

WEEKLY NEWS

November 01-09, 2024

Protected Planet Report 2024



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SC Upholds Madrasa Education Act, 2004



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HIGHLIGHTS

- Disaster Risk Reduction Working Group
- India's NBSAP 2024-2030

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Equatorial ElectroJet (EEJ)

● Why in News?

- ➔ Indian scientists have developed a model to better understand the Equatorial ElectroJet (EEJ), which will aid in assessing its impact on satellites, Global Navigation Satellite System (GNSS)-based navigation, and other satellite communication links, as well as electrical power grids.

● About Equatorial ElectroJet (EEJ)

- ➔ **Definition:** EEJ is a ribbon of intense current (~100 kA) flowing in the Earth's ionosphere at an altitude of 100 km.
- ➔ **Width:** It spans a few hundred kilometers, approximately 600 km.
- ➔ **Formation:** Occurs at the Earth's magnetic equator, where magnetic field lines are parallel to the Earth's surface, leading to high current density.
- ➔ **Path:** EEJ travels along the magnetic equator.
- ➔ **Flow Pattern:**
 - Flows eastward during the daytime.
 - Reverses direction at night, creating a magnetic signature detectable both on the ground and in space using magnetometers.

● Effects of EEJ

- ➔ **Geomagnetic Field:** EEJ enhances Earth's geomagnetic field near the equator.
- ➔ **Infrastructure Impact:** Disruptions in EEJ can affect power infrastructure and electricity monitoring systems across equatorial regions.

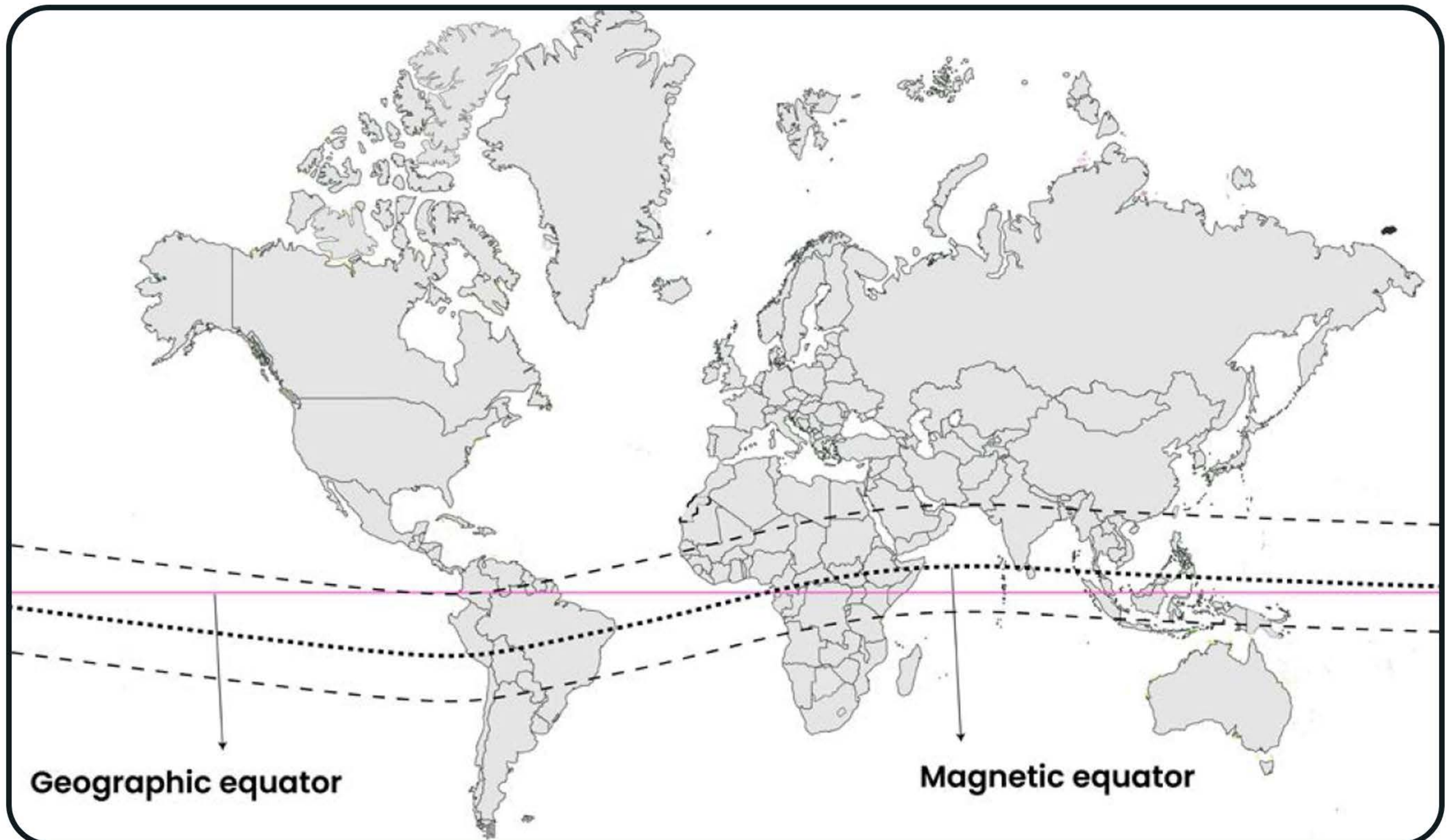
● About the Magnetic Equator

- ➔ **Definition:** The magnetic equator is a line of zero magnetic dip, where a magnetic needle shows no inclination.
- ➔ **Difference from Geographic Equator:**
 - Unlike the fixed geographic equator at 0° latitude, the magnetic equator is not stationary and slowly shifts over time.
 - The geographic equator is a fixed great circle around the Earth.



