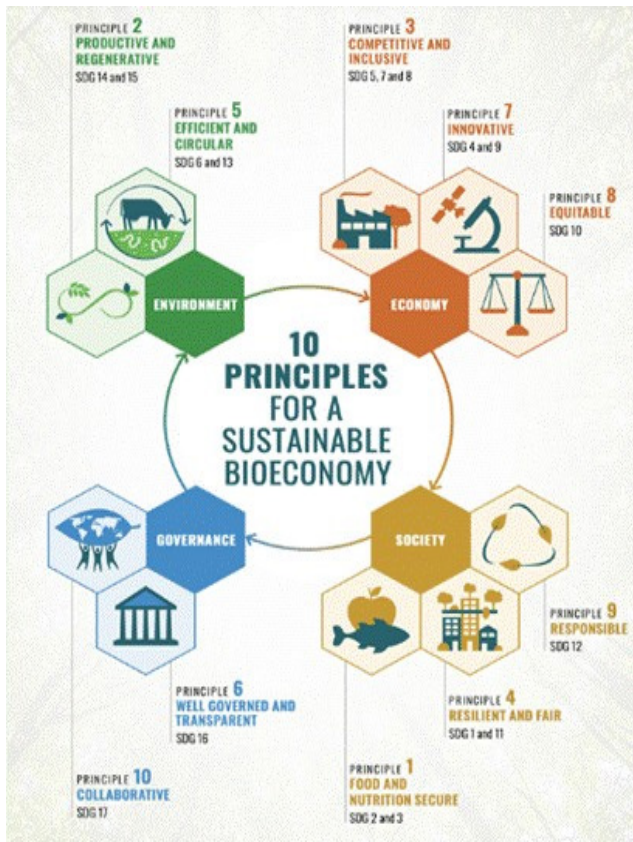
Context

- India's biotech sector has surged in the past several years, from a modest count of **roughly 500 startups in 2018, the number has soared to over 10,000 in 2025.**

What is Bioeconomy?

- The bioeconomy is the use of **renewable biological resources** to produce food, energy and industrial goods, which supports sustainability and economic growth.
- Innovations like **gene editing and bioprinting** are driving progress, while integration across sectors strengthens long-term impact.
 - By aligning biotechnology with digital tools and circular economy principles, the

bioeconomy offers **sustainable solutions to environmental challenges** and promotes overall societal well-being.



India's Bioeconomy

- India is among the **Top 12 destinations** for biotechnology worldwide and **3rd largest destination** for biotechnology in Asia Pacific.
- India's bioeconomy has grown sixteen-fold from **\$10 billion in 2014 to an impressive \$165.7 billion in 2024**.
- Contributing 4.25%** to the national GDP, the sector has demonstrated a robust compound annual growth rate (CAGR) of **17.9%** over the past four years.
- India's Biotechnology sector is **categorised into Biopharmaceuticals, Bio agriculture, Bio IT and Bio Services**.
- Future Goals:** Target of achieving a **\$300 billion bioeconomy by 2030**.
 - India also seeks to lead globally in biopharma, including vaccines, diagnostics, and therapeutics.

Concerns

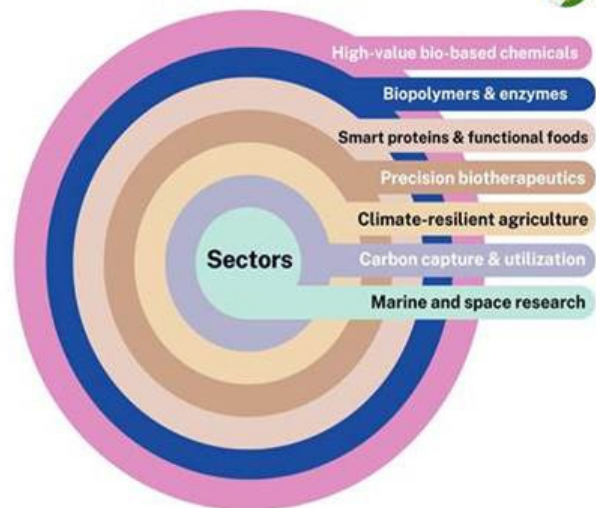
- Fragmentation of Infrastructure:** India hosts over 70 incubators, but few have end-to-end facilities such as pilot-scale purification systems, fill-and-finish suites, regulatory affairs support.

