

WEEKLY NEWS

July 21-27, 2024

Greenium in Indian Sovereign Green Bonds



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'Dark' Oxygen




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HIGHLIGHTS

- White Category
- Sectors
PCA Framework
- Union Budget
'24-'25

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Article 361

● Why in News?

- ➡ The Supreme Court has agreed to examine the constitutional provision granting immunity to Governors under **Article 361**.

● About Article 361

- ➡ **Exception to Article 14:** Grants Presidents and Governors immunity from being answerable to any court for the exercise of their powers and duties.
- ➡ **Parliamentary Oversight:** Parliament can review the President's conduct through designated investigative bodies as outlined in Article 61.
- ➡ **Criminal Immunity:** Presidents and Governors are immune from criminal proceedings while in office and cannot be arrested or imprisoned by court order.
- ➡ **Civil Suits:** Any civil suit against the President or Governor requires a two-month notice before filing.

● Significance

- ➡ **Protection of Office:** Ensures the President and Governors can perform their duties without the fear of litigation.
- ➡ **Separation of Powers:** Maintains a clear distinction between the judiciary and executive branches of government.

● Challenges and Considerations

- ➡ **Accountability:** Balancing immunity with the need for accountability and transparency in office.
- ➡ **Scope of Immunity:** Clarifying the extent of immunity and under what circumstances it may be challenged or reviewed.

● Way Forward

- ➡ **Judicial Review:** Supreme Court's examination of Article 361 could lead to a re-evaluation of the extent and limitations of the immunity provision.
- ➡ **Legislative Action:** Potential amendments to provide clearer guidelines on the application and boundaries of immunity for Presidents and Governors.

China's Dominance in LiDAR Technology

● Why in News?

- ➔ **Security Concerns:** China's dominance in LiDAR (Light Detection and Ranging) technology has raised national security concerns worldwide due to its critical applications in both commercial and military fields.

● About LiDAR

- ➔ **Definition:** LiDAR is a dual-use optical remote sensing technology that uses pulsed laser light to measure distances and map the surrounding environment.

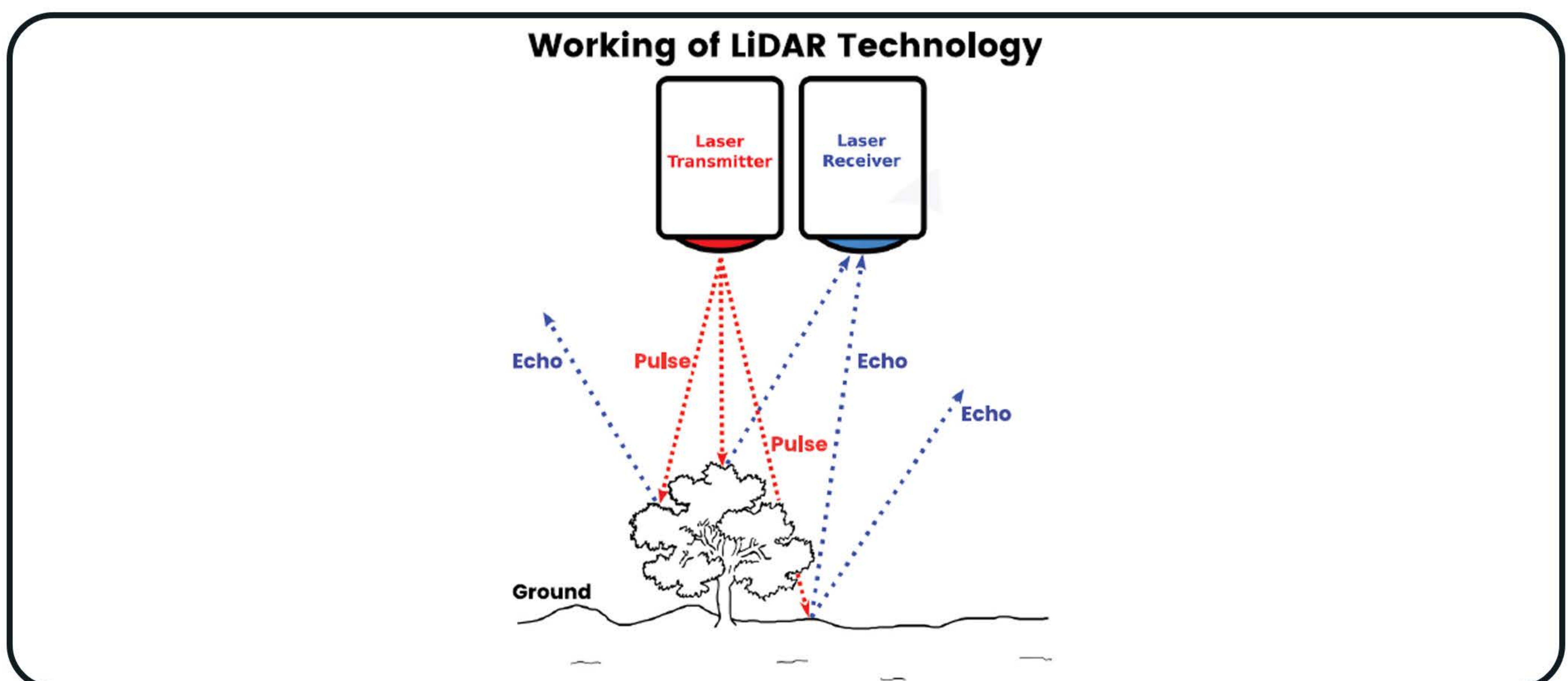
- ➔ **Working Principle:**

Consists of three main components: a laser emitter, scanning mechanism, and specialized GPS receiver.

Similar to RADAR (uses microwaves) and SONAR (uses sound waves), LiDAR uses light waves to detect and track objects.

● Types of LiDAR

- ➔ **Topographic LiDAR:** Uses near-infrared lasers to map land surfaces.
- ➔ **Bathymetric LiDAR:** Utilizes water-penetrating green light to measure seafloor and riverbed elevations.



● **Applications of LiDAR**

➡ **Agriculture:**

Measuring agricultural landscapes and topography.
 Estimating crop biomass and detecting soil properties.

➡ **Aerospace and Defense:**

Terrain mapping, target tracking, and imaging through clouds.
 Used for mission planning with sophisticated battlefield visualizations.

➡ **Automotive:**

Essential for advanced driver-assistance systems (ADAS) and autonomous vehicles to navigate roads using 3D LiDAR map data.

➡ **Other Uses:**

Weather forecasting.
 Mapping environments in virtual reality (VR) and augmented reality (AR) applications.

● **Way Forward**

➡ **Diversification of Suppliers:** Reduce reliance on a single country by diversifying suppliers and developing domestic capabilities.

➡ **Innovation and Research:** Invest in research and development to advance LiDAR technology and explore alternative solutions.

➡ **International Collaboration:** Engage in international collaborations to ensure the secure and ethical use of LiDAR technology.

➡ **Regulation and Standards:** Implement regulations and standards to safeguard sensitive data and technology.

● China's leadership in LiDAR technology poses significant implications for national security and global technological landscapes. It is essential for countries to address these concerns through strategic planning and international cooperation.



Non-Aligned Movement (NAM)

● Why in News?