● Way Forward

- ➔ **Research Applications:** Use the EEJ model to mitigate risks to satellites and improve GNSS-based navigation systems.
- ➔ **Infrastructure Protection:** Enhance strategies for power grid management in equatorial regions impacted by EEJ disruptions.
- ➔ **Continuous Monitoring:** Utilize magnetometers to monitor EEJ variations and their impact on geomagnetic conditions.



India's NBSAP 2024-2030 Launched

● Why in News?

- ➔ India launched the updated **National Biodiversity Strategy and Action Plan (NBSAP) 2024-2030** at the COP 16 of the Convention on Biological Diversity (CBD) in Colombia.
- ➔ Aimed at conserving biodiversity, promoting sustainable resource use, and ensuring equitable benefit-sharing.

● Background

- ➔ **First NBSAP:** Created in 1999.
- ➔ **National Biodiversity Action Plan (NBAP):** Adopted in 2008 and updated in 2014 to align with the Aichi Biodiversity Targets.

● Alignment with Global Frameworks

- ➔ **Kunming-Montreal Global Biodiversity Framework (KMGBF):** Adopted in 2022, targets reversing biodiversity loss by 2030.

● Key Highlights of NBSAP 2024-2030

- ➔ **23 National Biodiversity Targets:** Centered on three main themes:
 - Reducing biodiversity threats
 - Ensuring sustainable resource use
 - Enhancing tools for implementation

● Implementation and Capacity Building

- ➔ **Lead Agency:** Ministry of Environment, Forest, and Climate Change (MoEFCC) oversees NBSAP implementation.
- ➔ **Capacity Building:** Focus areas include:
 - Need and gap assessments
 - Identification of target groups and experts
 - Skill and knowledge training



● **Resource Mobilization**

➡ **Biodiversity Finance Initiative (BIOFIN):** India recognized as a leader in BIOFIN, a UNDP and EU initiative for enhanced biodiversity finance management.

➡ **Funding Initiatives:**

Encourages private sector, donors, and international agencies to support biodiversity efforts through **Green Bonds, Green Funds, and Payment for Ecosystem Services.**

● **Way Forward**

➡ Strategic collaboration with public and private entities to strengthen biodiversity conservation and sustainable development initiatives.



First Black Hole Triple System

● Why in News?

⇒ Astronomers have discovered the first **black hole triple system**, challenging existing theories on black hole formation.

● Key Details of the V404 Cygni System

⇒ **Binary Black Hole Systems:** Typically involve a black hole paired with a star, neutron star, or another black hole in orbit.

V404 Cygni's Unique Structure:

Previously thought to be a binary system, V404 Cygni has now been identified as a **triple system**.

Central Black Hole: Actively consuming a smaller star orbiting closely, completing its orbit every 6.5 days.

Distant Star: A newly discovered third component, orbiting the black hole at a much greater distance, taking approximately **70,000 years** to complete one orbit.

● Location

⇒ The V404 Cygni system is situated within the **Milky Way**, around **8,000 light-years from Earth**.

● Significance of the Discovery

⇒ **Challenges Supernova Theory:** The presence of a distant star questions the typical black hole formation theory, where a supernova explosion should expel loosely-bound objects.

⇒ **Direct Collapse Theory:** Suggests that the black hole in V404 Cygni may have formed through a **direct collapse**, where a massive star quietly implodes, allowing distant objects to remain in orbit.

● About Black Holes

⇒ **Definition:** A cosmic entity with immense gravitational pull.

⇒ **Event Horizon:** The boundary beyond which nothing, not even light, can escape.

⇒ **Historic Milestone:** In 2019, the **Event Horizon Telescope (EHT)** captured the first-ever image of a black hole, located in galaxy M87, about **55 million light-years away**.

● **Way Forward**

- ➔ Further exploration of triple black hole systems could lead to new insights on black hole formation and the complex dynamics of such systems.

G-20 Disaster Risk Reduction Working Group (DRRWG)

● Why in News?

- ➔ India took part in the G-20 Disaster Risk Reduction Working Group (DRRWG) ministerial meeting in Brazil, where participating ministers adopted a **Ministerial Declaration** emphasizing the need for enhanced actions in disaster risk reduction.

● Key Outcomes of the Declaration

- ➔ **Commitment to the Sendai Framework:** Reaffirmed commitment to implementing the **Sendai Framework for Disaster Risk Reduction (2015–2030)**.
- ➔ **Resource Mobilization:** Stressed the need for mobilizing financial resources for DRR.
- ➔ **Nature-Based Solutions:** Advocated for ecosystem-based approaches and nature-based solutions to improve disaster resilience.

