

# WEEKLY NEWS

May 05-11, 2024

## Urban Heat Island (UHI) Study by NIT Trichy



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## Methane Emissions



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## HIGHLIGHTS

- Neglected Tropical Diseases
- Forest Governance
- DAC+S

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# India-Nepal Border Dispute Over Kalapani

## ● Why in News?

- ➔ Nepal's cabinet approved the printing of new 100 Nepalese currency notes featuring a map that includes the Indian territories of **Limpiyadhura**, **Lipulekh**, and **Kalapani**. This follows Nepal's second Constitution Amendment Bill in 2020, granting legal status to its claims over these areas.

## ● Origin of the Dispute

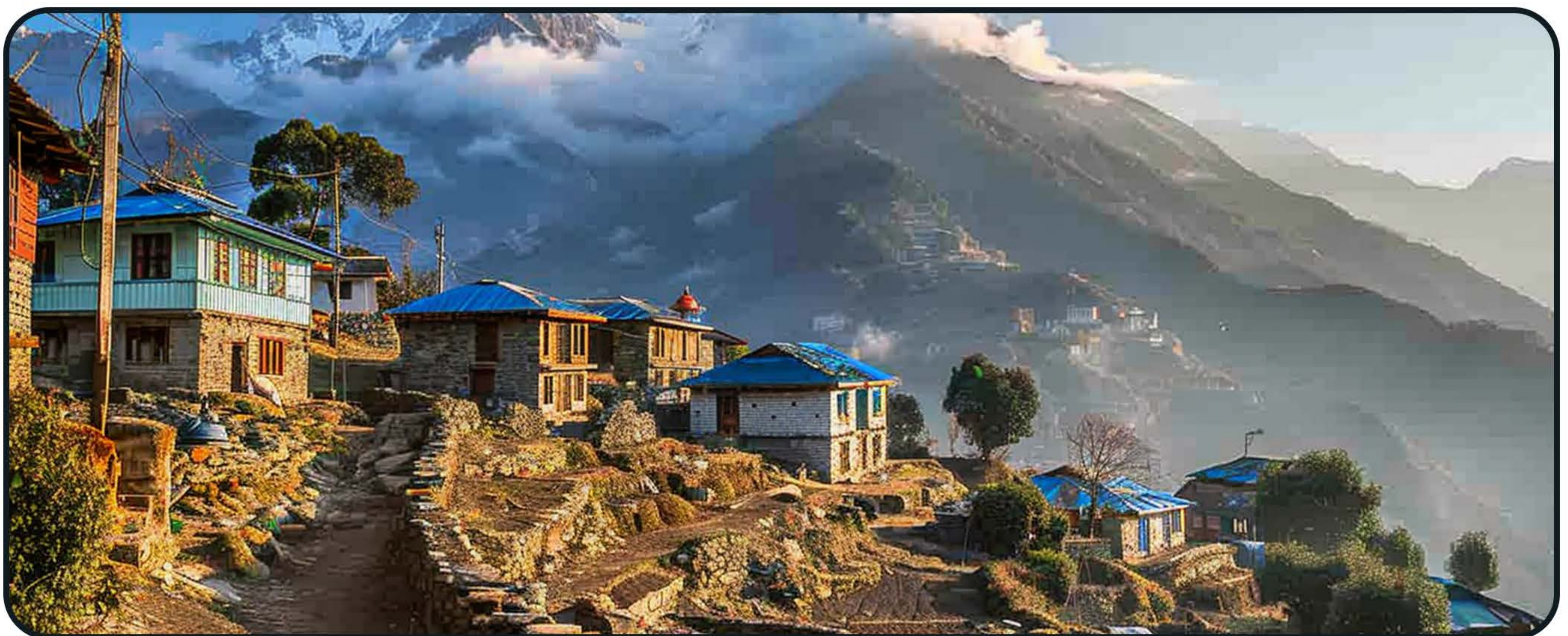
- ➔ The **Treaty of Sagauli (1816)** between the **British East India Company** and the **Nepali Gurkha rulers** set the boundary between India and Nepal using the **River Kali**.
- ➔ The core disagreement revolves around the origin of the River Kali.

**Nepal's Position:** The main River Kali flows to the west of Kalapani, originating at Limpiyadhura or the nearby Lipulekh pass, supporting its claim over these territories.

**India's Position:** The River Kali starts from a smaller rivulet, Pankhagad, in the southern portion of Kalapani, with a ridge to the east as the true border.

## ● Key Issues

- ➔ **Kalapani** is the **largest territorial dispute** between India and Nepal.
- ➔ The disputed region is also a **tri-junction** between **India, Nepal, and Tibet (China)**.



● **India's Response**

- ➡ India considers Limpiyadhura, Lipulekh, and Kalapani as part of its sovereign territory.
- ➡ India termed Nepal's constitutional amendment as a "**unilateral act**" and an "**artificial enlargement**," deeming it untenable.