- This forces entrepreneurs to operate across cities, duplicating costs and processes.
- Regulatory Complexities:** Outdated frameworks for clinical trials, patent laws and product approval.
- Lag behind modern demands** (AI, biologics, genomics), delaying market entry and deterring investment.

Government Initiatives and Key Programmes

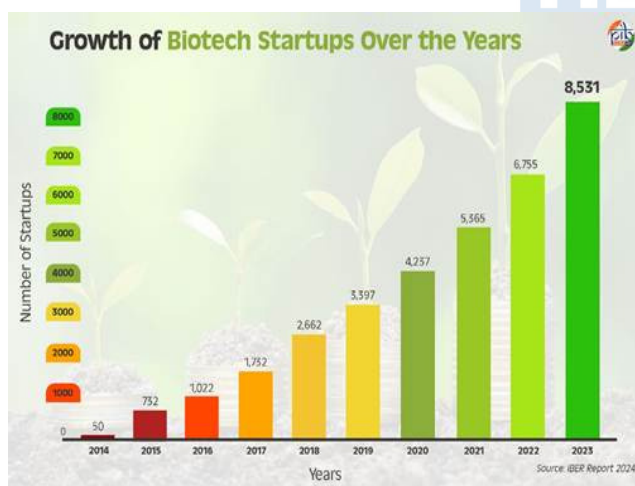
- BioE3 Policy (Biotechnology for Economy, Environment, and Employment):** It was approved by the **Union Cabinet in 2024**, has an ambitious vision to create a **\$300-billion bioeconomy by 2030**.

BioE3 Policy Targets Strategic Sectors for Sustainable Growth



- National Biopharma Mission:** It is a government-approved initiative led by the Department of Biotechnology (DBT) and implemented by BIRAC.
 - Aim:** To boost India's capabilities in biopharmaceuticals, vaccines, biosimilars, medical devices, and diagnostics by fostering collaboration between industry and academia.
- Bio-agriculture:** Agricultural biotechnology in India is advancing rapidly through innovations in genomics, transgenics, and gene editing under the Department of Biotechnology's Agriculture Biotechnology programme.
 - Climate-Smart Crops:** A drought-tolerant, high-yielding chickpea variety SAATVIK (NC 9) has been approved for cultivation.
 - Genome-Edited Rice:** Loss-of-function mutations in yield-limiting genes have led to improved rice lines like DEP1-edited MTU-1010, showing higher yields.
 - Genotyping Arrays:** India's first 90K SNP arrays—IndRA for rice and IndCA for chickpea—enable DNA fingerprinting and variety identification.

- ♦ **Amaranth Resources:** A genomic database, NIRS techniques, and a 64K SNP chip aid nutritional screening and development of anti-obesity amaranth varieties.
- ♦ **Biocontrol:** A nano-formulation from *Myrothecium verrucaria* offers eco-friendly control of powdery mildew in tomato and grape.
- ♦ **Kisan-Kavach:** An anti-pesticide protective suit enhances farmer safety from toxic exposure.
- **Biotech-KISAN (Biotech-Krishi Innovation Science Application Network):** Biotech-KISAN is a scientist-farmer partnership programme launched to empower farmers through agricultural innovation and scientific interventions.
- **Bioenergy:** Ethanol blending has seen a significant rise—from 1.53% in 2014 to 15% in 2024, with a target of 20% blending by 2025.
- **Boosting Biotech Innovation Through BIRAC Initiatives:** The Biotechnology Industry Research Assistance Council (BIRAC), established by the Department of Biotechnology in 2012, plays a pivotal role in nurturing India's biotech startup ecosystem.
 - ♦ With 95 bio-incubation centres set up nationwide, BIRAC supports startups through funding, infrastructure, and mentorship.



Way Ahead

- India's bioeconomy stands at a defining moment, with its integrated approach to innovation, sustainability, and inclusive development setting a global benchmark.
- The convergence of bio-manufacturing, bio-agriculture, and bioenergy not only strengthens national resilience but also signals India's strategic intent to lead in the emerging global bioeconomy.