● About G-20's Disaster Risk Reduction Working Group (DRRWG)

- ➔ **Establishment:** Formed in 2023 under India's G-20 Presidency to mainstream DRR across G-20 agendas.
- ➔ **5 Priority Areas:**
 - Early warning systems
 - Disaster-resilient infrastructure
 - Financing for DRR
 - Disaster recovery, rehabilitation, and reconstruction
 - Nature-based solutions and ecosystem approaches for DRR

● Overview of the Sendai Framework for Disaster Risk Reduction (2015–2030)

- ➔ **Introduction:** A **non-binding, 15-year** agreement adopted at the 3rd United Nations World Conference on DRR in **Sendai, Japan (2015)**. It replaced the Hyogo Framework for Action.
- ➔ **Aim:** To achieve substantial reduction in disaster risks, losses in lives, health, livelihoods, and damage to economic, physical, social, cultural, and environmental assets.



- **Overview of the Sendai Framework for Disaster Risk Reduction (2015–2030)**

- ➔ **4 Key Priorities:**

- Understanding disaster risk

- Strengthening disaster risk governance

- Investing in DRR for resilience

- Enhancing preparedness for effective response and "Build Back Better" in recovery

- **Sendai Framework's Seven Global Targets (to be achieved by 2030)**

- ➔ **Reduce:**

- Global mortality from disasters

- Number of individuals affected

- Economic losses relative to GDP

- Damage to critical infrastructure and essential services

- ➔ **Increase:**

- Countries implementing national/local DRR strategies

- International support to developing countries

- Accessibility and availability of early warning systems and DRR information

- **Way Forward**

- ➔ Encourage continued financial and technical support from G-20 countries to enhance global DRR capabilities.

- ➔ Promote collaboration on nature-based solutions for sustainable disaster risk management across G-20 nations.



CoP-16 to the Convention on Biological Diversity

● Why in News?

- ➡ The 16th CoP to the **Convention on Biological Diversity (CBD)** concluded in Colombia. This is the first CoP since adopting the **Kunming-Montreal Global Biodiversity Framework (KMGBF)**, providing a vital platform to review progress and address ongoing challenges.

● Key Outcomes of CoP-16

- ➡ **Operationalization of the Cali Fund:** Large companies that benefit from **Digital Sequence Information (DSI)** to contribute part of their profits to support indigenous communities.
- ➡ **Establishment of a Permanent Subsidiary Body:** Formed under **Article 8(j)** of the CBD to enhance indigenous participation across all processes of the convention.
- ➡ **Launch of the Kunming Biodiversity Fund (KBF):** Aims to support actions to achieve the **2030 Agenda, SDG targets, and the 2050 goals** outlined in KMGBF.
- ➡ **Other Discussions:** Addressed critical issues such as **synthetic biology, invasive alien species, and identifying Ecologically or Biologically Significant Marine Areas (EBSAs)**.

● Overview of Kunming-Montreal Global Biodiversity Framework (KMGBF)

- ➡ **Adopted:** CoP-15 (2022), Montreal, Canada.
- ➡ **Goals and Targets:** Four long-term biodiversity goals for 2050 and 23 targets for 2030 to address biodiversity threats and sustainable resource use.
- ➡ **Key Targets Include:**
 - 30-by-30 Agreement:** Protecting 30% of land and water by 2030.
 - Reducing **introduction of invasive alien species by 50%** by 2030.
 - Developing a mechanism for **benefit-sharing** from DSI and traditional knowledge.

● About the Convention on Biological Diversity (CBD)

- ➡ **Secretariat:** Montreal, Canada.
- ➡ **Establishment:** Opened for signature at the **1992 Rio Earth Summit** and came into force in 1993.



● **About the Convention on Biological Diversity (CBD)**

⇒ Objectives:

Conservation of biological diversity.

Sustainable use of biodiversity components.

Fair and equitable benefit-sharing from the use of genetic resources.

⇒ **Parties:** 196 legally binding members (including India).

⇒ Protocols under CBD:

Nagoya Protocol on Access and Benefit-sharing.

Cartagena Protocol on Biosafety.

Nagoya-Kuala Lumpur Supplementary Protocol on liability and redress.

● **Way Forward**

Increased cooperation and financial support for biodiversity initiatives from private and public sectors.

Enhanced monitoring and reporting mechanisms to track KMGBF targets.

Greater involvement of indigenous communities in biodiversity conservation efforts.

Global Tuberculosis (TB) Report 2024

● Why in News?

- ➡ The World Health Organization (WHO) has released the Global Tuberculosis (TB) Report 2024.
- ➡ The report highlights that despite progress, India remains the country with the highest TB burden worldwide.

● About Tuberculosis (TB)

- ➡ **Cause:** Infectious disease caused by *Mycobacterium tuberculosis*, commonly affecting the lungs.
- ➡ **Transmission:** Spreads through the air when people with active lung TB cough, sneeze, or spit.
- ➡ **Curability and Prevention:** TB is both curable and preventable.