- ➔ The Non-Aligned Movement (NAM) has called for the removal of Cuba from the USA's unilateral list of 'State Sponsors of Terrorism'.
- ➔ This list includes countries alleged to sponsor international terrorism and subjects them to economic, commercial, and financial coercive measures by the US.
- ➔ Current list includes North Korea, Iran, Syria, and Cuba.

● Significance

- ➔ NAM's support for Cuba underscores its importance to Global South countries.

● Non-Aligned Movement (NAM)

- ➔ **Origins:** Traces back to the 1955 Asia-Africa Conference in Bandung, Indonesia; first conference held in Belgrade, Serbia, in 1961.
- ➔ **Purpose:** Established as an alternative to the dominance of Cold War superpowers (USA and Russia), aiming to establish a New International Economic Order.

● Contemporary Relevance of NAM for Global South

- ➔ **Collective Voice:** All 120 NAM members are from the Global South.
- ➔ **Alternative to Renewed Power Contest:** Amid Cold War-like geopolitical competition from the Russia-Ukraine War, non-alignment and peaceful coexistence are crucial for the Global South.
- ➔ **Realist Statecraft:** NAM provides autonomy in decision-making and flexibility for countries to act in their best interests.
- ➔ **Adoption by Groupings:** Groups like ASEAN, BRICS, African Union, and G77 (dominated by NAM members) have adopted NAM agendas, such as demanding reforms in multilateral institutions.



● **Challenges and Considerations**

- ➡ **Global Influence:** The effectiveness of NAM's call and its impact on US policies.
- ➡ **Geopolitical Tensions:** Balancing relations between NAM countries and superpowers.
- ➡ **Economic Repercussions:** The impact of coercive measures on NAM member states.

● **Way Forward**

- ➡ **Diplomatic Efforts:** Strengthening diplomatic channels to advocate for Cuba's removal from the list.
- ➡ **Solidarity:** Continued support and solidarity among NAM members to address unilateral measures.
- ➡ **Reforms:** Pushing for reforms in multilateral institutions to better represent Global South interests.



Role of Data Centers in India's Digital Revolution

● Why in News?

- ➔ **New Report Release:** A joint report by **ASSOCHAM** and **PwC** has been released, highlighting the pivotal role of data centers in advancing India's digital landscape.

● About Data Centers & Their Significance

- ➔ **Definition:** Data centers are secure facilities where computing and networking equipment are centralized for collecting, storing, processing, and distributing large volumes of data.

- ➔ **Significance:**

Key enablers of India's digital revolution.

Transforming government services, enabling remote work and education, and fostering start-up innovation.

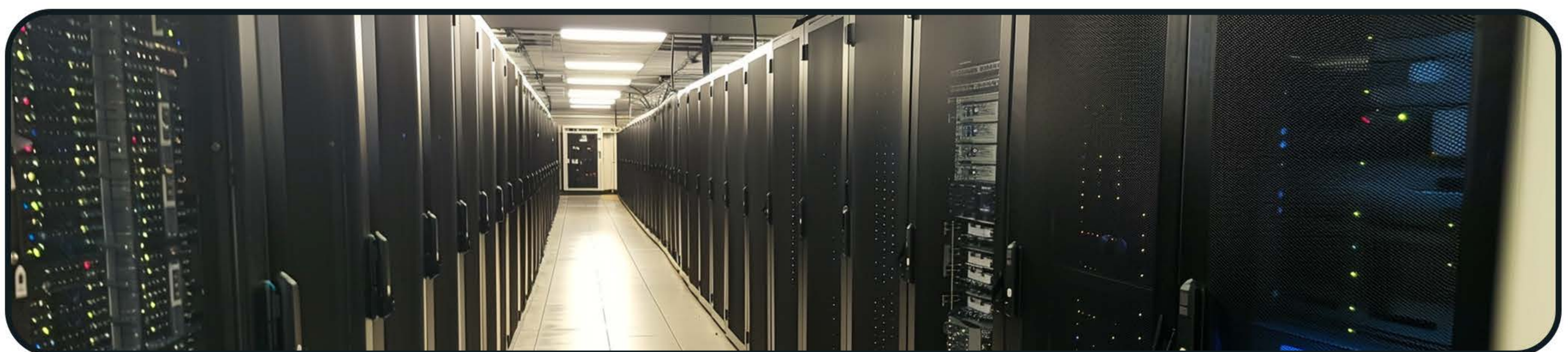
Projected that Indians will consume the most data globally by 2028, surpassing developed markets like the US.

Critical for integrating emerging technologies like **Artificial Intelligence** (AI) and the **Internet of Things** (IoT).

Facilitates data localization by enhancing storage capabilities.

● Key Challenges

- ➔ **Geographic Concentration:** Data centers are predominantly located in cities like Mumbai and Chennai.
- ➔ **Regulatory Complexity:** Issues related to land acquisition, environmental clearances, and other regulations.
- ➔ **High Operational Costs:** Significant expenses due to power consumption and infrastructure maintenance.



● **Key Recommendations**

- ➔ **Regulatory Compliance:** Implement practices such as audit trails and data governance to ensure compliance.
- ➔ **Increased Investment in R&D:** Focus on developing efficient technologies to reduce power consumption.
- ➔ **Other Recommendations:** Develop a data center ecosystem in Tier 2 cities to decentralize infrastructure.

● **Initiatives Taken to Promote Data Center Ecosystem**

- ➔ **Draft Data Centre Policy (2020):** Promotes domestic manufacturing of data center-related products.
- ➔ **National Informatics Centre (NIC):** Established state-of-the-art National Data Centres.
- ➔ **Infrastructure Status:** Data centers with more than 5 MW capacity of IT load have been given infrastructure status.
- ➔ **State Policies:** Examples include Maharashtra's IT and ITES Policy 2023, which offers incentives to the data center industry.
- ➔ **Hyperscale Data Centers:** India's first hyperscale data center, 'Yotta D1,' has been set up in Greater Noida, Uttar Pradesh.

● **Way Forward**

- ➔ **Decentralization:** Promote the development of data centers in Tier 2 and Tier 3 cities.
 - ➔ **Regulatory Simplification:** Streamline regulations to facilitate easier establishment and operation of data centers.
 - ➔ **Sustainable Practices:** Encourage the adoption of energy-efficient technologies and renewable energy sources.
- The report underscores the strategic importance of data centers in India's digital transformation, highlighting the need for continued investment, policy support, and innovation.



State of the World's Forests 2024 Report by FAO

● Why in News?

- ➔ **FAO Report Release:** The Food and Agriculture Organization (FAO) has released the "State of the World's Forests 2024" report.
- ➔ **Theme:** The theme for this year is "Accelerating forest solutions through innovation."

● Key Highlights

- ➔ **Deforestation Rate:** The global deforestation rate declined to 10.2 million hectares (ha) per year in 2015–2020, down from 15.8 million ha per year in 1990–2000.
- ➔ **India's Ranking:** India ranked 3rd globally for average annual net gain in forest area from 2010-2020.
- ➔ **Non-Timber Forest Products:** Support the livelihoods of approximately 275 million people in India.

● Need for Innovation in the Forest Sector

- ➔ **Climate Change Resilience:** Address climate-related stressors such as wildfires and pests through innovative forest and land management strategies.
- ➔ **Shift Towards Bioeconomy:** Promote a zero-carbon bioeconomy through diverse and efficient wood-based products.
- ➔ **Opportunity from Non-Wood Products:** Utilize wild forest-based foods, including fish, rich in micronutrients, to enhance nutrition.