Source: TH

RBI SUPERVISION FOR EPFO, POST OFFICE BANK

Context

- **The Employees' Provident Fund Organisation (EPFO) and the Post Office Savings Bank (POSB)** — may soon come under the **Reserve Bank of India's (RBI) supervision**.

About

- **Post Office Savings Bank (POSB):** A 96 crore scam uncovered in 2024 involving fraudulent operations in POSB schemes over a 24-month period.
 - ♦ Following this, it has reached out to the Department of Economic Affairs in the Ministry of Finance seeking a supervisory pact with the RBI for undertaking a review of internal controls.
- **Employees' Provident Fund Organisation (EPFO):** The Ministry of Labour and Employment sought RBI's advice on fund management and investment practices.
 - ♦ The RBI's report flagged issues like weak accounting standards, conflict of interest (EPFO acting as both regulator and fund manager).
 - ♦ **Follow-up:** EPFO Board approved creation of a joint committee with representatives from the RBI, Finance Ministry, and Labour Ministry to address these concerns.

Need for the RBI Oversight

- **Safeguarding Public Funds:** Both institutions manage significant amounts of public funds — making robust oversight and governance crucial.
 - ♦ The move indicates the Government's push for financial discipline, transparency, and risk management in social security and small savings institutions.
- **Governance and Accountability Concerns:** The repeated instances of fraud and misappropriation, weak internal controls and manual record-keeping expose systemic vulnerabilities.
- **Weak Accounting and Risk Management Frameworks:** RBI's review found weak accounting standards in EPFO's fund management.
 - ♦ There is a lack of mark-to-market valuation and actuarial assessment of liabilities.
- **Conflict of Interest in EPFO Operations:** EPFO acts as both regulator and fund manager for provident fund assets.
 - ♦ This dual role creates potential for bias, inefficiency, and weak supervision.

- **Investment Diversification:** EPFO's portfolio heavily tilted toward government and corporate debt, with limited equity exposure.
 - ♦ RBI has advised gradual diversification and improved risk-return balance, aligning EPFO's strategy with global best practices in pension fund management.
- **Transparency and Public Confidence:** Scams and irregularities have eroded depositor confidence in POSB and EPFO.

Significance

- RBI oversight can enforce bank-like prudential standards and improve internal governance.
- RBI's technical expertise can help modernize accounting, strengthen audits, and ensure transparency.
- RBI oversight can help enforce segregation of functions and independent fund management norms.
- RBI's oversight brings credibility, ensures regulatory discipline, and builds public trust in these social security institutions.

Post Office Savings Bank (POSB)

- **POSB** refers to the **postal small-savings / savings bank schemes** under the **Department of Posts, Ministry of Communications**.
- There is already RBI's authority over the payment-related functions of the Bank given that it comes under the **Payment and Settlement Systems (PSS) Act, 2007**.

EPFO

- EPFO is a **statutory body** under the **Ministry of Labour and Employment**.
- It administers the **Employees' Provident Fund and Miscellaneous Provisions Act, 1952**.
- **Objectives:** To ensure financial security and social welfare of employees post-retirement.
 - ♦ To promote voluntary savings among employees.
 - ♦ To regulate and supervise provident fund, pension, and insurance schemes.

Source: IE

SAIME MODEL (AQUACULTURE MODEL) OF SUNDARBANS WINS FAO RECOGNITION

In News

- The Sustainable Aquaculture in Mangrove Ecosystems (SAIME) model received Global Technical Recognition from the UN's Food and Agriculture Organization (FAO).

Sustainable Aquaculture in Mangrove Ecosystems (SAIME) model

- It is developed by the Nature Environment and Wildlife Society (NEWS) in West Bengal's Sundarbans.
- It promotes ecosystem-based, climate-adaptive aquaculture by integrating 5%–30% mangrove coverage in shrimp ponds.
- It is implemented across 29.84 hectares by 42 farmers and it has doubled net profits through reduced production costs.

Importance

- It enhances coastal resilience, supports sustainable livelihoods, promotes chemical-free shrimp farming, and aids carbon sequestration and climate action in the context of global sea-level rise.
- It gains importance amid concerns over land-use changes from conventional shrimp farming.