● **Way Forward**

- ➡ **Diplomatic discussions** and bilateral talks are essential to resolve the border dispute.
- ➡ Both countries need to work together to **prevent escalating tensions** and ensure peaceful resolutions.

● **Conclusion**

- ➡ The India-Nepal border dispute over Kalapani remains a sensitive issue, requiring diplomatic efforts and mutual understanding to address the disagreement and avoid conflict.



# Medical OOPE - PMJAY

## ● Why in News?

- ➔ A recent study revealed significant Medical Out-Of-Pocket Expenditure (OOPE) incurred by patients admitted to private hospitals under the Pradhan Mantri Jan Arogya Yojana (PMJAY), mainly due to dual billing practices.

## ● About PMJAY:

- ➔ **Ministry:** Ministry of Health and Family Welfare.
- ➔ **Genesis:** Launched in 2018 as part of the Ayushman Bharat scheme.
- ➔ **Benefit:** Offers hospital coverage of Rs. 5 lakhs per family per year for secondary and tertiary care across public and private empanelled hospitals.
- ➔ No restrictions based on family size, age, or gender.
- ➔ **Coverage:** Includes up to 3 days of pre-hospitalization and 15 days of post-hospitalization expenses, covering all pre-existing medical conditions.

## ● Challenges with PMJAY Implementation:

- ➔ **Capacity Deficit:** Some states face a high number of people per empanelled healthcare provider, leading to delays in service.
- ➔ **Delayed Claim Settlements:** Despite clear guidelines, delays in claim settlements persist.
- ➔ **Lack of Validation Controls:** Instances highlighted by the CAG report, such as linking over 7 lakh beneficiaries to a single mobile number, underscore the need for essential validation controls in beneficiary registration.
- ➔ **Delayed Grievance Disposal:** CAG report indicates that only around 10% of registered grievances were addressed within the 15-day turnaround time.
- ➔ **Non-adoption of Whistleblower Policy:** Several states like Bihar, Chhattisgarh, Rajasthan, etc., have yet to adopt a whistleblower policy, which could improve transparency and accountability.



● **Way Forward:**

- ➔ **Enhanced Capacity:** Address capacity deficits by increasing the number of empanelled healthcare providers, particularly in states facing shortages.
- ➔ **Streamlined Claim Settlements:** Implement measures to expedite claim settlements and ensure timely reimbursement to hospitals.
- ➔ **Improved Validation Controls:** Strengthen beneficiary registration processes with robust validation controls to prevent irregularities.
- ➔ **Efficient Grievance Redressal:** Establish mechanisms for timely and effective resolution of grievances to enhance beneficiary experience.
- ➔ **Adoption of Whistleblower Policy:** Encourage states to adopt whistleblower policies to promote transparency and accountability in PMJAY implementation.



# Internet's Role in National Security Challenges

## ● Why in News?

- ➔ Internet platforms, especially social media, are being increasingly exploited by terrorists for radicalization, recruitment, and financing, posing significant challenges to national security.

## ● Challenges Posed by the Internet

- ➔ **Propagation of Radical Ideologies:** Social media serves as an echo chamber for spreading propaganda, disinformation, and hate speech, leading to **radicalization and inciting violence**.
- ➔ **Example:** Kozhikode arson case illustrates how online radicalization can trigger real-world violence.
- ➔ **Facilitation of Terror Financing:** Terrorist organizations utilize internet platforms for **fundraising** campaigns, **expanding their reach**, and using virtual or crypto assets, making tracking difficult.
- ➔ **Micro-targeting and Psychological Profiling:** Data collection enables micro-targeting and psychological profiling, allowing the strategic tailoring of **radical content to vulnerable individuals**.
- ➔ **Rise in Cybercrimes:** The internet facilitates various **organized crimes**, including human trafficking, drug smuggling, and money laundering, posing significant challenges to law enforcement.



● **Challenges in Addressing Internet-related Security Concerns**

- ➔ **Anonymity and Privacy Concerns:** Associated anonymity on the internet complicates law enforcement efforts, while privacy concerns hinder effective enforcement of laws.
- ➔ **Use of Deepfakes:** Increasing use of deepfakes adds another layer of complexity to identifying and addressing security threats.
- ➔ **Cross-border Jurisdictions:** Different legal jurisdictions across borders create **challenges in enforcing laws and prosecuting offenders.**