● Key Findings of the Report

- ➡ **Leading Cause of Death:** TB likely became the world's leading cause of death in 2023, surpassing COVID-19.
- ➡ **Treatment Coverage:** Improved to 75%, but still below the target of 90% by 2027.

● India-Specific Findings

- ➡ **Global Burden:** India accounted for 26% of the world's TB cases and TB-related deaths in 2023.
- ➡ **Drug Resistance:** India ranks first in the world for multidrug-resistant/Rifampicin-resistant TB.

● Issues Highlighted

- ➡ **Funding Shortfall:** Only \$5.7 billion was allocated for TB prevention in 2023, 26% of the global target of \$22 billion by 2027.
- ➡ **Research Investment:** TB research funding was \$1 billion in 2022, well below the target of \$5 billion by 2027.
- ➡ **Catastrophic Health Costs:** Around 50% of TB-affected households face costs exceeding 20% of their annual income, far from the WHO's goal of zero catastrophic costs.



● **India's Initiatives for TB Prevention**

- ➡ **Pradhan Mantri TB Mukht Bharat Abhiyan:** National campaign for TB elimination.
- ➡ **Universal Drug Susceptibility Testing (UDST):** Ensures drug resistance is checked before or during treatment initiation.
- ➡ **Newer Drug Additions:** Drugs like Bedaquiline and Delamanid have been introduced for managing drug-resistant TB.



SC Upholds Madrasa Education Act, 2004

● Why in News?

- ➔ The Supreme Court, in the case **Anjum Kadari and Another v. Union of India and Others**, upheld the constitutional validity of the **Madarsa Act** by overturning a March 2024 Allahabad High Court judgment. The High Court had previously struck down the Act, deeming it unconstitutional on grounds of violating secularism and specific articles of the Constitution.

● Key Highlights of the Judgment

- ➔ **Reversal of High Court Order:** SC clarified that a statute can only be invalidated if it contravenes **Fundamental Rights** under Part III of the Constitution, not merely on the basis of the basic structure.
- ➔ **Rationale of Madarsa Act:** The Act aims to regulate education standards in **recognized Madarasas**, ensuring students achieve competencies for active participation in society.
- ➔ **Legislative Competence:** The Act was deemed within the **State Legislature's competence**, aligning with **Entry 25** of the Concurrent List, which includes education.
- ➔ **Partial Unconstitutionality:** Provisions related to higher education degrees like **fazil** (post-graduate) and **kamil** (undergraduate) were found unconstitutional as they conflicted with Section 22 of the **University Grants Commission (UGC) Act, 1956**, which restricts degree conferral to UGC-recognized institutions.

● Regulation of Minority Educational Institutions

- ➔ **Articles 29 and 30:** These articles safeguard the **cultural and educational rights** of minorities.
- ➔ **Article 30(1):** Guarantees minorities the right to establish and administer educational institutions of their choice.
- ➔ **National Commission for Minority Educational Institutions (NCMEI):** Established under the **NCMEI Act, 2004** as a quasi-judicial body, NCMEI has adjudicatory, advisory, and recommendatory roles, with powers akin to a civil court to protect minority educational rights.

● Way Forward

- ➔ Upholding the Madarsa Act reinforces the importance of **educational standards** for minority institutions while respecting constitutional frameworks.
- ➔ **State and central authorities** should continue working to balance regulatory standards with minority rights in education.



Protected Planet Report 2024 by UNEP-WCMC and IUCN

● Why in News?

- ➔ The UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) and the International Union for Conservation of Nature (IUCN) have released the Protected Planet Report 2024.
- ➔ This is the first report to evaluate the global status of **Protected and Conserved Areas (PCA)** in alignment with **Target 3** of the **Kunming-Montreal Global Biodiversity Framework (GBF)**.
- ➔ **Target 3** aims to extend the PCA network to cover **30% of the global area** while ensuring equitable conservation that respects the rights of **Indigenous Peoples and Local Communities (IPLC)**.

● Key Definitions

- ➔ **Protected Areas:** Defined geographical areas managed and regulated to meet specific conservation objectives.
- ➔ **Conserved Areas:** Areas outside Protected Areas, managed for biodiversity conservation, ecosystem services, and local values.

● Key Findings of the Report

- ➔ **PCA Coverage:** Global coverage reached **17.6%** of terrestrial and inland waters and **8.4%** of marine and coastal areas.
- ➔ **Biodiversity Protection:** Two-thirds of **Key Biodiversity Areas** are now partially or fully protected, yet **32%** remain unprotected.
- ➔ **Land Protection and Connectivity:** Only **8.5%** of global land is both protected and ecologically connected.
- ➔ **Governance by IPLC:** Limited data on effective management; **only 4%** of Protected Areas are governed by Indigenous Peoples and Local Communities.

● Way Ahead

- ➔ **Recognition and Support for Indigenous Territories:** Indigenous and Traditional Territories cover **13.6% of global land** and should be integrated into conservation initiatives.
- ➔ **Financing for PCA Expansion:** Support for **international financing** to developing nations, with GBF commitment to raise biodiversity investments to at least **USD 200 billion annually** by 2030.



