

WEEKLY NEWS

October 01-05, 2024

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Classical Language Status Granted to Five Languages



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HIGHLIGHTS

- EnviStats India 2024
- Renewable Energy Jobs Report

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Cruise Bharat Mission (CBM) Launched

● Why in News?

- ➔ The **Ministry of Ports, Shipping, and Waterways** launched the **Cruise Bharat Mission** to transform India into a global hub for cruise tourism.

● Mission Overview

- ➔ **Aim:** To position India as a leading global cruise destination and double cruise passenger traffic within five years.

Current passenger traffic (2024): 4.6 lakh

Goal by 2029: Double the traffic and volume of cruise calls.

Target: Increase cruise calls from 254 (2024) to 500 by 2030.

● Phased Implementation

- ➔ **Phase 1 (2024-2025):** Focus on forming cruise alliances with neighboring countries.
- ➔ **Phase 2 (2025-2027):** Develop new cruise terminals and destinations.
- ➔ **Phase 3 (2027-2029):** Integrate all cruise circuits across the Indian Subcontinent.

● Key Cruise Segments

- ➔ **Ocean & Harbour Cruise:** Includes ocean cruises (deep-sea and coastal) and harbour-based yachting and sailing cruises.
- ➔ **River & Inland Cruise:** Focuses on cruises on rivers, canals, backwaters, creeks, and lakes.
- ➔ **Island Cruise:** Highlights inter-island cruises and lighthouse tours.



● **Significance**

- ➡ **Employment Generation:** Expected to create 4 lakh jobs in the revamped cruise sector.
- ➡ **Cultural Promotion:** Encourages the exploration of India's cultural, historical, and natural circuits.
- ➡ **Infrastructure Development:** World-class cruise infrastructure that can also support maritime trade.

● **Way Forward**

- ➡ Strategic partnerships with neighbouring countries and cruise companies.
- ➡ Infrastructure investments for terminal development and cruise circuits.
- ➡ Promotion of tourism and maritime trade for long-term growth.



India BioEconomy Report 2024

● Why in News?

- ➡ The **India BioEconomy Report 2024** was launched at the **4th Global Bio India Summit** by the **Department of Biotechnology** and **BIRAC**.
- ➡ The report highlights the rapid progress of India's bio-economy sector, making significant contributions to the nation's economic and employment growth.

● What is Bio-Economy?

- ➡ **Bio-economy** refers to the knowledge-based production and use of biological resources for products, processes, and services within a sustainable economic framework.

● Key Findings

- ➡ **India's BioEconomy Value:** Reached **\$151 billion** in 2023, contributing **4.25%** of India's GDP.
- ➡ **Employment:** The sector employs over **3.3 million people**.
Growth Projection: Expected to reach **\$300 billion** by 2030.

● Key Sub-Sectors Contributing to India's BioEconomy

- ➡ **BioIndustrial (48%):** Includes biofuels, chemicals, bioplastics, etc.
- ➡ **BioAgri (8%):** Focuses on genetically modified crops like Bt Cotton.
- ➡ **BioPharma (36%):** Encompasses pharmaceuticals, medical devices, and diagnostics.
- ➡ **BioIT/Research Services (8%):** Covers contract research, clinical trials, and bioinformatics.

● Major Achievements

- ➡ **Global Vaccine Manufacturer:** India contributes 25% of WHO-purchased vaccines, with 20% of vaccine exports going to Africa.
- ➡ **Energy Independence:** India is the third-largest producer and consumer of ethanol globally.
- ➡ **Breakthrough in Precision Healthcare:** India's first gene therapy clinical trial for Hemophilia A has been approved.
- ➡ **Growth in Biotech Startups:** From 2021 to 2023, the number of biotech startups surged to 8,500, a 59% increase.



● **Government Initiatives to Boost BioEconomy**

- ➡ **Bio-Manufacturing Initiative:** The Department of Biotechnology (DBT) launched the **BioE3 Policy**.
- ➡ **Intellectual Property (IP) Guidelines:** In 2023, new IP guidelines were introduced to enhance commercialization of publicly funded research.
- ➡ **Governance and Structural Reforms:** Restructured **14 autonomous institutes** into the **Biotechnology Research and Innovation Council**.
- ➡ **Regulatory Streamlining:** Launched the **BioRRAP Portal**, which simplifies the approval process for biological research.

● **Way Forward**

- ➡ Strengthening **public-private partnerships** in biotechnology.
- ➡ Fostering innovation through supportive policies like **BioE3** and **IP commercialization**.
- ➡ Enhancing India's leadership in **vaccine production, ethanol manufacturing, and biotech startups** to achieve the **\$300 billion** target by 2030.



Multimodal Large Language Model (MLLM)

● Why in News?

- ⇒ India has launched **BharatGen**, the first-ever government-funded **Multimodal Large Language Model (MLLM)**, aiming to enhance AI development in the country.
- ⇒ Launched by the **Ministry of Science & Technology** under the **National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)**.

● About BharatGen

- ⇒ **Goal:** To develop **Generative AI** systems capable of generating high-quality text and multimodal content (e.g., images, audio) in various Indian languages.
- ⇒ **Implementing Agency:** IIT Bombay.
- ⇒ **Key Features**
 - Bhartiya Dataset:** Built using India-centric data, reducing reliance on foreign models.
 - Multilingual & Multimodal:** Supports various Indian languages, dialects, and cultural contexts.
 - Open-source Platform:** Accessible to all, promoting industrial, commercial, cultural, and inclusive technological growth.