Sundarbans ecosystem

- It is one of the largest mangrove forests globally.
- It lies on the delta of the Ganges, Brahmaputra and Meghna rivers on the Bay of Bengal.
- It is adjacent to the border of India's Sundarbans World Heritage site inscribed in 1987.

Ecological and Strategic Importance

- **Biodiversity Reservoir:** It is known for its wide range of fauna, including 260 bird species, the Bengal tiger and other threatened species such as the estuarine crocodile and the Indian python.
- **Climate Shield:** Its dense mangrove cover acts as a natural barrier against cyclones, storm surges, and coastal erosion, protecting millions of lives and livelihoods.
- **Carbon Sink:** Mangroves sequester significant amounts of carbon, contributing to global climate mitigation efforts.
- **Livelihoods and Culture:** The region sustains millions through fishing, honey collection, and eco-tourism, while preserving indigenous knowledge and cultural heritage.

Emerging Threats

- According to the IUCN World Heritage Outlook 4 (2025), the Sundarbans National Park's conservation status has deteriorated from "Good with Some Concerns" to "Significant Concerns".
- **Climate Change:** Rising sea levels and frequent storm surges are reducing mangrove diversity and accelerating habitat loss.
- **Salinity and Pollution:** Heavy metal contamination and increasing salinity are degrading water quality and soil health.

- **Unsustainable Resource Extraction:** Overfishing, illegal logging, and land-use changes are disrupting ecological balance.
- **Anthropogenic Pressures:** Encroachment, infrastructure development, and waste disposal are fragmenting habitats even within protected zones.

Suggestions and Way Forward

- The Sundarbans is vital for climate resilience, biodiversity, and local livelihoods therefore, It is essential to enhance ecological monitoring and track emerging threats like pathogens across borders to protect the Sundarbans.
- Mangrove restoration must be integrated into national climate adaptation and disaster resilience plans.
- Sustainable livelihood models such as SAIME should be scaled to balance conservation with economic needs.
- Strengthening India-Bangladesh cooperation is vital for joint ecosystem management and data sharing.
- Fostering eco-literacy and public engagement will build a culture of conservation and long-term stewardship.

Source :TH

THE 'CRITICAL FACTOR' IN INDIA'S CLEAN ENERGY AMBITIONS

Context

- As India targets 500 GW of renewable energy capacity by 2030 and net-zero emissions by 2070, securing access to critical minerals has become a national priority.

What are Critical Minerals?

- These are minerals that are **essential for economic development and national security**.
- The lack of availability of these minerals or the concentration of extraction or processing in a few geographical locations could potentially lead to “**supply chain vulnerabilities and even disruption of supplies**”.

List of Critical Minerals

- **Different countries have their own unique lists** of critical minerals based on their specific circumstances and priorities.
- **A total of 30 minerals were found to be most critical for India**, out of which two are critical as fertilizer minerals: Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, Rare Earth

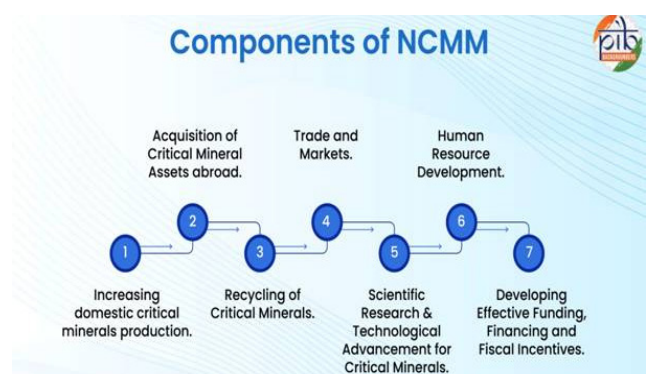
Elements (REEs), Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.

Critical Minerals in India's Green Transition

- **Significance:** Critical minerals are essential for technologies powering electric vehicles (EVs), solar panels, wind turbines, and energy storage systems.
 - ♦ **Lithium and cobalt** form the core of EV batteries, while REEs are vital for high-performance magnets in wind turbines and electronics.
- **Market Outlook:** India's EV market is projected to grow at a CAGR of **49%** (2023–2030) under initiatives like the **Electric Mobility Promotion Scheme (EMPS) 2024**.
 - ♦ The battery storage market, valued at **\$2.8 billion in 2023**, is set to expand rapidly with renewable energy integration.
- **Import Dependence:** India imports nearly **100%** of its lithium, cobalt, and nickel, and over 90% of its REEs, leaving it vulnerable to supply disruptions.
 - ♦ China currently dominates **60%** of global REE production and **85%** of processing capacity, heightening strategic risks.