● **Types of Innovation Enhancing Forest Solutions**

➡ **Technological Innovation:**

Remote sensing and cloud computing improve forest data quality and management.
Examples: NASA's Landsat and ESA's Copernicus programs.

➡ **Social, Policy, and Institutional Innovation:**

Innovations to engage women, youth, and Indigenous Peoples.

Example: India's Joint Forest Management Programme mandates 1/3rd female representation on committees.

➡ **Financial Innovation:**

Enhance the value of standing forests and support restoration efforts.

Example: SCRIPT (Soft Commodity Risk Platform).

● **Barriers to Innovation in the Forest Sector**

➡ **Lack of Innovation Culture:** Discourages curiosity, creativity, and risk-taking.

➡ **Capital Limitations:** Include deficiencies in skills, limited access to forests, and restricted tenure rights.

➡ **Lack of Policy Support:** Impedes the adoption of new technologies.

● **Recommendations to Scale Up Innovation**

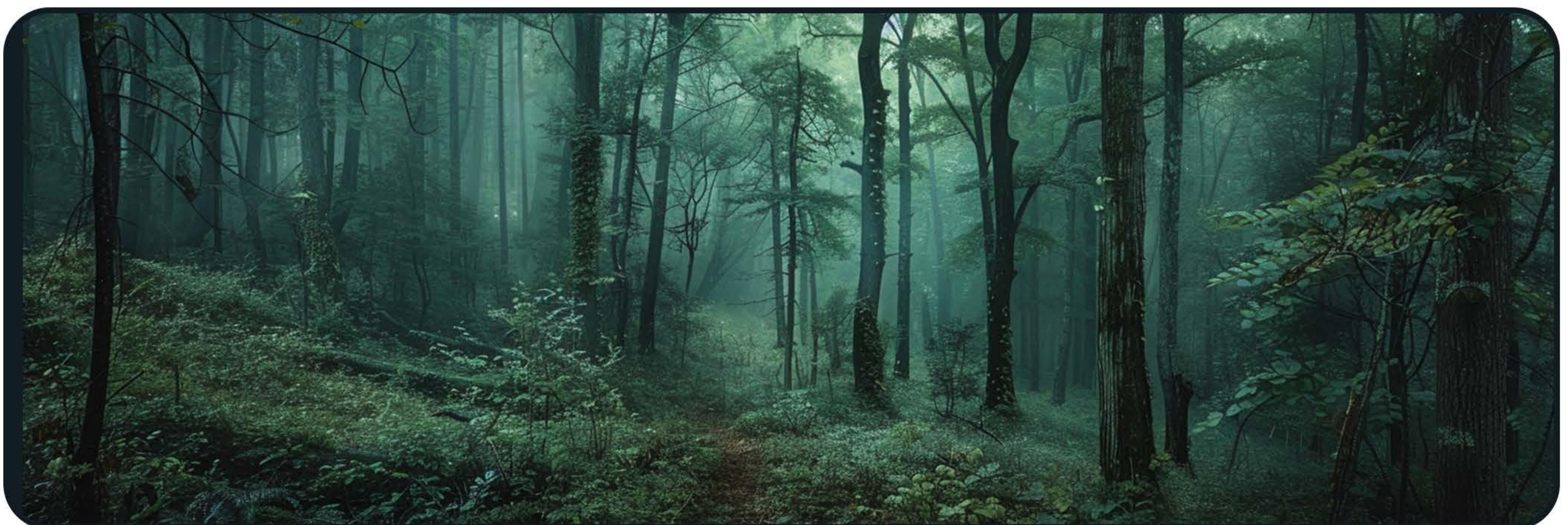
➡ **Recognize and Reward Innovation:** Fostering a culture that encourages innovation.

➡ **Skill and Knowledge Development:** Ensure stakeholders have the capacity to manage innovation.

➡ **Facilitate Knowledge and Technology Transfer:** Provide opportunities for technology transfer and build appropriate safeguards.

➡ **Accessible Financial Resources:** Ensure financial resources are universally accessible to support innovation in the forest sector.

● The report emphasizes the critical role of innovation in addressing global challenges related to forests and calls for concerted efforts to foster an environment conducive to innovation.



NOvA Collaboration's New Neutrino Findings

● **Why in News?**

- ⇒ The International NOvA collaboration has revealed new insights into the properties of neutrinos.

● **About NOvA**

- ⇒ **Experiment Name:** NuMI Off-axis νe Appearance (NOvA)
- ⇒ **Location:** United States
- ⇒ **Participation:** Includes several Indian institutes
- ⇒ **Objective:** To study the properties and behaviors of neutrinos

● **Key Findings**

- ⇒ **Varieties:** Neutrinos come in three types—muon, electron, and tau.
- ⇒ **New Results:** NOvA suggests there are two lighter neutrinos and one heavier neutrino, supporting the Normal Order Theoretical Model.

● **About Neutrinos**

- ⇒ **History:** Hypothesized by physicist Wolfgang Pauli in 1930.
- ⇒ **Nature:** Subatomic particles with no electric charge and small mass.
- ⇒ **Abundance:** Second most abundant particles after photons and the most abundant among matter particles.
- ⇒ **Detectability:** Difficult to detect due to rare interactions with other particles; often called "Ghost Particles."
- ⇒ **Neutrino Oscillation:** A phenomenon where a neutrino changes its type as it travels, e.g., electron neutrinos from the Sun transforming into muon and tau neutrinos by the time they reach Earth.
- ⇒ **Sources:** Produced by interactions involving leptons, found in both natural (e.g., cosmological neutrinos) and man-made (e.g., reactor neutrinos) sources.