● About MLLM and Generative AI

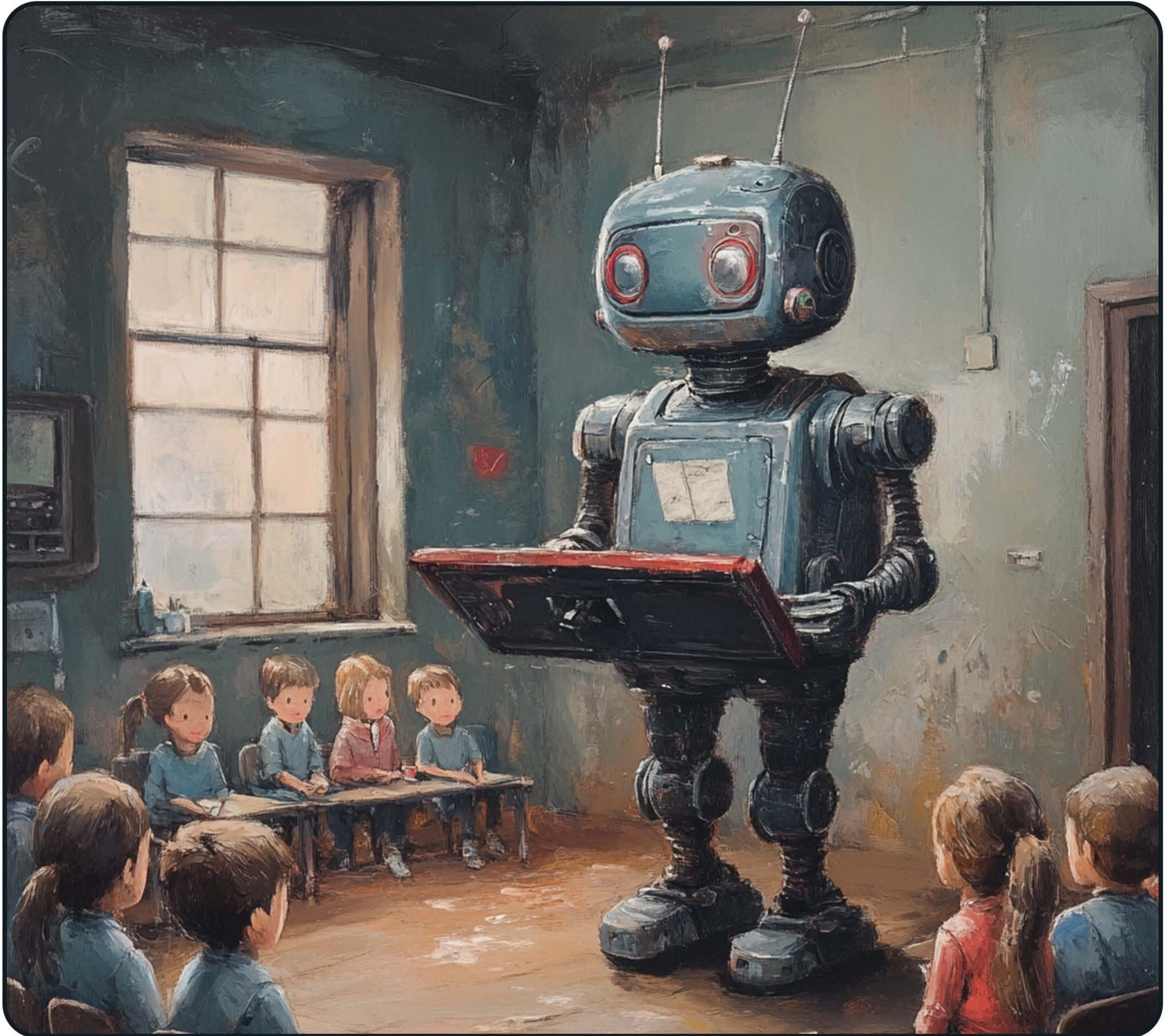
- ⇒ **Multimodal Large Language Models (MLLM):** These models are trained on vast datasets including text, images, audio, and video.
- ⇒ **Generative AI:** Uses LLMs to create new content such as text, images, and audio using machine learning and deep learning techniques.

● National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS), 2018

- ⇒ **Objective:** Brings together academia, industry, government, and international organizations to promote entrepreneurship and research in Cyber-Physical Systems (CPS) technologies like autonomous vehicles.
- ⇒ **Implementing Agency:** Department of Science and Technology (DST).

● **Way Forward**

- ➡ Focus on expanding the dataset to cover more Indian languages.
- ➡ Encourage widespread adoption across industries for enhanced AI-driven innovation.
- ➡ Develop more open-source AI models that cater to India's unique socio-cultural diversity.



Thematic Hubs under National Quantum Mission (NQM)

● Why in News?

- ➔ The **Ministry of Science & Technology** announced the establishment of four **Thematic Hubs (T-Hubs)** across 17 states and 2 Union Territories under the **National Quantum Mission (NQM)**.

● Key Details of T-Hubs

- ➔ **Objective:** To promote advanced research in Quantum Technologies (QT) and create a collaborative ecosystem.

- ➔ **Institutions and Areas:**

Quantum Computing: Indian Institute of Science, Bengaluru

Quantum Communication: IIT, Madras

Quantum Sensing & Metrology: IIT, Bombay

Quantum Materials & Devices: IIT, Delhi

- ➔ **Significance:**

Brings together experts from diverse fields such as physics, computer science, and engineering.

Bridges the gap between research and industry by fostering collaboration.

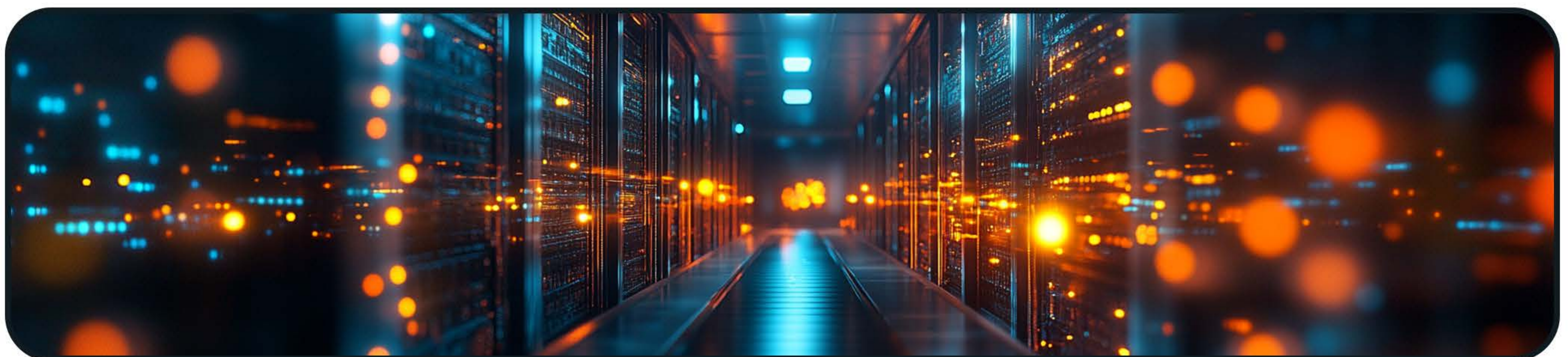
● Mode of Operation

- ➔ **Hub-Spoke-Spike Model:**

Hub: Central institutions.

Spokes: Research projects connected to the hub.