India's Policy Push for Mineral Exploration

- **Domestic Reserves:** India has vast untapped mineral potential, with **lithium in Jammu and Kashmir (J&K)** and **Rajasthan**, and REEs in **Odisha and Andhra Pradesh**.
 - ♦ In **2023**, the Geological Survey of India (GSI) identified **5.9 million tonnes** of inferred lithium resources in J&K.
- **Policy Initiatives:** **National Mineral Exploration Policy (NMEP), 2016** and **Mines and Minerals (Development and Regulation) Act, 2021** have accelerated exploration through private participation and advanced surveys.
- **KABIL (Khanij Bidesh India Ltd)** is acquiring overseas mineral assets to ensure supply security.
- **The National Critical Mineral Mission (NCMM)** with a **₹34,300 crore plan** aims to strengthen the value chain from exploration to recovery.



What are the challenges?

- **Environmental Concerns:** Mining and extraction pose ecological and social challenges.
- **Limited Processing and Refining Capacity:** India lacks sufficient domestic facilities for advanced processing and refining of critical minerals like lithium, cobalt, and REEs.
- **Low Domestic Production:** Despite having significant untapped reserves, India contributes less than **1%** of global **Rare Earth Element (REE) production**, limiting its influence in global critical mineral markets and creating supply vulnerabilities.

Way Ahead

- **Policy Incentives:** Strong fiscal measures such as subsidies, tax incentives, production-linked schemes, and dedicated R&D funding are essential to make domestic exploration and processing economically viable.
- **Speedy operationalisation of approved mining leases** and fast-tracked exploration in mineral-rich regions like Chhattisgarh, Rajasthan, and Jammu & Kashmir will help boost supply security.
- **Upgrading to mechanised mining equipment**, automated processing plants, and sustainable waste management systems will improve efficiency and reduce environmental impact.
- **Promoting a Circular Economy:** With India generating nearly **four million metric tonnes of e-waste annually**, enhancing **recycling and recovery** of critical minerals from used batteries and electronic waste can significantly reduce import dependence.

Source: TH

International Air Transport Association (IATA) and enhanced by in-house research.

Source: HT

EPFO CLARIFIES PF WITHDRAWAL RULES**Context**

- Amid mounting criticism over new withdrawal norms, **the EPFO has issued a clarification on the revised rules** for accessing provident and pension funds in case of unemployment.

Revised Rules

- **Simplification of Partial Withdrawal Rules:** Earlier there were 13 complex provisions under different heads and now merged into 3 simplified categories:
 - ♦ **Essential Needs:** Illness, education, marriage.
 - ♦ **Housing Needs:** Construction, purchase, repayment.
 - ♦ **Special Circumstances:** Natural calamities, unemployment, etc.
- **Liberalized limits:**
 - ♦ **Education:** Up to 10 times (earlier limit much lower)
 - ♦ **Marriage:** Up to 5 times (earlier total limit for marriage + education = 3 times).
 - ♦ **Uniform minimum service:** Only 12 months (earlier higher and varied).
- **No need to specify reasons for withdrawal under Special Circumstances.**
- **25% minimum balance to be maintained** to preserve retirement corpus and enjoy 8.25% interest with compounding benefits.

Clarification on Withdrawal During Unemployment

- The members can now withdraw **up to 75% of their EPF balance** "immediately" after losing their job, while the pension (EPS) accumulation can be withdrawn only after **36 months of unemployment**.

Detail	Explanation
Immediate Withdrawal Limit	75% of the PF amount can be withdrawn after job loss
Full Withdrawal Eligibility	100% after 12 months of continued unemployment
Extended Withdrawal Period for the Unemployed	From 2 months → 12 months for premature PF settlement
Pension Withdrawal (Service of 10 years + needed to avail pension)	Increased from 2 months → 36 months
Pension Withdrawal Categories	Reduced from 13 → 3 — essential needs, housing, and special circumstances
Minimum Balance Rule	Members must maintain 25% of contribution balance at all times

NEWS IN SHORT**HENLEY PASSPORT INDEX****In News**

- India's passport ranked 85th, granting visa-free access to 57 countries, a drop from 80th place in 2024.
- Singapore currently holds the top spot.