● **Key Significance of Studying Neutrinos**

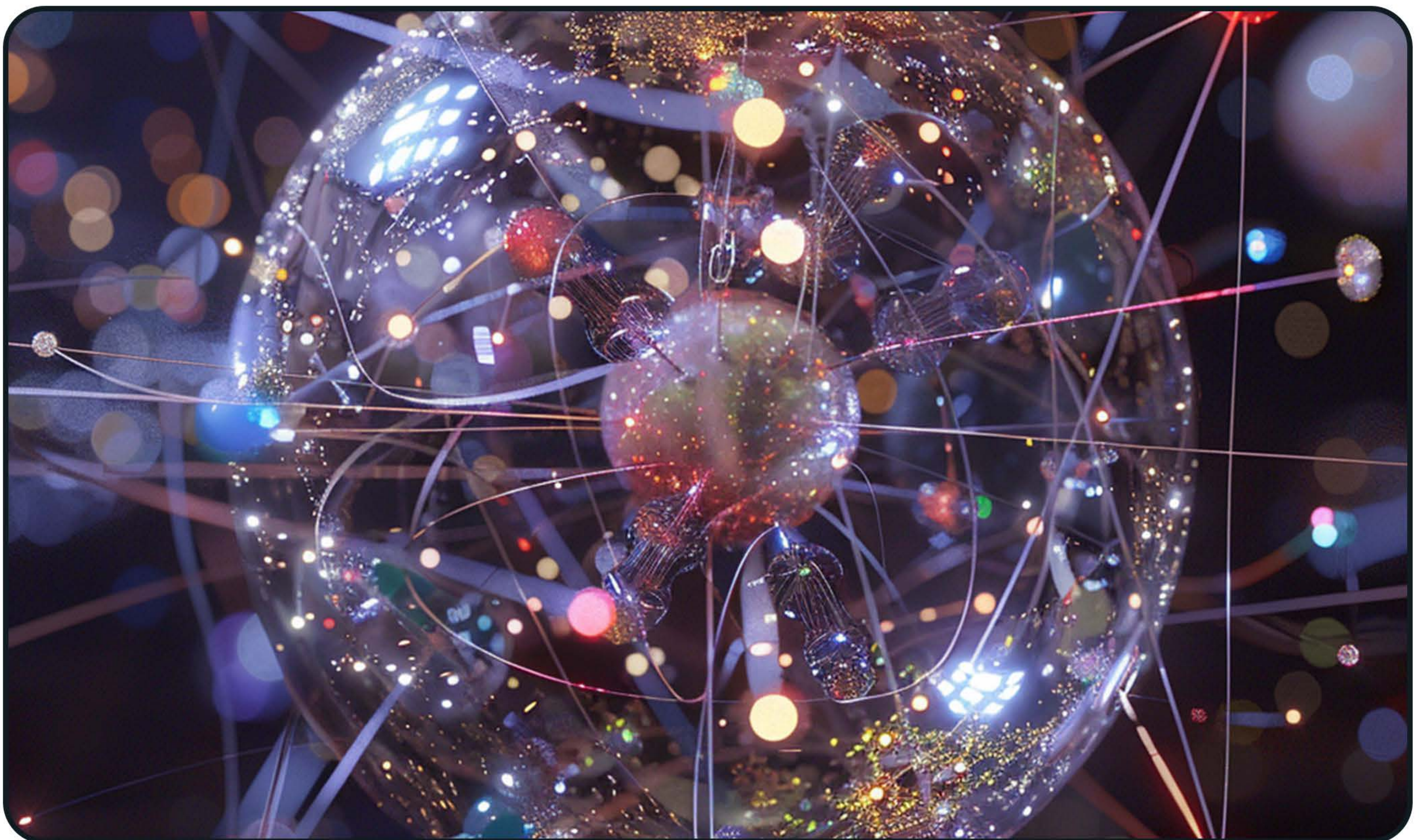
- ➡ **Universe Exploration:** Helps understand the formation and functioning of the universe.
- ➡ **Future Communication:** Potential for long-distance communication due to neutrinos' ability to pass through matter.

● **Key Observatories**

- ➡ **Indian Neutrino Observatory (INO):** Located in Theni District, Tamil Nadu, funded by the Department of Atomic Energy and the Department of Science and Technology.
- ➡ **China's TRIDENT:** Tropical Deep-sea Neutrino Telescope.
- ➡ **IceCube:** The world's largest neutrino telescope.

● **Way Forward**

- ➡ Continued international collaboration and investment in neutrino research to further understand the universe and explore potential technological applications.



Greenium in Indian Sovereign Green Bonds

● Why in News?

- ➡ **Economic Survey 2023-24 Findings:** The survey highlighted that Indian sovereign green bonds received minimal Greenium from private investors.

● About Green Bonds

- ➡ **Definition:** Green bonds are debt instruments used to finance projects or activities that are classified as 'green' under national or international green taxonomies.

● About Greenium

- ➡ **Definition:** Greenium refers to the pricing benefit where investors are willing to pay more or accept lower yields for investments that have a positive sustainable impact, as per the United Nations Development Programme (UNDP).
- ➡ **Significance:** It represents the additional cost associated with choosing clean technologies over more polluting alternatives.

● Key Insights

- ➡ **Minimal Greenium:** The Economic Survey noted that Indian sovereign green bonds did not attract significant Greenium from private investors, indicating limited market differentiation based on the sustainability credentials of these bonds.

● Way Forward

- ➡ **Promote Awareness:** Increase awareness among investors about the benefits of investing in green bonds.
 - ➡ **Strengthen Green Credentials:** Enhance the credibility of green projects to attract more investors willing to pay Greenium.
 - ➡ **Policy Support:** Implement policies that incentivize investment in green technologies and projects.
- The concept of Greenium is crucial for understanding the financial dynamics of sustainable investments and encouraging a shift towards environmentally friendly projects.

Industrial Parks

● Why in News?

- ➡ The Union Budget 2024-25 proposes the creation of twelve new industrial parks under the National Industrial Corridor Development Programme (NICDP).

● About Industrial Parks

- ➡ **Definition:** Industrial parks are economic zones specifically developed to house clusters of industrial activities.
- ➡ **Example:** Andhra Pradesh's Sri City Special Economic Zone.

● Significance

- ➡ **Employment Generation:** Industrial parks create job opportunities.
- ➡ **Infrastructure Sharing:** Promotes the sharing of common infrastructure, enhancing productivity and competitiveness.
- ➡ **FDI Attraction:** Attracts Foreign Direct Investment, expanding manufacturing activities.

● National Industrial Corridor Development Programme (NICDP)

- ➡ **Aim:** To develop industrial corridors and futuristic industrial cities that can compete globally.
- ➡ **Projects:** Includes 11 industrial corridors consisting of 32 projects, developed in four phases.
- ➡ **Notable Project:** The first Industrial Corridor—Delhi Mumbai Industrial Corridor—was approved in 2007.
- ➡ **Implementation Framework:** Managed by the National Industrial Corridor Development and Implementation Trust (NICDIT) and the National Industrial Corridor Development Corporation Limited (NICDC).
- ➡ **Oversight:** An Apex Monitoring Authority, chaired by the Finance Minister, reviews implementation.

● Way Forward

- ➡ **Development of Plug and Play Industrial Parks:** The government aims to develop investment-ready industrial parks with complete infrastructure in or near 100 cities, in partnership with states and the private sector, utilizing town planning schemes.



Union Budget 2024-25

● Why in News?

- ➔ **Budget Presentation:** The Union Budget 2024-25 was presented, emphasizing key areas such as employment, skilling, MSMEs, and middle-class welfare.

● About the Budget

- ➔ **Constitutional Basis:** The budget is presented under Article 112 of the Constitution, formally known as the '**Annual Financial Statement.**'

● Key Highlights

- ➔ **Prime Minister's Package:** A comprehensive package of 5 schemes and initiatives aimed at providing employment, skilling, and other opportunities for 4.1 crore youth over the next five years.
- ➔ **Custom Duties:** Rationalization to support domestic manufacturing, increase local value addition, promote export competitiveness, and simplify the taxation system.
- ➔ **Taxation Reforms:**
 - New Tax Regime:** Revision of tax rate structure.
 - TDS Rate Reduction:** Reduced rates on certain payments and for e-commerce operators.
 - Capital Gains Tax:**
 - Short-term gains taxed at 20%.
 - Long-term gains taxed at 12.5%.
 - Increased exemption limit for capital gains on certain financial assets to ₹1.25 lakh per year.
- ➔ **Vivad Se Vishwas Scheme, 2024:** A proposed scheme for resolving income tax disputes.
- ➔ **Corporate Tax:** Reduction in corporate tax rate for foreign companies from 40% to 35%.
- ➔ **Securities Transaction Tax:** Increased for futures and options of securities.
- ➔ **Equalization Levy:** The 2% levy has been withdrawn.
- ➔ **Benami Transactions:** Immunity from penalty and prosecution to benamidars on full and true disclosure, aiming to improve conviction rates under the Benami Transactions (Prohibition) Act, 1988.