● **Key Initiatives Promoting Protected and Conserved Areas**

- ➔ **Types of Protected Areas under Wildlife (Protection) Act, 1972:** Sanctuaries, National Parks, Conservation Reserves, Community Reserves, and Tiger Reserves.
- ➔ **Biodiversity Beyond National Jurisdiction (BBNJ) Agreement:** An international agreement, signed by India, to protect marine biodiversity.
- ➔ **Climate Adaptation and Protected Areas (CAPA) Initiative:** Promotes **nature-based solutions** to enhance climate resilience and protect biodiversity within and around Protected Areas.

● **Conclusion**

- ➔ The **Protected Planet Report 2024** highlights both the progress and gaps in global conservation, underscoring the need for expanded coverage, enhanced protection, and increased international financing.



International Solar Alliance's (ISA)

● Why in News?

- ➔ The 7th Annual Assembly of the International Solar Alliance (ISA) took place in New Delhi. India was re-elected as ISA President for 2024-2026, with France serving as Vice-President.

● Key Outcomes of the 7th ISA Assembly

- ➔ **World Solar Report Series:** Released the third edition comprising four major reports covering global solar market trends, investment, technology, and green hydrogen readiness.

● Major Findings from the 4 Reports

➔ World Solar Market Report 2024

Global Solar Capacity: Expanded from 1.22 GW in 2000 to 1,419 GW (approx.) by 2023.

Solar Manufacturing Boom: Production expected to exceed 1,100 GW by 2024, outpacing demand and further reducing solar panel costs.

Solar Employment: Solar sector supports 7.1 million jobs globally, a 44% increase from 2022.

➔ World Investment Report 2024

Energy Investment Growth: Global energy investments projected to rise from \$2.4 trillion in 2018 to \$3.1 trillion in 2024.

Solar's Share: Solar energy represents 59% of global renewable energy investments.

➔ World Technology Report 2024

Innovation in Solar: Breakthroughs in multijunction perovskite cells show promise for solar technology.

Cost Reduction: Utility-scale solar PV costs have dropped by 90% since 2010.

➔ Green Hydrogen (GH2) Readiness Report

GH2 in Africa: Identifies the potential for GH2 to help decarbonize high-emission industries in African countries, such as steel and fertilizer production.

● About the International Solar Alliance (ISA)

- ➔ **Mandate:** A global intergovernmental organization aimed at advancing solar power adoption for a carbon-neutral future.

- ➔ **Founded:** Conceptualized at COP21 in Paris, 2015; headquartered in India.



- **About the International Solar Alliance (ISA)**

- ➔ **Members:** 103 member countries, with 17 additional signatories.
- ➔ **Assembly:** Apex decision-making body overseeing the implementation of ISA's Framework Agreement.

- **Way Forward**

- ➔ Enhance collaborative efforts to reduce solar energy costs.
- ➔ Promote GH2 initiatives to support sustainable industrial transitions, particularly in emerging economies.
- ➔ Strengthen ISA's support for member countries in achieving solar and renewable energy targets.



Asia-Pacific Climate Report Highlights

India's Transition to Clean Energy

● Why in News?

➡ The **Asian Development Bank (ADB)** has released the **Asia-Pacific Climate Report**.

The report emphasizes India's shift from a **fossil fuel-dependent economy** towards clean energy initiatives, highlighting key reforms and government programs driving this transition.

● Key Initiatives Supporting the Shift to Clean Energy

➡ **Fossil Fuel Subsidy Reform:**

India adopted the **"Remove, Target, and Shift"** approach to reform fossil fuel subsidies.

This approach led to a significant **85% reduction** in oil and gas sector subsidies, decreasing from **\$25 billion in 2013 to \$3.5 billion by 2023**.

The gradual **removal of petrol and diesel subsidies** (phased out between 2010 and 2014) created fiscal space for renewable energy and infrastructure investments.

➡ **Role of Taxation in Clean Energy Funding:**

Coal Cess (2010-2017): The government introduced a cess on coal production and imports, with **30% of proceeds** allocated to the **National Clean Energy and Environment Fund**.

This fund supported initiatives like the **Green Energy Corridor Scheme** through the Ministry of New and Renewable Energy.

Excise Duties on Petrol and Diesel (2014-2017): Increased duties contributed additional revenues for funding clean energy initiatives.

➡ **Major Government Schemes and Programs:**

Key programs include the **National Green Hydrogen Mission** and the **PM-KUSUM scheme**, aimed at enhancing clean energy adoption and sustainable agricultural practices.

● About Asian Development Bank (ADB)

➡ **Established:** 1966

➡ **Objective:** To support economic and developmental projects in member countries with a focus on sustainable impact.

➡ **Membership:** 69 member countries, including India.



- **About Asian Development Bank (ADB)**

- ➡ **Largest Shareholders:** Japan and the United States.

- Headquarters:** Manila, Philippines.

- **Way Forward**

- ➡ **Continued Reduction of Fossil Fuel Dependence:** Further reforms and policies to phase out remaining fossil fuel subsidies.

- ➡ **Increased Investment in Clean Energy Infrastructure:** Enhanced funding for renewable energy sources and supporting frameworks.

- ➡ **Expanding Government Initiatives:** Strengthening programs like the National Green Hydrogen Mission to drive innovation in clean energy.