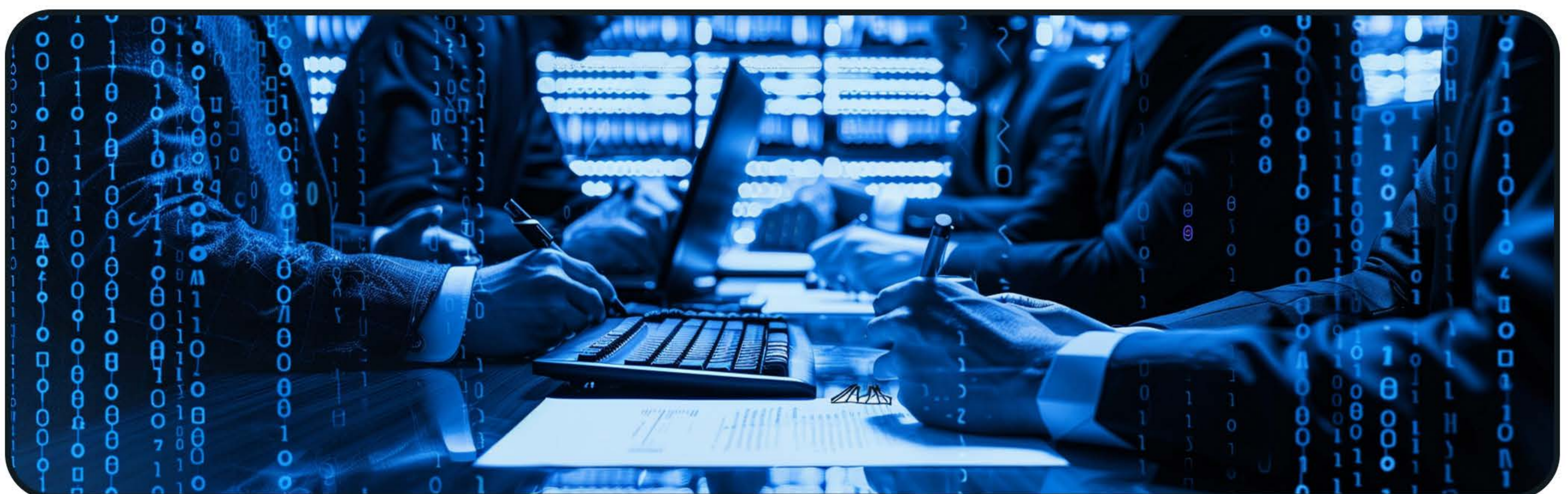
● **Way Forward**

- ➔ **Counter-narrative Campaigns:** Launch targeted **counter-narrative campaigns** to debunk misinformation and disrupt echo chambers promoting radical ideologies.
- ➔ **Content Moderation and Fact-checking:** Implement **robust content moderation and fact-checking mechanisms** to curb the spread of radical content.
- ➔ **International Cooperation:** Promote **international cooperation** among law enforcement agencies, intelligence agencies, and policymakers to address internet-related security challenges effectively.
- ➔ **Strengthen Cybersecurity:** Enhance **cybersecurity measures and regulations**, particularly regarding virtual and crypto assets, to mitigate security risks.



**Interpol: International Criminal Police Organization**

- **Genesis:** Established in 1923 as an inter-governmental organization.
- **Purpose:** Facilitates information exchange between national police forces to combat transnational crimes.
- **Members:** 196 member countries, including India.
- **Organizational Structure:** Comprises the General Assembly, General Secretariat, Executive Committee, and National Central Bureaus (NCBs).
- **NCB:** Each country's focal point for Interpol activities; in India, the Central Bureau of Investigation (CBI) serves as the designated NCB.



# World Press Freedom Index 2024

## ● **World Press Freedom Index**

- ➡ Published by Reporters Without Borders (RSF), a France-based international NGO.
- ➡ The organization focuses exclusively on press freedom.
- ➡ It does not assess the quality of journalism in the countries it examines.
- ➡ It does not consider human rights violations in general.

## ● **Categories measured:**

- ➡ **1. Political Context:** Evaluates the degree of political control or influence over the media.
- ➡ **2. Legal Framework:** Examines the laws and regulations governing press freedom.
- ➡ **3. Economic Context:** Assesses how economic factors impact media independence.
- ➡ **4. Socio-cultural Context:** Considers societal attitudes towards journalism and media.
- ➡ **5. Security:** Looks at the safety and security of journalists in each country.

## ● **Highlights:**

- ➡ **1. 🇳🇴 Norway:** Known for its strong support for press freedom and minimal government interference.
- ➡ **2. 🇩🇰 Denmark:** Has robust legal protections for journalists and media organizations.
- ➡ **3. 🇸🇪 Sweden:** Provides a safe environment for journalists with a high level of media independence.

## ● **Worst Performers:**

- ➡ **1. 🇦🇫 Afghanistan:** Faces ongoing violence and political instability, posing significant risks to journalists.
- ➡ **2. 🇪🇷 Eritrea:** Has strict government control over media and limited press freedom.
- ➡ **3. 🇸🇾 Syria:** Suffers from ongoing conflict, endangering journalists, and restricting media freedom.