● **Way Forward**

- ➡ **Implementation of Schemes:** Focus on the effective implementation of employment and skilling schemes.
- ➡ **Boost to Domestic Manufacturing:** Further rationalization of duties and support measures to strengthen domestic industries.
- ➡ **Tax Simplification:** Continue efforts to simplify the tax structure and reduce compliance burdens.
- ➡ **Enhanced Investor Confidence:** Build on the tax reforms to attract both domestic and foreign investment.

The Union Budget 2024-25 seeks to address critical areas of economic growth, with a strong emphasis on creating opportunities for the youth, simplifying the tax regime, and fostering a conducive environment for business and investment.



Split Verdict on GM Mustard Approval

● Why in News?

- ➡ The Supreme Court delivered a split verdict on Public Interest Litigations (PILs) challenging the approval for the environmental release of Genetically Modified (GM) Mustard.
- ➡ In October 2022, the Genetic Engineering Appraisal Committee (GEAC) and the Union Ministry of Environment, Forest, and Climate Change approved the environmental release of GM Mustard (HT Mustard DMH-11).
- ➡ The release was later put on hold following a Supreme Court order to maintain the status quo.

● Key Highlights of the Judgment

- ➡ Judicial review of GEAC's decisions is permissible.
- ➡ The Union government is urged to develop a national policy on GM crops, consulting all stakeholders, including states and farmers' groups.
- ➡ Provisions of the FSSAI Act should be enforced regarding the import of GM food.

● About GM Crops

- ➡ **Definition:** GM crops are those whose genetic material has been modified through laboratory techniques, incorporating genes from other organisms.
- ➡ **Significance:** They offer benefits like increased crop yields, pest resistance, and climate adaptation.
- ➡ **Concerns:** Potential risks include allergic reactions, antimicrobial resistance, and immune suppression.
- ➡ **Status in India:** Bt cotton is the only GM crop approved for cultivation since 2002.

● Approval Process for GM Crops in India

- ➡ **Regulatory Framework:** The approval process is governed by the 1989 Rules for the Manufacture, Use, Import, Export, and Storage of Hazardous Microorganisms, Genetically Engineered Organisms or Cells, notified under the Environment (Protection) Act, 1986.
- ➡ **GEAC's Role:** The GEAC is responsible for appraising proposals related to the release of genetically engineered organisms and products, including field trials. It functions under the Union Ministry of Environment, Forest, and Climate Change.

● **Way Forward**

- ➔ The Supreme Court's examination and potential judicial review of GEAC's decisions could lead to a more robust regulatory framework.
- ➔ Developing a comprehensive national policy on GM crops, including transparent consultation processes, is crucial for addressing public concerns and ensuring sustainable agricultural practices.



Kalarippayattu

● Why in News?

- ➡ **Official Recognition:** The Union Ministry of Youth Affairs and Sports has recognized the Indian Kalarippayattu Federation as the Regional Sports Federation to promote Kalarippayattu in India.

● About Kalarippayattu

- ➡ **Origin:** Kalarippayattu is an ancient martial art that originated in Kerala and is considered one of the oldest martial arts in the world.
- ➡ **Characteristics:**
 - Known for high-flying acrobatics and graceful movements.
 - Utilizes a variety of deadly weapons with ease.

● Styles of Kalarippayattu

- ➡ **Vadakkan (Northern) Style:** Predominantly practiced in the Malabar region of Kerala.
- ➡ **Thekken (Southern) Style:** Mainly practiced in the Travancore region.

● Significance and Way Forward

- ➡ **Cultural Heritage:** Kalarippayattu is an important part of India's cultural heritage and martial arts tradition.
 - ➡ **Promotion and Support:** The recognition of the Indian Kalarippayattu Federation will help in promoting and preserving this ancient art form, encouraging its practice and growth across the country.
 - ➡ **Training and Infrastructure:** Investment in training facilities and infrastructure will support the development of Kalarippayattu as a mainstream sport.
 - ➡ **International Recognition:** Efforts can be made to gain international recognition and support for Kalarippayattu as a global martial art.
- The recognition of the Indian Kalarippayattu Federation marks a significant step towards the promotion and preservation of this ancient martial art, ensuring its continued relevance and growth in modern times.

Angel Tax

● Why in News?

- ➔ The Union Budget 2024-25 announces the **removal of the angel tax** for all investors, effective April 1, 2025.

● About Angel Tax:

- ➔ **Introduction:** Introduced in **2012** under the **Finance Act, 2012**.
- ➔ **Legislation:** Falls under **Section 56(2) (viib)** of the **Income Tax Act, 1961**.
- ➔ **Definition:** Tax imposed on the funding raised by unlisted companies, or startups, if their valuation exceeds the company's **fair market value (FMV)**.
- ➔ **FMV:** The price set for selling or purchasing an asset in the open market.
- ➔ **Tax Rate:** The excess amount was treated as income and taxed at a rate of **30.9%**.
- ➔ **Purpose:** Aimed to curb money laundering and prevent tax avoidance.

● Reasons for Scrapping:

- ➔ **Reduce Compliance Burden:** To ease the regulatory requirements for startups.
- ➔ **Assessment Methodology:** The use of the discounted cash flow (DCF) method by assessing officers was deemed unfavourable for startups.
- ➔ **DCF Method:** Evaluates investments by discounting the estimated future cash flows.
- ➔ **Impact on FDI:** The tax was seen as a deterrent to foreign direct investment (FDI) in India.
- ➔ **Alignment with Government Initiatives:** The move aligns with the government's Startup India initiative.



● **Startup India Initiative:**

- ➡ **Launch:** Started in 2016.
- ➡ **Objective:** To support entrepreneurs, build a robust startup ecosystem, and transform India into a country of job creators rather than job seekers.
- ➡ **Implementation:** Led by the Department for Promotion of Industry and Internal Trade (DPIIT).

● **Way Forward:**

- ➡ Continued support for startups and a more favourable investment environment are expected to encourage growth and innovation in India's startup ecosystem.



The State of Food Security and Nutrition in the World Report, 2024

● **Why in News?**

- ➔ **Report Release:** The 2024 report on the state of food security and nutrition has been released, prepared by five United Nations specialized agencies: FAO, IFAD, UNICEF, WFP, and WHO.
- ➔ **Theme:** The focus is on financing to end hunger, food insecurity, and malnutrition in all its forms.

● **Need for a New Definition**

- ➔ **Lack of Coherent Financial Data:** There was no clear understanding of the financial resources allocated to food security and nutrition.
- ➔ **Multiple Definitions:** The existence of various definitions led to underfinanced areas, lack of accountability, and difficulty in tracking progress.

● **New Definition of Financing for Food Security and Nutrition**

- ➔ **Definition:** Refers to the public and private financial resources, both domestic and foreign, aimed at eradicating hunger, food insecurity, and all forms of malnutrition.
- ➔ **Goals:**
 - Ensure availability, access, utilization, and stability of nutritious and safe foods.
 - Strengthen the resilience of agrifood systems.

● **Current Gaps in Financing**

- ➔ **Public Spending:** Per capita public spending on agriculture is very low and not consistently growing in low-income and lower-middle-income countries.
- ➔ **Official Development Assistance:** Food security and nutrition receive less than a quarter of official development assistance and other official flows, indicating a lower priority among donors.