PM-Vidyalaxmi Scheme

Approved by Union Cabinet

● **Why in News?**

- ➡ The **Union Cabinet** has approved the **PM-Vidyalaxmi scheme**, a new Central Sector initiative to provide financial assistance to meritorious students for higher education.
- ➡ **National Education Policy (NEP) 2020** emphasized financial support for deserving students in both public and private higher education institutions.

● **Objectives of PM-Vidyalaxmi Scheme**

- ➡ **Goal:** To provide **collateral-free, guarantor-free loans** from banks and financial institutions to cover the **full tuition and related expenses** for students pursuing higher education.

● **Key Features of the Scheme**

➡ **Eligibility:**

Open to students admitted to **Quality Higher Education Institutions (QHEIs)**.

Covers **860 QHEIs** (based on **NIRF rankings**), benefiting over **22 lakh students**.

➡ **Loan Coverage and Financial Benefits:**

Loan Amount: Up to **Rs.7.5 lakhs** with a **75% government-backed credit guarantee**.

Interest Subvention: 3% interest subsidy on loans up to **Rs.10 lakhs** during the moratorium period.

➡ **Digital Integration:**

Unified Portal: “**PM-Vidyalaxmi**” portal to streamline the application for education loans and interest subvention requests.

Payment Mechanism: Subventions disbursed via **E-vouchers** and **Central Bank Digital Currency (CBDC)** wallets.

- ➡ **Complementary to PM-USP:** Designed to supplement the **Pradhan Mantri Uchchatar Shiksha Protsahan (PM-USP) Scheme**, which aids financially disadvantaged students in covering daily expenses during higher studies.



● **About Pradhan Mantri Uchchatar Shiksha Protsahan (PM-USP) Scheme**

- ➡ **Objective:** Provides financial support to meritorious, economically disadvantaged students to manage daily expenses while pursuing higher education.
- ➡ **Eligibility:** Based on performance in the **Higher Secondary/Class 12 Board Examination**.
- ➡ **Benefits:** Awards up to **82,000 new scholarships** annually.
- ➡ **Components:**
 - Central Sector Interest Subsidy (CSIS):** Interest subsidy on education loans.
 - Credit Guarantee Fund Scheme for Education Loans (CGFSEL):** Ensures security on loans for students in need.

● **Way Forward**

- ➡ **Increased Accessibility:** Encourage more banks and financial institutions to join the PM-Vidyalaxmi scheme to support a greater number of students.
- ➡ **Promotion of Digital Adoption:** Enhance awareness about the digitalized loan application and subsidy processes for a seamless experience.
- ➡ **Expansion of Eligible Institutions:** Gradually increase the number of institutions covered under QHEIs to ensure wider student reach.

Primordial Black Hole LID-568

● Why in News?

- ➡ **Key Discovery:** James Webb Space Telescope observations reveal LID-568, a primordial black hole, expanding at an unprecedented rate.
- ➡ **Study Publication:** Findings published in Nature Astronomy challenge conventional black hole growth models.

● About Primordial Black Holes

- ➡ **Formation:** Believed to form from either the explosion of the universe's earliest stars or the collapse of large gas clouds in the early universe.
- ➡ **Growth Process:** LID-568's rapid expansion likely due to intense accretion, consuming material at over 40 times the Eddington limit.

● Key Insights from LID-568's Growth

- ➡ **Accretion Episode:** Rapid accretion in a single episode suggests significant mass growth can occur swiftly, offering clues to the early formation of supermassive black holes.
- ➡ **Eddington Limit:**
 - Defines the maximum theoretical energy output during the accretion process.
 - Balances outward radiation forces with the gravitational pull on infalling material.

● About LID-568

- ➡ **Formation Timeline:** Developed around 1.5 billion years after the Big Bang.
- ➡ **Mass Comparison:** Approximately 10 million times the mass of the Sun—2.5 times that of the Milky Way's central black hole, Sagittarius A*.

● James Webb Space Telescope (JWST)

- ➡ **Overview:** Largest and most advanced space telescope, primarily observing in the infrared.
- ➡ **Development:** Collaboration between NASA, ESA, and CSA.
- ➡ **Orbit:** Positioned at the Sun-Earth Lagrange Point (L2), 1.5 million km from Earth.

● **Way Forward**

- ➡ **Understanding Black Hole Evolution:** Insights from LID-568 may advance theories on early universe black hole formation.
- ➡ **Further Observations:** Continued Webb Telescope studies will refine knowledge of black hole accretion and early cosmic events.



UN-Habitat's "World Cities Report 2024: Cities and Climate Action"

● Why in News?

- ➡ **UN-Habitat** released the **World Cities Report 2024**, focusing on the role of cities in climate action.
- ➡ The report highlights the dual nature of cities as both **victims** and **contributors** to climate change, with cities disproportionately affected by its impacts while also being major sources of **Greenhouse Gas (GHG) emissions**.