Spikes: Individual research groups working on specific problems.



● **About National Quantum Mission (NQM)**

- ➡ **Aim:** To seed, nurture, and scale up scientific and industrial R&D in Quantum Technology (QT).
- ➡ **Implementing Agency:** Department of Science & Technology (DST), Ministry of Science & Technology.
- ➡ **Duration:** 2023 to 2031.
- ➡ **Targets:**
 - Developing intermediate-scale quantum computers.
 - Establishing satellite-based secure quantum communication systems.

● **Related News: Quantum Key Distribution (QKD)**

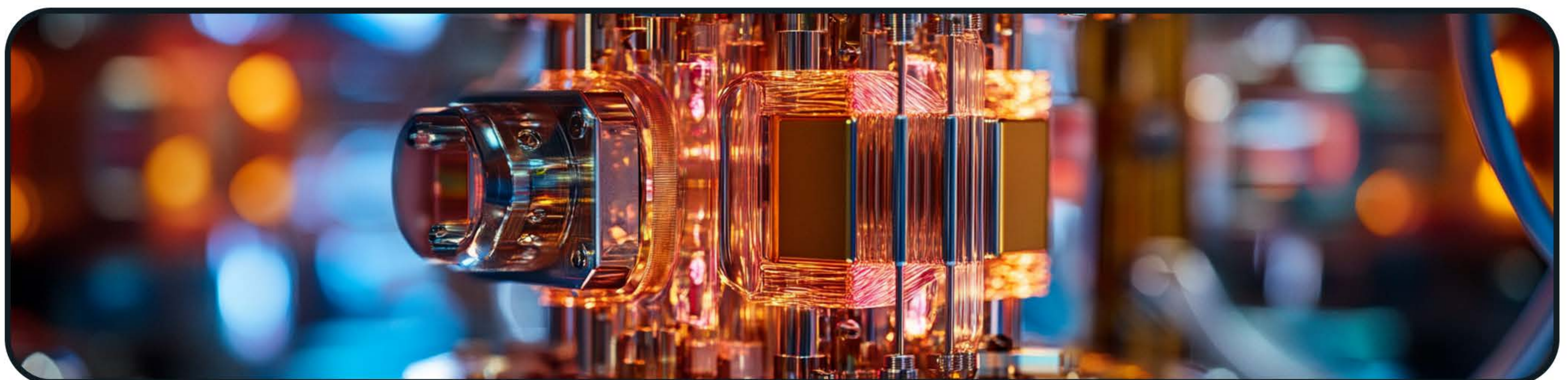
- ➡ **Recent Development:** Indian Army signed a contract for QKD technology through the iDEX initiative.
- ➡ **About iDEX:** Engages MSMEs, startups, and innovators to foster innovation in the Defence and Aerospace sectors.
- ➡ **What is QKD?**
 - Mechanism:** QKD uses quantum mechanics to securely share secret keys between two parties for encryption.
 - How it Works:** Photons (quantum particles of light) are sent across optical links to exchange secure information.

● **Significance of NQM and QKD**

- ➡ **NQM:** Strengthens India's position in global quantum research and industry.
- ➡ **QKD:** Enhances national security by enabling secure communications through quantum encryption.

● **Way Forward**

- ➡ Focus on fostering collaboration between research institutions and industry.
- ➡ Accelerate the development of quantum technologies to meet the targets set by NQM.
- ➡ Expand the use of Quantum Key Distribution technology in critical sectors such as defence and communications.



EnviStats India 2024: Environment Accounts

● Why in News?

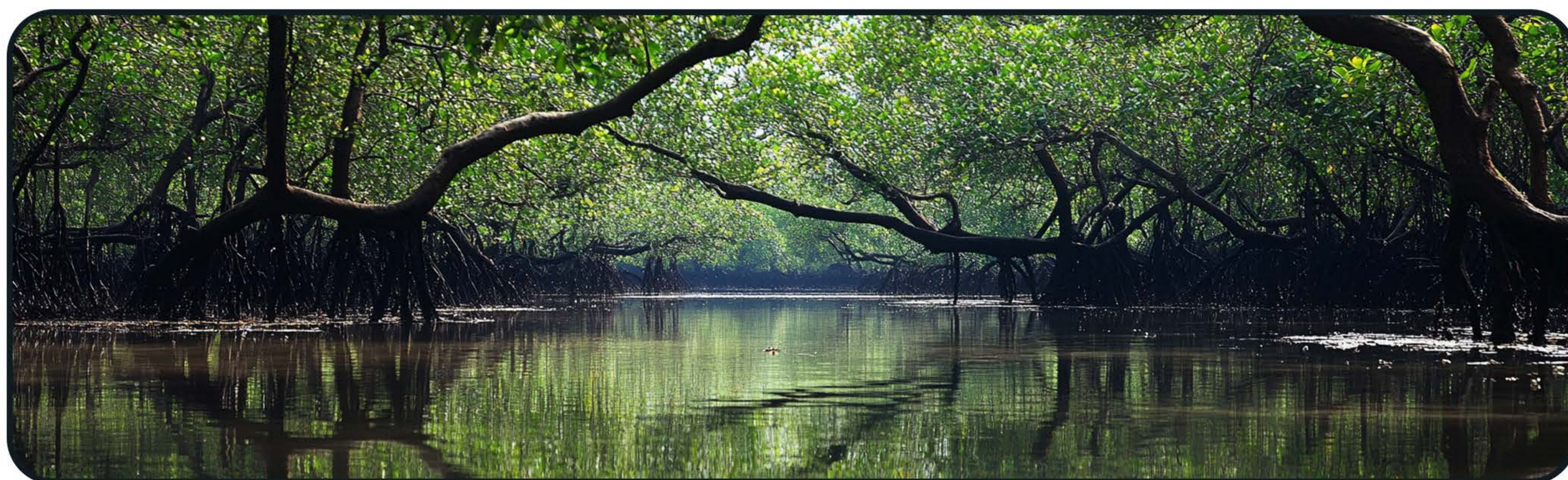
- ➡ The Ministry of Statistics and Programme Implementation (MoSPI) released the 7th issue of **EnviStats India 2024**.
- ➡ EnviStats is compiled according to the **System of Environmental-Economic Accounting (SEEA)** framework, providing key insights into environmental changes and their influencing factors.

● Key Highlights of EnviStats India 2024

- ➡ **India's Energy Transition Leadership:** India recognized as a global leader in energy transition.
- ➡ **Protected Areas:** 72% increase in the number and 16% rise in the area of Total Protected Areas from 2000 to 2023.
- ➡ **Mangrove Coverage:** Increased by 8% between 2013 and 2021.