About Henley Passport Index

- The Henley Passport Index is a global ranking system that evaluates the travel freedom provided by the passports of different countries, based on the number of destinations their holders can access without a prior visa.
- The index is compiled and published by Henley & Partners, using exclusive data from the

- These changes are expected to come into effect in the next 1-2 months.

Source: IE

PRUSSIAN BLUE CAPSULES

In News

- India has gifted critical Prussian Blue Capsules to Indonesia to mitigate the effects of Cesium-137 contamination.

About Prussian Blue Capsules

- Prussian Blue Capsules are a specialized medication used primarily to treat internal contamination with radioactive cesium or thallium, as well as non-radioactive thallium poisoning.
- The capsules work by trapping these toxic substances in the intestines, preventing their absorption into the body, and facilitating their removal through bowel movements.

Source: AIR

TIME RONDEAU CRYSTAL

Context

- An international team of scientists has discovered a new phase of matter called the **Time Rondeau Crystal (TRC)**, a state where order and disorder coexist in time.

What is Order in Matter?

- All forms of matter have a specific **arrangement of their particles**.
 - ♦ In a **solid crystal** such as salt or diamond, atoms are arranged in a regular and repeating pattern, which represents **order in space**.
 - ♦ In contrast, in a **liquid**, atoms move freely and lack any fixed arrangement, representing **disorder**.
- In **2012**, scientists proposed that if matter can exhibit order in space, it might also show order in time. This led to the prediction of a new phase of matter called a **time crystal**.
- A **time crystal** is a system that **repeats its motion or behaviour at fixed time intervals**.
 - ♦ For example, imagine pushing a swing at equal intervals. Normally, the swing moves in rhythm with each push.
 - ♦ However, in a time crystal, the motion would repeat only after every two pushes instead of one, forming a regular cycle in time.

What is a Time Rondeau Crystal (TRC)?

- A Time Rondeau Crystal (TRC) is a **new phase of matter** discovered recently.
- It is **similar to a time crystal**, but with a special difference:

- ♦ It shows **both order and randomness in time**.

- ♦ The system repeats its pattern after some time (order), but between these repetitions, its behavior is irregular (disorder).

- Scientists created the TRC by using **carbon-13 atoms in a diamond** and controlling their spins with **microwave pulses**.

- The pulses were not given at fixed intervals, there was some **randomness**, but still, the system showed regular patterns over longer periods.

Potential Applications

- **Quantum technology:** It can help design new types of quantum sensors that detect specific time patterns.
- **Information storage:** Data can be stored in the timing of TRC's repeating patterns.
- **Scientific research:** Helps scientists understand how order can exist even within disorder, opening new ways to study materials.

Source: TH

SC ALLOWS SALE OF GREEN FIREWORKS IN DELHI

In News

- The Supreme Court relaxed its earlier blanket ban and permitted the sale and use of **green firecrackers in the Delhi-NCR region**, subject to strict conditions.
- The court noted that blanket bans had led to smuggling and use of more harmful conventional fireworks, and cited its 2018 Arjun Gopal judgment, which introduced green firecrackers and showed reduced emissions.

Green firecrackers

- They are eco-friendly alternatives to traditional fireworks, developed to address air pollution concerns.
- They offer a balanced solution by enabling festive celebrations while minimizing environmental and health impacts.

Types

- **SWAS (Safe Water Releaser)** emits water vapor to reduce dust; free of sulphur and potassium nitrate.
- **STAR (Safe Thermite Cracker)** low sound and particulate emissions; no sulphur or potassium nitrate.
- **SAFAL (Safe Minimal Aluminium)** uses less aluminium and more magnesium for reduced noise.

Features

- Green firecrackers are **eco-friendly alternatives** designed to reduce pollution and health risks during celebrations.
- They emit **30–35% less particulate matter** and harmful gases like SO₂, NO_x, and CO, and exclude toxic substances such as barium nitrate.
- They are developed and approved by CSIR labs (NEERI and CEERI).
- They comply with prescribed noise limits and are identifiable by green logos and QR codes.