● Key Findings of the Report

- ➡ **Exposure to Climate Change:** Over **2 billion people** living in cities are projected to experience an additional **temperature increase** of at least **0.5°C** by **2040**.
- ➡ **Climate Financing Gap:**
 - Cities need an estimated **\$4.5-5.4 trillion** per year to build and maintain **climate-resilient systems**.
 - Current financing stands at just **\$831 billion**, creating a significant gap in funding.
- ➡ **Shrinking Green Spaces:** The global average of **green space** in urban areas fell from **20% in 1990** to **14% in 2020**, leading to reduced environmental benefits for residents.
- ➡ **Impact on Vulnerable Communities:** Some climate interventions, such as the creation of parks or green spaces, have inadvertently caused "**green gentrification**"—a phenomenon where the displacement of low-income communities and rising property values worsen conditions for vulnerable populations.

● Recommendations for Climate Action

- ➡ **Revenue Raising and Financial Mobilization:** Raise funds through **debt**, **public-private partnerships (PPPs)**, and **climate finance instruments** to address the funding gap.
- ➡ **Integrating Climate Action into Urban Planning:** Ensure **climate resilience** is embedded in **urban planning**, with a focus on **bottom-up (locally-led)** climate adaptation efforts to effectively address local vulnerabilities.
- ➡ **Strengthening Social Protection:** Enhance **social protection programs** to safeguard vulnerable communities and adopt **nature-based solutions** that mitigate climate shocks and promote environmental sustainability.



● **About UN-Habitat**

- ➡ **Establishment:** Founded in **1978**, it laid the foundation for the **UN Human Settlements Programme (UN-Habitat)** during **Habitat I**.
- ➡ **Mission:** UN-Habitat is authorized by the **UN General Assembly** to promote socially and environmentally sustainable urban development.
- ➡ **Collaborations:** Works with **governments, UN agencies, civil society, academia, and the private sector**.
- ➡ **Key Documents:** Includes the **Vancouver Declaration (Habitat I)** and **Istanbul Declaration (Habitat II)** on human settlements.
- ➡ **Notable Publications:** **State of the World's Cities** and **World Cities Report**.
- ➡ **Headquarters:** **Nairobi, Kenya**.



Expansion of Himalayan Glacial Lakes: CWC Report Highlights

● Why in News?

- ➔ The **Central Water Commission (CWC)** has highlighted a significant **increase in Himalayan glacial lakes** due to **climate change**.
- ➔ The expansion of these lakes poses a **risk to communities** and **biodiversity** due to the higher probability of **Glacial Lake Outburst Floods (GLOFs)**.

● Key Findings of the CWC Report

➔ Increase in Glacial Lakes:

The **Himalayan region** saw a **10.8% increase** in the **surface area** of glacial lakes from **2011 to 2024**.

In **India**, the increase was even more substantial, with a **34% expansion** in the surface area of glacial lakes.

- ➔ **High-Risk Glacial Lakes:** **67 lakes** in India have experienced an expansion of **over 40%**, classifying them under the **high-risk category** for potential **GLOFs**.
- ➔ **Transboundary Risks:** The growing glacial lakes pose **transboundary risks** to neighboring countries, including **Bhutan, Nepal, and China**.
- ➔ **Monitoring Techniques:** The expansion and risks associated with these lakes were **monitored** using advanced satellite technologies like **Sentinel-1** (Synthetic Aperture Radar) and **Sentinel-2**.

● What Are Glacial Lakes?

- ➔ **Glacial lakes** are formed when **glaciers erode land** and melt, filling the depressions created by the ice with water.

● About Glacial Lake Outburst Floods (GLOFs)

- ➔ **GLOFs** occur when there is a **sudden release of water** from a glacial lake, typically caused by the collapse of a dam or other obstruction. This results in a large volume of water flowing into nearby rivers and communities.
- ➔ **Example:** A **GLOF** in **Sikkim** (October 2023) was triggered by the bursting of **South Lhonak Lake**.

● **About CWC (Central Water Commission)**

- ⇒ **Headquarters:** New Delhi
- ⇒ **Established:** In 1945, based on advice from **Dr. B. R. Ambedkar**.
- ⇒ **Ministry:** Under the **Ministry of Jal Shakti**.
- ⇒ **Leadership:** The **Chairman** is an **Ex-officio Secretary** to the **Government of India**.
- ⇒ **Objective:** To promote the **integrated and sustainable development and management of India's water resources**.
- ⇒ **Scope of Work:** CWC handles **surface water** management, while the **Central Groundwater Board (CGWB)** deals with **groundwater**.



SC Mandates Prior Sanction for Public Servant Prosecution

● Why in News?

- ➔ The Supreme Court has ruled that prior sanction is required to prosecute public servants in money laundering cases under the Prevention of Money Laundering Act (PMLA), adding a layer of procedural safeguard and accountability.

● Key Highlights of Directorate of Enforcement Vs Bibhu Prasad Acharya Case

- ➔ **Supremacy of CrPC:** The court held that PMLA does not override the requirement for prior sanction under Section 197 of the Code of Criminal Procedure (CrPC).

Note: This provision now corresponds to Section 218 of the Bhartiya Nagrik Suraksha Sanhita, 2023, which replaced the CrPC effective July 1, 2024.

- ➔ **Section 197 of CrPC:** Aimed to protect public servants from unwarranted prosecution for actions done during official duties.