● Significance of EnviStats

- ➡ **Sustainable Resource Management:** A critical tool for managing natural resources sustainably, ensuring long-term development.
- ➡ **Balancing Growth & Sustainability:** Helps maintain a balance between economic growth and environmental sustainability.
- ➡ **Beyond GDP:** Provides alternative measures of prosperity and progress, moving beyond GDP as a sole indicator.
- ➡ **Data-Driven Policymaking:** Supports more informed and effective environmental policies.



● **Environment Accounts in India**

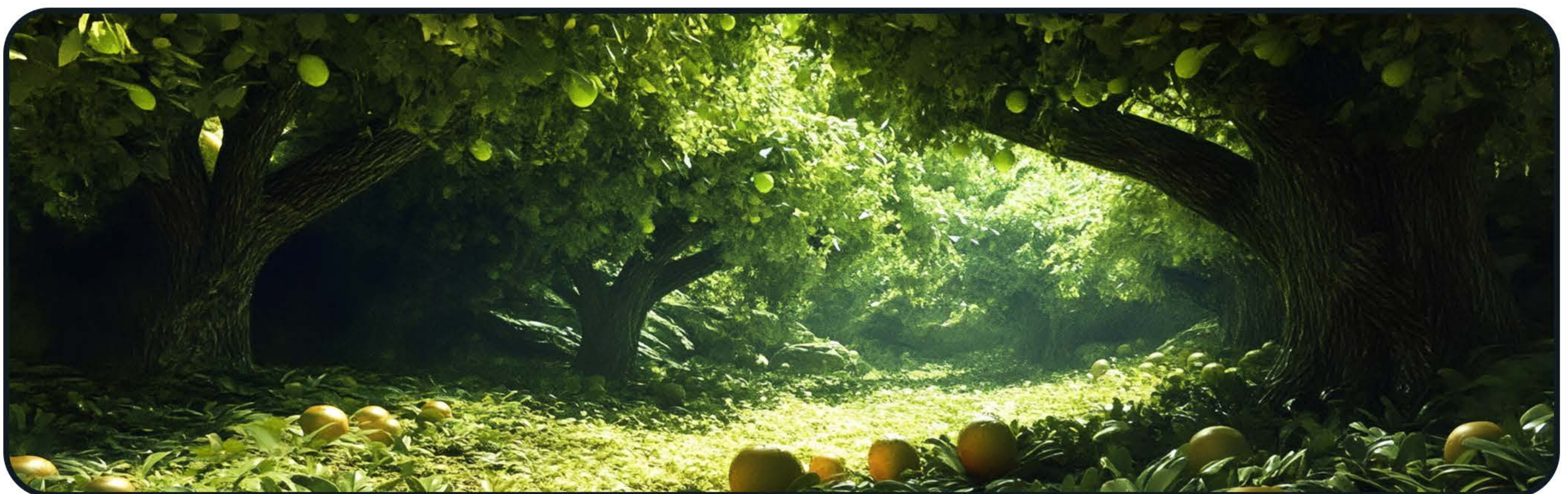
- ⇒ **NSO's Role:** The National Statistical Office (NSO) under MoSPI is responsible for developing environmental statistics and methodologies for national resource accounts.
- ⇒ **Strategic Development:** MoSPI released the '**Strategy for Environmental Economic Accounts in India: 2022-26**'.
- ⇒ **Global Participation:** India actively participates in the **Natural Capital Accounting and Valuation of Ecosystem Services (NCAVES)** initiative, launched by UNSD, UNEP, and CBD Secretariat in 2017.

● **Historical Context**

- ⇒ **First EnviStats:** Released in 2018 based on the recommendations of the **Sir Partha Dasgupta Committee**.

● **Way Forward**

- ⇒ **Strengthen Data Collection:** Enhance the accuracy and scope of environmental data for better policymaking.
- ⇒ **Integration with Policy:** Ensure environmental accounts are actively used to shape sustainable development strategies.
- ⇒ **Global Leadership in Sustainability:** Continue India's progress as a leader in environmental conservation and sustainable resource management.



ILO's Regional Companion Report for Asia and the Pacific Released

● **Why in News?**

- ➔ The International Labour Organization (ILO) released its **Asia and the Pacific Regional Companion Report**, complementing the **World Social Protection Report 2024-26: Universal Social Protection for Climate Action and a Just Transition**.
- ➔ The report highlights key social protection developments, challenges, and priorities in the Asia-Pacific region, focusing on climate change resilience and adaptation.

● **Key Findings**

- ➔ **Social Protection Coverage:** 53.6% of the population in Asia and the Pacific is covered by at least one social protection benefit.
- ➔ **Climate Change Resilience:** Social protection programs, such as India's **MGNREGA**, are vital in helping populations adapt to climate change by securing income and job protection.

● **India-Specific Findings**

- ➔ **Coverage:** 48.8% of India's population is covered by at least one social protection benefit.
- ➔ **Expenditure on Social Protection:** India's total expenditure on social protection (including health) is 5.1% of GDP.
- ➔ **Challenges:**
 - Informal economy dominance
 - Rapid demographic aging
 - Financial constraints
 - Emerging environmental challenges



● **Recommendations from the Report**

- ➔ **Strengthen Social Protection Systems:** Enhance resilience to climate change, improve adaptation and mitigation efforts.
- ➔ **Extend Coverage:** Broaden social protection coverage to include workers in all types of employment, especially informal workers.
- ➔ **Reform Fossil Fuel Subsidies:** Redirect fiscal resources towards social protection by reducing reliance on fossil fuel subsidies.
- ➔ **Leverage Technology:** Improve the delivery and efficiency of social protection programs using technology.

● **India's Social Protection Initiatives**

- ➔ **Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), 2005:** Guarantees 100 days of wage employment to rural households.
- ➔ **National Food Security Act, 2013:** Provides subsidized food grains to about two-thirds of the population.
- ➔ **National Social Assistance Programme (NSAP):** Offers welfare support to the elderly, widows, and other vulnerable groups.
- ➔ **Pradhan Mantri Jan Arogya Yojana (PM-JAY):** Provides health insurance cover of Rs. 5 lakhs per family annually for secondary and tertiary care hospitalization.