Source :TH

WTI FOUNDER MENON BECOMES FIRST ASIAN TO CHAIR KEY IUCN PANEL

In News

- The International Union for Conservation of Nature (IUCN) elected Wildlife Trust of India's (WTI) founder Vivek Menon as the new chair of the Species Survival Commission (SSC), making him the first Asian to hold the post.

Species Survival Commission (SSC)

- The IUCN Species Survival Commission (SSC) is a science-based network of more than 10,500 volunteer experts from almost every country of the world.
- It is one of the six expert commissions under the global body that advises the IUCN secretariat on matters concerning biodiversity and species conservation.
- The commission and its specialist groups play a key role in preparing the IUCN's red list of threatened species.

Do You Know?

- The International Union for Conservation of Nature (IUCN), founded in 1948, is the world's largest and most diverse environmental network, comprising over 1,400 member organizations and 17,000 experts.
- It serves as a global authority on nature conservation, offering a neutral platform for governments, NGOs, scientists, businesses, and communities to collaborate on sustainable development.
- It incubates ideas, sets international standards, and implements conservation projects that blend scientific research with traditional knowledge to restore ecosystems, combat habitat loss, and enhance human well-being.

Source :IE

SEVENTH NATIONAL SECURITY GUARD (NSG) HUB TO COME UP IN AYODHYA

In News

- Union Home Minister Amit Shah announced that a **new NSG hub will be set up in Ayodhya, Uttar Pradesh.**
 - ♦ This will be the seventh NSG hub, joining existing ones in Mumbai, Chennai, Kolkata, Hyderabad, Ahmedabad, and Jammu.

About National Security Guard (NSG)

- The National Security Guard (NSG) was established in 1986 as a Federal Contingency Force to combat terrorism, following a Cabinet decision in 1984.
- It is modeled on the UK's SAS and Germany's GSG-9, its philosophy emphasizes swift strikes and rapid withdrawal.
- It comprises **two units**: the **Special Action Group (Army)** and **Special Ranger Groups (CAPFs/ State Police)**, tasked with handling all forms of terrorism nationwide.
- It was established to create a Federal Contingency Force composed of highly motivated, specially equipped, and well-trained personnel to combat terrorism.

Source :TH

EXERCISE SAMUDRA SHAKTI 2025

Context

- The Indian Navy is hosting the fifth edition of the Indo-Indonesian Joint Bilateral Maritime Exercise, **'Samudra Shakti – 2025'** at Visakhapatnam.

About

- Exercise **'Samudra Shakti'** is a key bilateral engagement aimed at enhancing interoperability, strengthening mutual understanding, and sharing best practices between the two navies.
 - ♦ The exercise was first conducted in **2018**.
- **Exercise Phases:**
 - ♦ **Harbour Phase:** Aimed at building camaraderie and professional understanding.
 - ♦ **Sea Phase:** Focused on complex operational coordination. Includes Helicopter Operations, Air Defence Exercises, Weapon Firing Drills, and Visit, Board, Search and Seizure (VBSS) exercises.

Source: TH

DR. APJ ABDUL KALAM

Context

- Birth anniversary of former **President Dr. A.P.J. Abdul Kalam (1931–2015)** was observed recently.

About

- Born on 15 October in Rameswaram, Tamil Nadu, he was a renowned aeronautical engineer and scientist, widely known as the “Missile Man of India.”
- As Project Director at ISRO, he led the development of **India’s first Satellite Launch Vehicle (SLV-III)**, successfully **launching the Rohini satellite** in 1980.

- Later, at **DRDO**, he spearheaded the **Integrated Guided Missile Development Programme (IGMDP)**, overseeing the development of the **AGNI and PRITHVI** missiles and India’s nuclear capabilities, including the **Pokhran-II nuclear tests**.
- He served as the **11th President of India** (2002–2007) and is fondly remembered as the ‘People’s President.’
- His literary works include **Wings of Fire, India 2020, My Journey, and Ignited Minds**.
- He was awarded the **Padma Bhushan** (1981), **Padma Vibhushan** (1990), and the highest civilian honour, **Bharat Ratna** (1997).

Source: PIB

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