Exception: This protection is not absolute; prosecution can proceed with prior sanction from the appropriate government.

● Provisions for Civil Servant Protection

- ➔ **Article 311(1) & Article 311(2):** Provide constitutional safeguards for civil servants.
- ➔ **Public Servants (Inquiries) Act, 1850:** Ensures fair and transparent inquiries in public administration, upholding principles of natural justice.

● About PMLA, 2002

- ➔ **Objective:** A comprehensive law to prevent money laundering and allow for the confiscation of property derived from illicit activities.
- ➔ **Implementing Bodies:** Enforcement Directorate (ED) and Financial Intelligence Unit – India (FIU-IND).
- ➔ **Definition of Money Laundering under PMLA:** Involves activities such as concealing, possessing, and acquiring proceeds of crime to make illegally earned money appear legitimate.



● **Way Forward**

- ➡ **Ensuring Accountability:** The mandate for prior sanction strengthens checks on prosecuting public servants while ensuring accountability.
- ➡ **Further Safeguards:** Additional safeguards could be introduced to balance fair prosecution with protection against wrongful allegations.



UNEP Adaptation Gap Report 2024: Key Findings and Recommendations

● Why in News?

- ➔ The United Nations Environment Programme (UNEP) released the **Adaptation Gap Report 2024**, offering an **annual assessment** of global **adaptation planning, implementation, and finance** in response to climate change.

● Key Findings of the Report

- ➔ **Adaptation Gap:** The **adaptation gap** is estimated to range between **US\$187-359 billion** per year, highlighting the significant difference between current adaptation efforts and the societal goal for climate adaptation.
- ➔ **Progress in Adaptation:** **International public adaptation finance** flows to **developing countries** increased to **US\$27.5 billion in 2022**, showing progress towards the **Glasgow Climate Pact**, which urged developed nations to **double adaptation finance** to developing countries by 2025.
- ➔ **Significance of Adaptation:** Ambitious adaptation efforts could **halve global climate risks**. For example, an investment of **US\$16 billion per year** in agriculture could prevent **78 million people** from suffering due to **climate change-related hunger**.

● Recommendations for Bridging the Adaptation Gap

- ➔ **Adaptation Finance Goals:** Set an **ambitious New Collective Quantified Goal** for climate finance at **COP29**.
- ➔ **Strengthening Enabling Factors:**
 - Focus on **building capacity, adopting new financial instruments, and transferring technology** for effective adaptation.
 - Shift from **reactive, incremental financing** to **anticipatory, strategic, and transformational** adaptation approaches.



● **Key Global and National Initiatives for Adaptation**

➡ **Global Initiatives:**

Paris Agreement: Establishes a global goal for enhancing **adaptive capacity** to climate impacts.

UAE Framework for Global Climate Resilience: Includes **11 global adaptation targets**.

Adaptation Fund: Provides financing for adaptation projects in developing country **Parties to the Kyoto Protocol**.

➡ **India's Adaptation Efforts:**

National Action Plan on Climate Change (NAPCC): Comprises **eight national missions** on climate change, addressing various sectors.

National Adaptation Fund for Climate Change (NAFCC): Supports adaptation actions in vulnerable states.

Sector-specific schemes like **MISHTI** (Mangrove Initiative for Shoreline Habitat & Tangible Income) and **Amrit Dharohar** to support adaptation.

AMU's Minority Status Restored

● Why in News?

- ➡ The Supreme Court, in a 4:3 majority, overruled its 1967 judgment in the S. Azeez Basha vs. Union of India case, which denied minority status to Aligarh Muslim University (AMU) under Article 30(1) of the Constitution.
- ➡ The ruling recognizes AMU as a minority institution, overturning previous judgments that classified it as a central university established through the AMU Act of 1920.

● Background

- ➡ **1967 Judgment:** S. Azeez Basha vs. UOI declared that AMU was not established by a Muslim minority but by a statute, thus denying it minority status.
- ➡ **Parliamentary Action:** The AMU (Amendment) Act, 1981 restored AMU's minority status.
- ➡ **Allahabad High Court (2006):** The HC struck down the minority status, which led to a Supreme Court challenge in 2019.

● Key Highlights of the Recent Judgment

- ➡ **Minority Control Not Essential:** Minority institutions do not need to have direct minority control over administration to claim minority status.
- ➡ **Genesis of Institution:** Courts should trace the origin and the founders of the institution to determine its minority status.
- ➡ **Statutory Establishment:** Minority status is maintained even if the institution was established by statute or through formal incorporation.
- ➡ **Pre-Constitution Institutions:** Institutions founded by communities that became minorities after the Constitution's adoption are also eligible for Article 30(1) protections.

● Constitutional Protection for Minority Educational Institutions

- ➡ **Article 30(1):** Grants linguistic and religious minorities the right to establish and administer educational institutions.
- ➡ **NCMEI Act:** The National Commission for Minority Educational Institutions (NCMEI) Act reinforces these rights, safeguarding minority institutions under Article 30(1).

● Way Forward

- ➡ The Supreme Court has referred AMU's minority status under Article 30 to a regular bench for detailed examination, establishing clarity on similar cases in the future.




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