● **Way Forward**

- ➔ **Inclusive Social Protection:** Extend coverage to informal and unorganized sectors.
- ➔ **Climate-Responsive Policies:** Integrate climate adaptation and resilience into social protection programs.
- ➔ **Fiscal Reform:** Reform subsidies to create more fiscal space for enhancing social protection.
- ➔ **Digital Transformation:** Use technological advancements to streamline and improve the effectiveness of social welfare schemes.



Ecomark Rules 2024

● Why in News?

- ➡ The Ministry of Environment, Forest and Climate Change has notified the **Ecomark Rules, 2024**.
- ➡ This labeling system promotes eco-friendly products across categories such as food, cosmetics, soaps, and electronics.
- ➡ The initiative aligns with the **LIFE (Lifestyle for Environment)** principle, focusing on sustainability and resource efficiency.

● Key Highlights

- ➡ **Granting Criteria:** Products must hold a licence or certificate of conformity with Indian Standards and fulfill the prescribed environmental criteria.
- ➡ **Eligible Products:** Must meet specific standards regarding resource consumption and environmental impacts.
- ➡ **Application Process:** Manufacturers must apply through the **Central Pollution Control Board (CPCB)**.
- ➡ **Validity:** The Ecomark will be valid for **three years**.
- ➡ **Oversight:** Implementation is overseen by a Steering Committee headed by the Environment Secretary.

● Significance

- ➡ **Consumer Empowerment:** Enables consumers to make informed purchase decisions by identifying eco-friendly products.
- ➡ **Circular Economy:** Encourages resource conservation and prevents misleading environmental claims.
- ➡ **Sustainability Promotion:** Drives manufacturers to adopt practices that reduce energy consumption and enhance resource efficiency.

● Way Forward

- ➡ The Ecomark initiative will foster a **shift towards sustainable production** in key industries.
- ➡ **Enhanced Consumer Awareness** will lead to more responsible purchasing patterns, contributing to environmental conservation.

● Other Environmental Certifications in India

➔ Indian Forest & Wood Certification Scheme:

Promotes sustainable forest management and agroforestry practices.

Includes certification for forest management, tree outside forest management, and chain of custody.

Provides market incentives to entities adhering to responsible environmental practices.



Supreme Court Strikes Down Caste-Based Work Allotment in Prisons

● Why in News?

- ➔ In the **Sukanya Santha vs. Uoi & Others** case, the **Supreme Court** struck down provisions in various **State Prison Manuals** that allowed caste-based job assignments for prisoners.
- ➔ The judgment addresses long-standing issues of caste-based discrimination within prisons.

● Key Issues Highlighted

- ➔ **Caste-based Segregation:** Segregation of barracks and division of labor based on caste.
- ➔ **Discrimination Against Denotified Tribes (DNTs):** Provisions in Prison Manuals discriminated against DNTs and prisoners classified as **habitual offenders**.

● Key Highlights of the Judgment

- ➔ **Violation of Constitutional Rights:** Court declared caste-based discrimination in prisons as unconstitutional, violating **Articles 14, 15, 17, 21, and 23** of the Constitution.
- ➔ **Removal of Caste References:** **Caste columns** and any references to caste in undertrial and convicts' registers are to be deleted.
- ➔ Revision of Prison Manuals:

Within three months, all **States and Union Territories** must revise their Prison Manuals in accordance with the judgment.

The Union Government is directed to amend the **Model Prison Manual 2016** and the **Model Prisons and Correctional Services Act 2023** to remove caste-based provisions.



● **About Denotified Tribes (DNTs) and Habitual Offenders**

➡ **Denotified Tribes (DNTs):** Tribes originally listed under the **Criminal Tribes Act of 1871** as criminal tribes, which was repealed in 1949.

➡ **Habitual Offenders:**

Defined under respective **State Habitual Offenders Acts** to categorize individuals convicted of multiple crimes.

The **Idate Commission (2017)** recommended the immediate repeal of Habitual Offenders Acts by states, citing their potential for misuse against DNTs.

● **Way Forward**

➡ **Amendment of Laws:** The judgment paves the way for revising Prison Manuals and related laws to eliminate caste-based discrimination.

➡ **Implementation Timeline:** States and the Union government are directed to comply within a three-month period.

➡ **Improved Treatment of DNTs and Habitual Offenders:** A more just framework needs to be developed to prevent harassment and discrimination against DNTs and those classified as habitual offenders.



RBI Releases Report on MIBOR Benchmark

● Why in News?

- ⇒ RBI has released the report from the Committee on MIBOR Benchmark, recommending key changes in the methodology for computing the Mumbai Interbank Outright Rate (MIBOR).
- ⇒ The report proposes a transition to a new secured money market benchmark for widely used derivative products.

● What is MIBOR?

- ⇒ **Mumbai Interbank Outright Rate (MIBOR):** Introduced by **National Stock Exchange (NSE)** in 1998, MIBOR is an interest rate benchmark used by banks to borrow unsecured funds from each other in the Indian interbank market.
- ⇒ **Current Computation:** MIBOR is computed and published daily by **Financial Benchmarks India Pvt. Ltd. (FBIL)** based on trades executed on the **Negotiated Dealing System (NDS)-Call system** in the first hour.

● Issues with the Current MIBOR

- ⇒ MIBOR is based on only 1% of daily money market transactions, making it prone to volatility.
- ⇒ **Thin call money market volumes** lead to limited representation and unreliability of MIBOR.

● Key Recommendations of the Committee

- ⇒ **Change in Computation Methodology:** Increase the calculation window from the first 1 hour to the first **3 hours** to make MIBOR more representative and reliable.
- ⇒ **New Benchmark Based on Secured Money Market:** FBIL should develop and publish a benchmark derived from secured money market transactions, including **basket repo** and **TREP (tri-party repo)** segments.

● About Call Money Market and TREP

- ⇒ **Call Money Market:** A short-term financial market where banks and financial institutions lend and borrow funds for immediate needs.
- ⇒ **TREP (Tri-Party Repo):** A type of repo contract where a third party facilitates services like collateral management, payment, and settlement between the two transacting parties.

● **Way Forward**

- ➔ **Enhancing Reliability:** The proposed changes aim to make MIBOR more reliable by broadening the volume of transactions.
- ➔ **New Benchmark Development:** Transitioning to a secured money market benchmark will enhance transparency and stability in the derivatives market.



Classical Language Status Granted to Five Languages

● Why in News?

- ➔ The **Union Cabinet** has approved the **Classical Language status** for five Indian languages: **Marathi, Pali, Prakrit, Assamese, and Bengali.**
- ➔ This recognition elevates the cultural and historical significance of these languages, promoting their rich heritage.