● **Status of Food Security and Nutrition**

- ➡ **SDG 2 Progress:** The world is far from achieving Sustainable Development Goal 2, Zero Hunger.
- ➡ **Global Hunger:** In 2023, 1 in 11 people faced hunger worldwide.
- ➡ **Undernourishment:** Between 713 and 757 million people were estimated to be undernourished in 2023.
- ➡ **Food Insecurity:** An estimated 28.9% of the global population was moderately or severely food insecure in 2023.

● **Way Forward**

- ➡ **Increase Financing:** Enhance public and private investments in food security and nutrition, especially in low-income and lower-middle-income countries.
 - ➡ **Prioritize Aid:** Elevate the priority of food security and nutrition in official development assistance and other international support.
 - ➡ **Strengthen Agrifood Systems:** Focus on building resilient agrifood systems to ensure long-term food security and nutrition.
- The report underscores the urgent need for increased and more effective financing to address global challenges related to hunger, food insecurity, and malnutrition, and highlights the gaps and priorities in achieving these goals.



'Dark' Oxygen

● Why in News?

- ➔ **Scientific Discovery:** Scientists have discovered a phenomenon called 'dark' oxygen at a depth of 13,100 feet in the Pacific Ocean.

● About Dark Oxygen

- ➔ **Origin:** Dark oxygen is generated by metallic nodules present on the ocean seafloor.

- ➔ **Process:**

These natural metal formations act as catalysts, facilitating the splitting of seawater (H₂O) into hydrogen and oxygen.

This process occurs without the need for sunlight, challenging the previous understanding that most oxygen production in oceans is due to marine plants performing photosynthesis.

● Significance of the Discovery

- ➔ **Challenging Existing Paradigms:** The finding challenges the existing paradigms about oxygen production, particularly in the Earth's most inaccessible marine environments.
- ➔ **Implications for Marine Ecology:** Understanding dark oxygen production could have significant implications for the study of deep-sea ecosystems and their oxygen sources.

● Way Forward

- ➔ **Further Research:** Additional studies are needed to explore the extent and impact of dark oxygen production in deep-sea environments.
 - ➔ **Potential Applications:** Investigating the catalytic properties of metallic nodules may lead to new technological applications in oxygen generation and hydrogen production.
- The discovery of dark oxygen represents a significant shift in our understanding of oxygen dynamics in the deep ocean and opens new avenues for research in marine science and environmental studies.



Economic Case for Investment in the Well-being of Adolescents in India

● **Why in News?**

- ➔ **Report Release:** The Ministry of Health & Family Welfare has released a report titled "Economic Case for Investment in the Well-being of Adolescents in India," highlighting the potential high returns from investing in adolescent well-being.

● **Key Highlights**

- ➔ **Adolescent Population:** India has the largest adolescent population in the world, with 253 million individuals aged 10-19.
- ➔ **Mortality and Fertility Rates:**
 - Adolescent mortality rate has fallen by over 50%.
 - Adolescent fertility rate declined by 83% from 2000 to 2019.
- ➔ **Education:** The percentage of young people completing secondary school has more than doubled, from 22% in 2005 to over 50% in 2020.
- ➔ **Road Accidents:** There has been a 22.7% rise in fatal road accidents among adolescents under 18 (2021-2022).
- ➔ **Economic Impact:** Suggested interventions could potentially boost India's economy by 10.1% of the annual GDP.

● **Issues Faced by Adolescents**

- ➔ **Health:** Unplanned pregnancies, malnutrition, and mental disorders such as depression and anxiety.
- ➔ **Education and Employment:** Stagnant learning outcomes and unemployment challenges, particularly due to emerging technologies like AI.
- ➔ **Child Marriage:** Although the incidence of girls marrying before 18 has declined by over half (2006-2024), 1 in 3 of the world's child brides live in India.
- ➔ **Violence and Injury:** High prevalence of road accidents, self-harm, and suicide among adolescents.

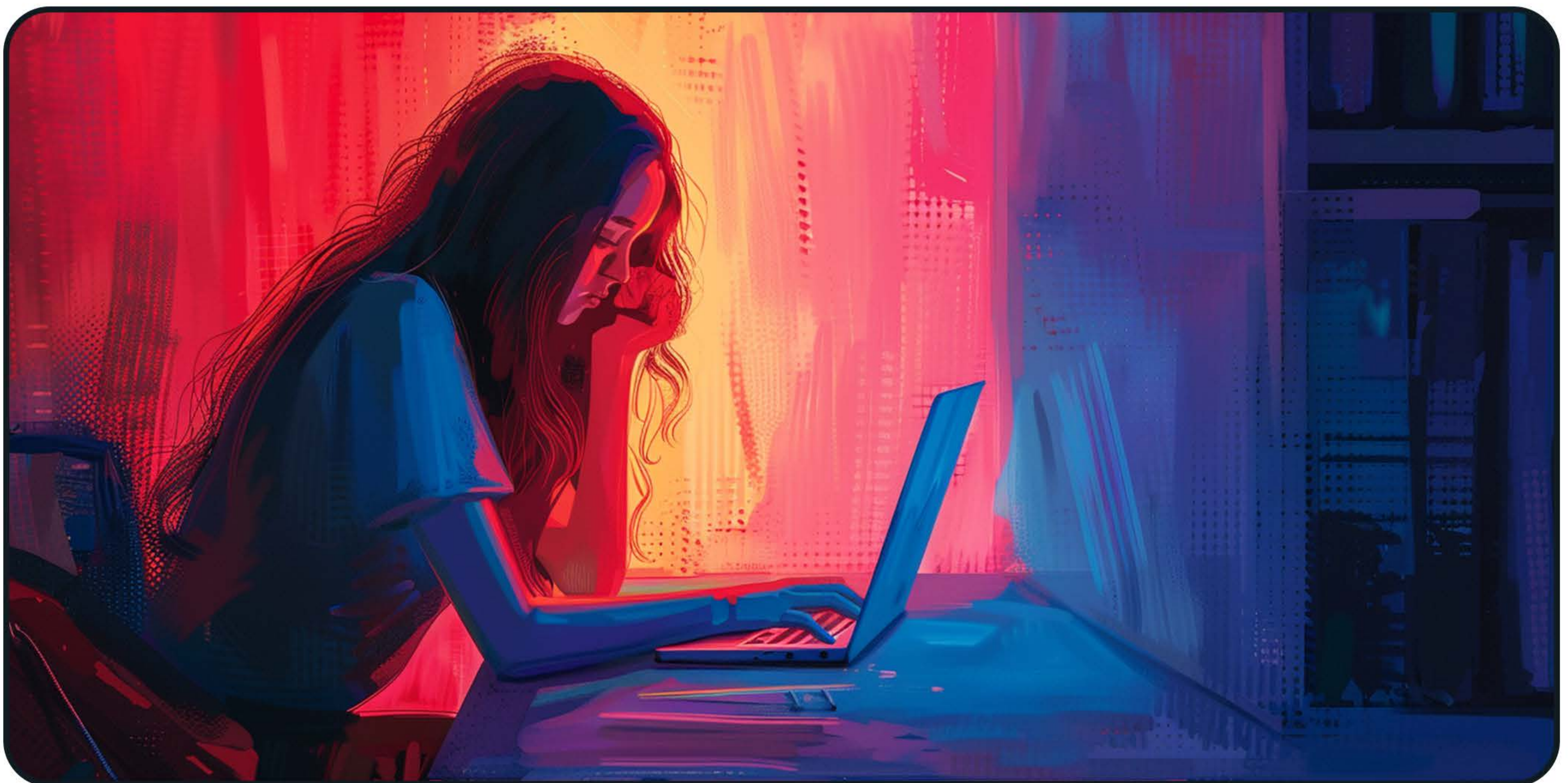


● **Interventions Required**

- ➔ **Education:** Establish schools in underserved areas, improve teaching methods, and provide merit-based scholarships to enhance learning outcomes.
- ➔ **Health:** Prevent and treat common mental disorders, prevent cyberbullying, and address interpersonal violence.
- ➔ **Social Norms:** Impart life skills, provide transfer payments to girls, and work towards changing cultural and social norms to reduce child marriage.
- ➔ **Safety:** Implement graduated licensing schemes to reduce injuries among adolescents.

● **India's Initiatives**

- ➔ **Rashtriya Kishor Swasthya Karyakram:** A program focused on adolescent health.
 - ➔ **National Education Policy 2.0:** Aims to overhaul the education system.
 - ➔ **School Health and Wellness Program under Ayushman Bharat:** Focuses on health and wellness in schools.
 - ➔ **Motor Vehicle Amendment Act 2019 and National Road Safety Policy:** Designed to improve road safety and reduce accidents.
- The report underscores the importance of targeted interventions to improve the well-being of adolescents, which could lead to significant economic and social benefits for India.



₹1000 crore venture capital fund for space economy.

● Why in News?

- ➔ **Venture Capital Fund:** A ₹1000 crore fund has been proposed to expand India's space economy by five times over the next 10 years. This fund will focus on early-stage startups with significant growth potential.

● Indian Space Economy Overview

- ➔ **Current Value:** The Indian space economy is currently valued at around ₹6,700 crore, holding a 2% share of the global space economy in 2021.
- ➔ **Future Projections:** The share is expected to rise to 8% by 2030 and further to 15% by 2047.
- ➔ **Startup Growth:** The number of space startups in India has increased to nearly 200 in 2024, up from just 1 in 2022.
- ➔ **Investment Increase:** Investment in Indian space startups reached \$124.7 million in 2023.
- ➔ **Policy Impact:** The implementation of the Indian Space Policy 2023 is projected to help build a \$44 billion Indian space economy.

● Key Initiatives for Space Economy Growth

- ➔ **IN-SPACe:** The Indian National Space Promotion and Authorisation Centre acts as a single-window nodal agency to promote and authorize space activities.
- ➔ **Space Sector Reform 2020:** This reform opened the space sector to private sector participation.
- ➔ **Indian Space Policy and FDI:** The policy allows 100% foreign direct investment (FDI) in certain sub-sectors of space.
- ➔ **Private Sector Participation:** Notable startups include Skyroot Aerospace (Vikram-S, Prarambh mission) and Agnikul Cosmos (Dhanush - first private launchpad).
- ➔ **Technology Transfer:** ISRO, NSIL, and IN-SPACe are facilitating technology transfers to private players.
- ➔ **International Collaborations:** Initiatives like the NISAR programme and the Artemis Accords highlight India's international collaborations in space.



● **Challenges to the Indian Space Economy**

- ➔ **Space Debris:** The increase in space debris poses significant challenges for safe space operations, requiring advanced technologies to avoid collisions.
- ➔ **Militarisation of Space:** The growing militarisation of space presents strategic challenges.
- ➔ **Supply Chain Risks:** Geopolitical tensions and resource concentration disrupt global technology supply chains.
- ➔ **Investment Shortage:** There is an absence of a substantial domestic investor pool interested in space ventures.

● **Way Forward**

- ➔ **Boosting Investment:** Encourage more domestic and international investments in space startups.
 - ➔ **Technology Development:** Focus on developing technologies to manage space debris and enhance space operations.
 - ➔ **Strengthening Policy Framework:** Continue refining policies to support the private sector and international collaborations in space activities.
 - ➔ **Promoting Innovation:** Foster a culture of innovation and research in space technologies within India.
- This proposed venture capital fund is a significant step towards expanding India's role in the global space economy, leveraging the country's growing private sector and international partnerships.



Lithium Resources in Karnataka

● Why in News?

- ➔ **New Discovery:** The Atomic Minerals Directorate for Exploration and Research (AMD) has discovered 1,600 tonnes of lithium resources in the Mandya district of Karnataka.
- ➔ **Significance:** This discovery is crucial for India's energy transition and industrial development.

● Importance of Lithium

- ➔ **Reduced Import Dependence:** Currently, India imports lithium predominantly from China and Hong Kong. This discovery could reduce dependence on imports.
- ➔ **Self-Sufficiency:** Enhances India's capacity to meet its energy storage needs, particularly for electric vehicles (EVs) and other green technologies.
- ➔ **Industrial Development:** Key for the growth of industries like the automobile and electronics sectors.

● About Lithium

➔ Characteristics:

- A soft, silvery-white alkali metal.
- Lowest density of all metals.
- Toxic in nature.

- ➔ **Designation:** Recognized as a **critical and strategic mineral under the Mines and Mineral (Development and Regulation) (Amendment) Act 2023.**

● Applications of Lithium

➔ Batteries:

Rechargeable lithium-ion batteries for mobile phones, electric vehicles, and other devices.

Non-rechargeable batteries for medical devices like heart pacemakers, and other uses like clocks.

➔ Alloys:

- Alloyed with aluminum and magnesium to enhance strength and reduce weight.
- Used in armor plating, aircraft, bicycle frames, and high-speed trains.

- ➔ **Industrial Use:** Utilized in air conditioning systems, industrial drying systems, and glass ceramics.



● **Steps Taken**

- ⇒ **KABIL:** Exploring strategic minerals in overseas territories.
- ⇒ **Australia-India Critical Minerals Investment Partnership:** Collaboration to secure critical minerals.
- ⇒ **Geological Survey of India (GSI):** Actively exploring lithium reserves within India.
- ⇒ **Ministry of Mines:** Joined the Mineral Security Partnership (MSP) led by the USA to ensure mineral security.

● **Way Forward**

- ⇒ **Exploration and Development:** Enhance domestic exploration and development of lithium resources.
- ⇒ **Partnerships:** Strengthen international partnerships for technology transfer and investment.
- ⇒ **Infrastructure:** Develop infrastructure for lithium processing and battery manufacturing in India.
- ⇒ **Sustainable Mining:** Implement environmentally sustainable mining practices for lithium extraction.



White Category Sectors

● Why in News?

- ➡ **Policy Change:** White category industries will no longer need prior permission from State Pollution Control Boards (SPCBs) to establish and operate under the Air Act, 1981, and the Water Act, 1974.

● Key Highlights

- ➡ **Consent Exemption:** These industries are now exempt from obtaining the 'consent to establish' (CTE) and 'consent to operate' (CTO) permissions, which are usually required to regulate the discharge of effluents and emissions.
- ➡ **Self-Declarations:** Instead of formal permissions, white category industries will need to inform SPCBs through self-declarations.