● About Classical Language

- ➔ **Initiated in 2004:** The concept of Classical Language was created in 2004 to preserve ancient languages of high cultural importance.
- ➔ **Linguistic Experts Committee (LEC):** Formed by the **Ministry of Culture** in 2004 under the Sahitya Akademi to examine the eligibility of languages for classical status.

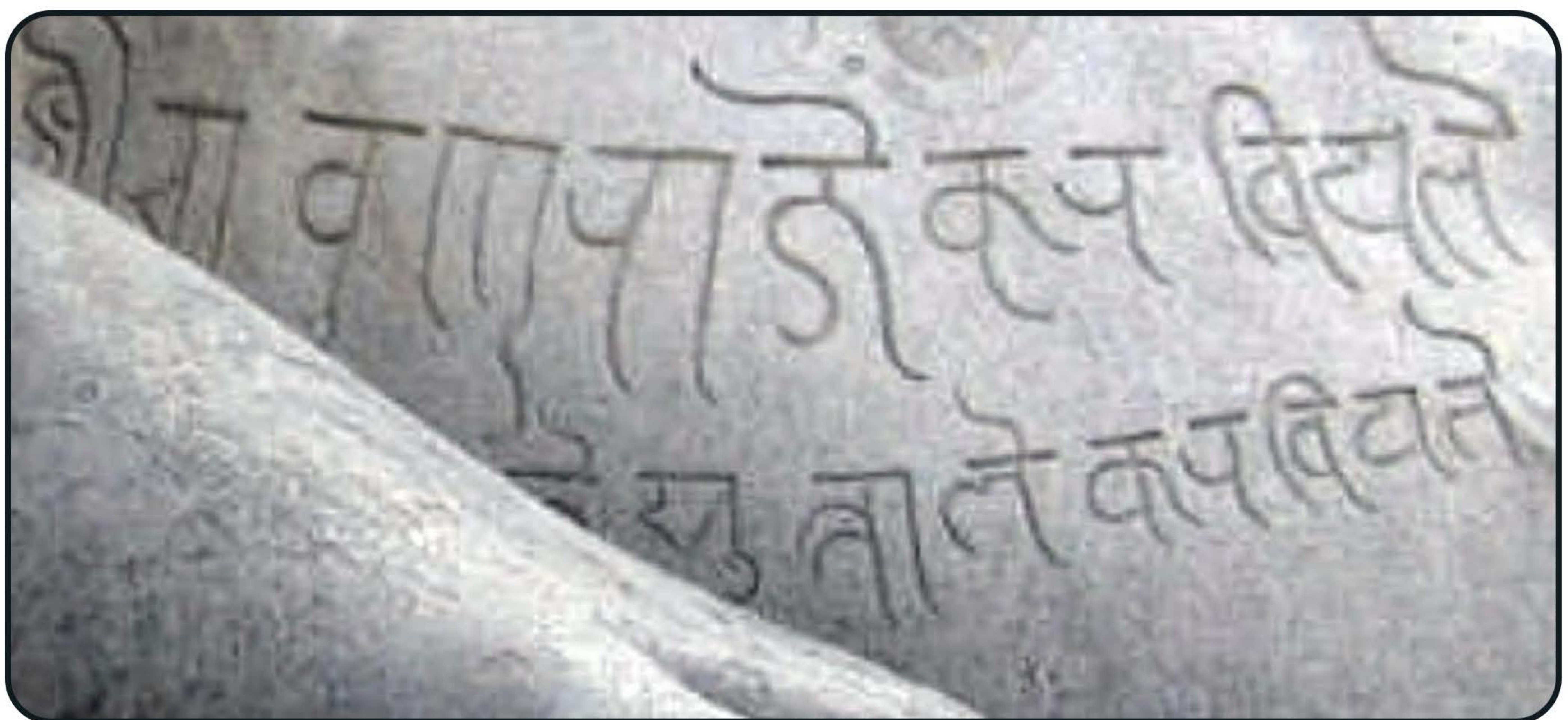
➔ Criteria for Classical Language Status:

Antiquity: Early texts/recorded history over a period of **1500-2000 years.**

Rich Literature: Presence of ancient literature/texts that hold cultural significance.

Diversity: Should include prose, poetry, epigraphs, and inscriptions.

Distinctiveness: Classical language and literature may differ from its modern form or may have discontinuous forms with its later offshoots.



● Languages Granted Classical Status

⇒ Marathi:

Notable Texts: Jnaneshwar's commentary on the **Bhagavad Gita**.

State: Maharashtra.

⇒ Prakrit:

Significance: Used in **Ashoka's inscriptions** and texts like **Gāthā Sattasai**.

States: Bihar, Uttar Pradesh, and Madhya Pradesh.

⇒ Pali:

Key Literature: **Dhammapada** and **Jātaka Tales**, central to Buddhist philosophy.

States: Bihar, Uttar Pradesh, and Madhya Pradesh.

⇒ Assamese:

Cultural Impact: **Shankardev's Vaishnavite poetry** contributed to its literary richness.

State: Assam.

⇒ Bengali:

Notable Works: Literary masterpieces by **Sri Chaitanyadeva** and **Rabindranath Tagore**.

State: West Bengal.

● Previous Classical Languages

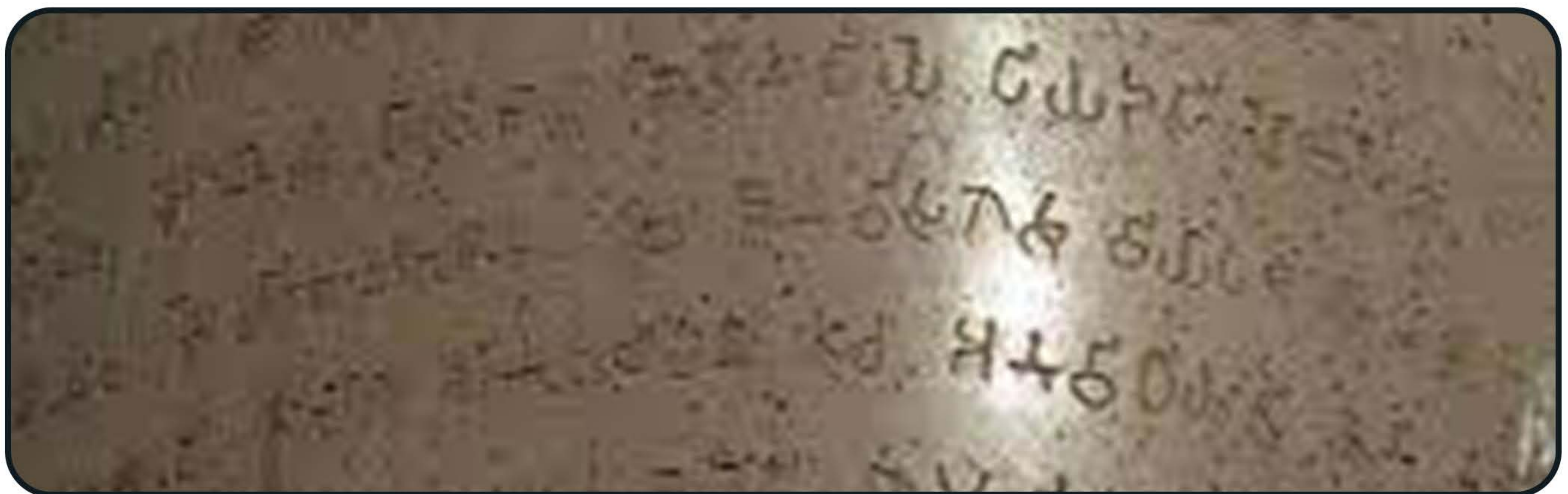
⇒ **Tamil (2004), Sanskrit (2005), Telugu and Kannada (2008), Malayalam (2013), and Odia (2014)** were previously granted classical status.

● Way Forward

⇒ **Preserving Cultural Heritage:** Recognition will ensure the preservation and promotion of these languages and their historical significance.

⇒ **Encouraging Research:** The status is expected to boost academic research and studies into the ancient texts and literature of these languages.

⇒ **Cultural Promotion:** Provides an opportunity to promote the classical literature and arts associated with these languages globally.



Launch of World Bank's Business-Ready Index

● Why in News?

- ➔ The **World Bank (WB)** has launched the **first edition** of its **Business-Ready Index (B-Ready)**, assessing **50 economies** (excluding India) with plans to expand coverage to **180 economies by 2026**.
- ➔ This index replaces the **Ease of Doing Business (EoDB)** rankings, which were discontinued in 2021 due to ethical irregularities.

● About Business-Ready (B-Ready) Index

- ➔ **Purpose:** Aims to provide a quantitative assessment of the business environment to support private sector development.
- ➔ **Publication:** Released annually, covering most economies worldwide.
- ➔ **Goals:** Aligns with the World Bank Group's objectives of eliminating poverty and promoting shared prosperity.

● Features of B-Ready Index Compared to EoDB

➔ Comprehensive Evaluation:

Assesses the business environment from the perspective of an individual firm and private sector development as a whole.

EoDB focused primarily on small and medium firms.

➔ Qualitative Assessment:

Examines the regulatory burden and quality of regulations affecting firms.

EoDB only analyzed the burden of regulation without assessing quality.

➔ Balanced Approach:

Collects both **de jure** (statutory laws) and **de facto** (practical) information.

EoDB had indicators that only addressed de facto or de jure regulations separately.

- ➔ **Diverse Coverage:** Includes all major business-related topics, unlike EoDB, which excluded significant areas such as labor employment.



● Pillars of the B-Ready Index

- ➔ **Regulatory Framework:** Establishes the rules and regulations that businesses must follow during their establishment, operation, and closure.
- ➔ **Public Services:** Provides essential facilities to support regulatory compliance, including the necessary institutions and infrastructure for business operations.
- ➔ **Operational Efficiency:** Focuses on the ease of regulatory compliance and the effective use of public services directly relevant to businesses.

● Way Forward

- ➔ **Improving Business Environment:** The B-Ready Index aims to provide insights for policymakers to enhance the business environment, facilitating easier establishment and operation of businesses.
- ➔ **Supporting Private Sector Growth:** By focusing on private sector development, the index will help align economic policies with the needs of businesses, ultimately boosting economic growth.
- ➔ **Monitoring Progress:** Regular assessments will enable countries to track their progress over time and make informed decisions based on the index's findings.



Renewable Energy Jobs Report 2024 by IRENA

● Why in News?

- ➡ IRENA published its Annual Review 2024 report titled "**Renewable Energy and Jobs.**"
- ➡ The report highlights global growth in the renewable energy (RE) workforce and specific data related to India's RE sector.

● Key Findings

- ➡ **Global RE Workforce:** Increased to 16.2 million in 2023, up from 13.7 million in 2022.
- ➡ **India's Workforce:** 1.02 million jobs in the renewable energy sector in 2023.
- ➡ **Largest Employers:** Hydropower (largest in India) & Solar Photovoltaic (PV)
- ➡ **Solar PV:**
 - India added 9.7 GW of solar PV capacity in 2023.
 - Ranked 5th globally for new installations (total 72.7 GW).
 - 2.38 lakh jobs in grid-connected solar PV in 2023.
- ➡ **Wind Power:** India ranked 4th globally in wind power capacity, adding 2.8 GW (total 44.7 GW in 2023).

● India's Renewable Energy Status

- ➡ RE capacity grew by **165% in 10 years**, rising from 76.38 GW to 203.1 GW (2014-2024).
- ➡ India ranks **4th globally in RE Installed Capacity.**

● Key Skill Challenges for RE Industry

- ➡ **Widening Skill Gaps:** The rapid growth of the RE sector is outpacing the development of a skilled workforce.
- ➡ **Lack of Skills Monitoring Systems:** Inadequate systems for anticipating skill needs hinder the ability to adapt education and training.

● Recommendations

⇒ **Policy Coherence and Social Dialogue:** Strong public-private partnerships (PPP) are crucial for effective energy transitions.

Example: Sectoral Human Resource Development Plan on RE in the Philippines.

⇒ **Technical and Vocational Education:** Work-based learning should be incorporated into education to provide practical skills for RE careers.

Example: Zimbabwe's Green enterPRIZE programme.

● Major Initiatives in India Driving RE Growth

⇒ National Green Hydrogen Mission

⇒ PM Surya Ghar: Muft Bijli Yojana

⇒ Green Energy Corridors

⇒ Renewable Energy Certificate (REC) Mechanism

● Way Forward

⇒ Focus on bridging the skill gap by integrating education, training, and industry needs.

⇒ Expand policy support for continued RE growth and job creation, especially in solar and wind sectors.



Cross-Border Electricity Trade Agreement Among Nepal, India, and Bangladesh

● Why in News?