● White Category Sectors

- ➡ **Definition:** The 'white category' includes industries deemed practically non-polluting by the Central Pollution Control Board (CPCB).
- ➡ **Examples:** Wind and solar power projects, Assembly of air coolers, Bicycle assembly, among others

● Way Forward

- ➡ **Monitoring and Compliance:** SPCBs may still monitor these industries to ensure compliance with environmental standards, even though formal permissions are not required.
 - ➡ **Encouraging Clean Industries:** This exemption aims to encourage the growth of non-polluting industries by reducing regulatory burdens.
 - ➡ **Potential Expansion:** There may be further expansions or adjustments to the list of industries under the white category, depending on their environmental impact.
- This policy shift reflects a move towards simplifying regulatory processes for non-polluting industries, potentially boosting the growth of clean and green businesses in India.

The Impact of Climate Change on Education

● Why in News?

- ➔ The World Bank released a report titled "The Impact of Climate Change on Education," highlighting the significant effects of climate change on education systems globally.

● Key Highlights

- ➔ **Education Overlooked in Climate Policy:** In 2020, education received less than 1.3% of climate assistance funding and was mentioned in fewer than one in three Nationally Determined Contribution (NDC) plans.
- ➔ **School Closures Due to Extreme Weather:** Between 2005 and 2024, schools were closed during 75% of extreme weather events, affecting over 5 million people.
- ➔ **Global Exposure:** Over 99% of children worldwide are exposed to at least one major climate and environmental hazard or shock.
- ➔ **Negative Impact of Rising Temperatures on Learning:** An increase of just 1°C in outdoor temperature on exam days can significantly reduce test scores. For example, students in the hottest 10% of Brazilian municipalities lost about 1% of learning per year due to increasing heat exposure.
- ➔ **Food Insecurity and Economic Fragility:** Up to 170 million people could face hunger by 2080 due to climate change, negatively impacting student enrollment and learning.
- ➔ **Disproportionate Impact on Girls:** Climate-related events prevent at least 4 million girls in low- and lower-middle-income countries from completing their education.



● **Approach to Adapt Education Systems for Climate Change**

➡ **Education Management for Climate Resilience:**

Early Warning Systems: Investment in systems like the InaRISK mobile app in Indonesia enhances disaster preparedness for students and staff.

➡ **School Infrastructure for Climate Resilience:**

Building Resilience: Strengthening existing school buildings to withstand climate events. For instance, Rwanda's project includes retaining walls to mitigate flood- and rainstorm-related landslides.

Temperature Management: Implementing strategies like Kenya's Green Economy Strategy and Implementation Plan, which promotes bioclimatic design to enhance student comfort during high temperatures.

➡ **Ensuring Learning Continuity:**

Keeping Schools Open: Efforts to keep schools operational as much as possible during climate shocks.

Strengthening Remote Learning: Enhancing remote learning mechanisms to ensure continuity. For example, Ghana's back-to-school campaign led to nearly 100% re-enrollment after COVID-19.

● **Way Forward**

- ➡ **Integration in Climate Policy:** Greater inclusion of education in climate policy agendas and funding.
- ➡ **Enhanced Infrastructure and Resources:** Continued investment in infrastructure and resources to support climate resilience in education systems.
- ➡ **Focus on Vulnerable Populations:** Special attention to the needs of vulnerable groups, including girls and children in low-income countries.



PCA Framework for Urban Co-operative Banks

● Why in News?

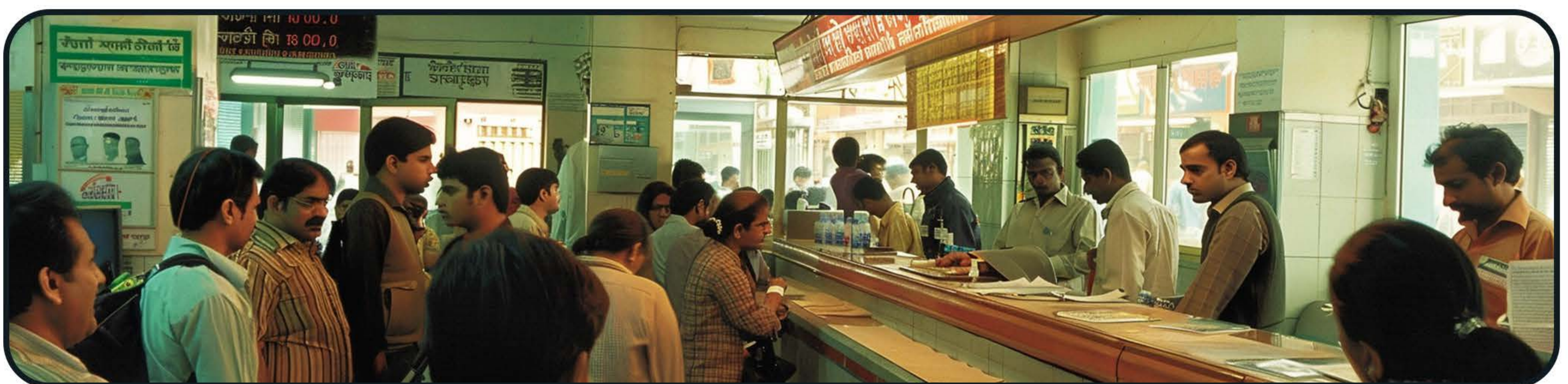
- ➔ The **Reserve Bank of India (RBI)** has introduced a new Prompt Corrective Action (PCA) framework for Primary Urban Co-operative Banks (UCBs).
- ➔ This framework will replace the existing Supervisory Action Framework (SAF) and will be effective from April 1, 2025.

● Key Features of the PCA Framework

- ➔ **Objective:** To enhance the financial health of UCBs with better precision and flexibility.
- ➔ **Applicability:** Targets UCBs in Tier 2, Tier 3, and Tier 4 categories, excluding those under All Inclusive Directions (AID).
- ➔ **Monitoring Focus:** Capital adequacy, asset quality, and profitability of UCBs.
- ➔ **Trigger for PCA:** UCBs may be placed under PCA if they breach certain risk thresholds.
- ➔ **Exit from PCA:** UCBs can exit PCA if they meet risk thresholds across four consecutive quarterly financial statements.

● Challenges Faced by UCBs

- ➔ **High Non-Performing Assets (NPA):** Significant levels of gross NPAs.
- ➔ **Dual Control:** Governed by both RBI and state governments, complicating management.
- ➔ **Lack of Professional Management:** Need for skilled leadership.
- ➔ **Market Competition:** Facing intense competition from Small Finance Banks (SFBs) and FinTech companies.
- ➔ **Geographical Concentration:** Predominantly located in a few states like Andhra Pradesh, Gujarat, Karnataka, Maharashtra, and Tamil Nadu.





About Urban Co-operative Banks (UCBs)

- **Definition:** UCBs are Primary Cooperative Banks situated in urban and semi-urban areas, not formally defined.
- **Dual Control:** Banking functions are regulated by RBI, while registration, management, and other aspects are governed by State Governments.
- **Classification by RBI:**
 - Tier-I: Deposits up to ₹100 crore
 - Tier-2: Deposits more than ₹100 crore and up to ₹1,000 crore
 - Tier-3: Deposits more than ₹1,000 crore and up to ₹10,000 crore
 - Tier-4: Deposits above ₹10,000 crore





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