- ➡ **Pact Signed:** Nepal, India, and Bangladesh have signed an agreement to facilitate the export of hydroelectricity from Nepal to Bangladesh using Indian transmission lines.
- ➡ **Regional Cooperation:** This arrangement highlights the ongoing efforts towards enhancing cross-border energy cooperation in South Asia.

● Initiatives for Cross-Border South Asian Energy Cooperation

➡ Cross-Border Electricity Trade:

India-Bangladesh: Development of an electricity corridor from **Katihar** in Bihar to **Bornagar** in Assam.

India-Nepal: Projects such as **Arun III** and **Upper Karnali Hydropower Projects (UKHP)**.

India-Bhutan: Notable projects include **Kurichu**, **Tala**, **Chukha**, and **Mangdechhu**.

➡ Energy Pipelines:

TAPI Pipeline: Transporting natural gas from Turkmenistan through Afghanistan and Pakistan to India.

India-Bangladesh Friendship Pipeline: Facilitating energy trade between the two nations.

Motihari-Amlekhganj Pipeline: Strengthening cross-border energy supply.

- ➡ **Renewable Energy Cooperation:** Initiatives such as the **International Solar Alliance's Green Grids Initiative** and **One Sun One World One Grid (OSOWOG)** promoting renewable energy integration.

● Significance of Energy Cooperation

- ➡ **Countering Chinese Influence:** China is actively developing energy infrastructure to secure energy imports from its South Asian partners, making regional cooperation crucial.
- ➡ **Economic Integration:** Energy trade is pivotal for enhancing regional integration and fostering economic ties among South Asian countries.
- ➡ **Other Benefits:** Contributes to **energy security**, and promotes **environmental sustainability**.



● **Challenges in Energy Cooperation**

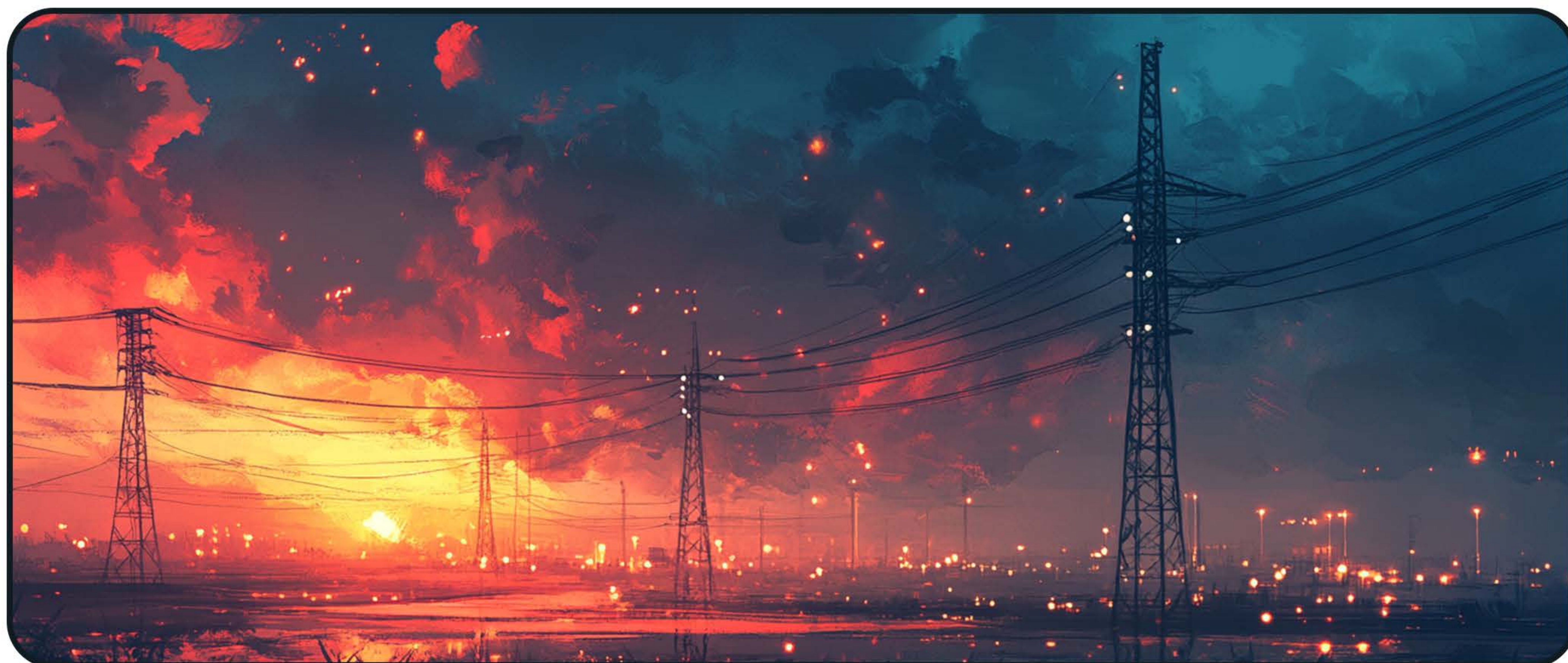
- ➡ **Environmental Damage:** Projects like UKHP face opposition in Nepal due to potential impacts on the Himalayan environment.
- ➡ **Hurdle Rates:** Costs associated with structural grid barriers between countries must be considered for effective electricity trade.
- ➡ **Regional Frictions:** Conflicts, such as those between India and Pakistan, can hinder collaborative efforts in energy cooperation.
- ➡ **Limited Utility of Hydropower Projects:** Challenges in maximizing the potential of existing hydropower initiatives.

● **Institutional Mechanisms for Energy Cooperation**

- ➡ **SAARC Energy Centre:** Promoting regional energy cooperation.
- ➡ **South Asia Sub Regional Economic Cooperation (SASEC):** Enhancing economic integration through energy projects.
- ➡ **BIMSTEC Energy Centre:** Fostering energy collaboration among member states.
- ➡ **South Asia Regional Initiative for Energy Integration (SARI/EI):** Supporting regional energy initiatives and integration efforts.

● **Way Forward**

- ➡ **Strengthening Collaboration:** Continued efforts to enhance cross-border electricity trade and integrate renewable energy sources will be vital.
- ➡ **Addressing Environmental Concerns:** Mitigating the ecological impacts of energy projects should be prioritized to gain public support and ensure sustainability.
- ➡ **Overcoming Structural Barriers:** Addressing the challenges posed by grid connectivity and regional frictions will be essential for successful energy cooperation in South Asia.






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