- ➡ **🇮🇳 India's Rank:** India is ranked 159 out of 180, indicating a challenging environment for press freedom with issues in several of the measured categories.





● **Highlights About India**

- ➔ **Rank:** India ranks 159 out of 180 countries in the Press Freedom Index, indicating a severe crisis in press freedom.
- ➔ **Journalists Detained:** Since January 2024, nine journalists and one media worker have been detained, though no journalist or media worker has been killed.
- ➔ **Draconian Laws:** The government has introduced restrictive laws to control the media, including the Telecommunications Act 2023, Broadcasting Services Bill 2023, and Digital Personal Data Protection Act 2023.
- ➔ **Unofficial State of Emergency:** The government has created a strong alliance between the ruling party and the major media-owning families. For instance, the Reliance group owns over 70 media outlets with a combined audience of at least 800 million Indians.
- ➔ **Harassment of Journalists:** Journalists critical of the government often face online harassment, threats, and physical attacks.



# Tourism Sector in India

## ● Why in News?

- ⇒ India's tourism sector plays a significant role in the economy, with recent developments and rankings highlighting its importance.

## ● Key Highlights

- ⇒ **Foreign Direct Investment (FDI) in Tourism:** India allows 100% FDI through the automatic route in tourism construction projects, including hotels, resorts, and recreational facilities.
- ⇒ **Global Rankings:** India ranked 6th globally in terms of Travel & Tourism contribution to GDP in 2022 but stood 54th out of 117 countries in the Global Travel and Tourism Development Index 2021 by the World Economic Forum.

## ● Significance of Indian Tourism Sector

- ⇒ **Economic Benefits:** Tourism generates employment and increases foreign exchange earnings, with projections of creating 53 million jobs by 2029.
- ⇒ **Social Benefits:** Tourism fosters cultural understanding, enhances quality of life through improved infrastructure, and promotes cultural diversity and intangible heritage.
- ⇒ **Cultural Benefits:** Tourism contributes to the revival of cultural diversity and showcases the country's rich heritage.

## ● Growth Drivers for Tourism in India

- ⇒ Ease of travel facilitated by initiatives like e-Tourist Visa.
- ⇒ Rise in disposable income of the middle class.
- ⇒ Growth in Medical Tourism due to India's affordable treatment, quality healthcare infrastructure, and skilled doctors.



● **Concerns in the Indian Tourism Sector**

- ⇒ Ecological destruction and disturbance.
- ⇒ Poor infrastructure, accessibility, and safety issues.
- ⇒ Shortage of trained and skilled manpower.

● **Initiatives to Promote Tourism Sector**

- ⇒ **Swadesh Darshan 2.0:** Development of sustainable tourism destinations with a destination and tourism-centric approach.
- ⇒ **PRASHAD Scheme:** Safeguarding India's ancient civilizational heritage through the National Mission on Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive.
- ⇒ **Incredible India Tourist Facilitator Certification Program:** Creating a pool of well-trained and professional Tourist Facilitators nationwide.
- ⇒ **Dekho Apna Desh Initiative:** Promotion of domestic tourism to explore India's diverse destinations.



# Illegal Sand Mining

## ● Why in News?

- ➔ Sand, the second most exploited natural resource globally, faces various challenges and impacts due to unregulated mining practices.

## ● Key Points

- ➔ **Main Sources:** Sand is sourced from **rivers** (riverbed and flood plain), lakes and reservoirs, coastal/marine areas, etc.
- ➔ **Regulation in India:** Governed under the **Mines and Minerals (Development & Regulation) Act, 1957**, sand is classified as a minor mineral, with regulation primarily under the jurisdiction of State Governments.

## ● Illegal Sand Mining

- ➔ **Biodiversity:** Loss of habitat for aquatic and terrestrial flora and fauna.
- ➔ **Hydrological Function:** Alteration of water flows, groundwater pollution, and increase in salinity levels.
- ➔ **Infrastructure:** Damage to bridges, river embankments, and coastal structures.
- ➔ **Extreme Events:** Reduction in protection against floods and storm surges.

## ● Key Measures for Best Practices

- ➔ **Guidelines:** Sustainable Sand Management Guidelines (2016) and Enforcement & Monitoring Guidelines for Sand Mining (2020) focus on river ecology restoration and maintenance.
- ➔ **Sand Mining Framework:** Introduced by the Ministry of Mines in 2018, it promotes alternatives like Manufactured Sand (M-Sand) and sand from Overburden (OB) of coal mines.



● **Sand Mining Framework**

- ➔ Encourages the use of Manufactured Sand (M-Sand) from crushed rock fines and sand from Overburden (OB) of coal mines.
- ➔ **Overburden:** Material above areas economically exploitable, such as rock, soil, and ecosystem above coal seams or ore bodies.

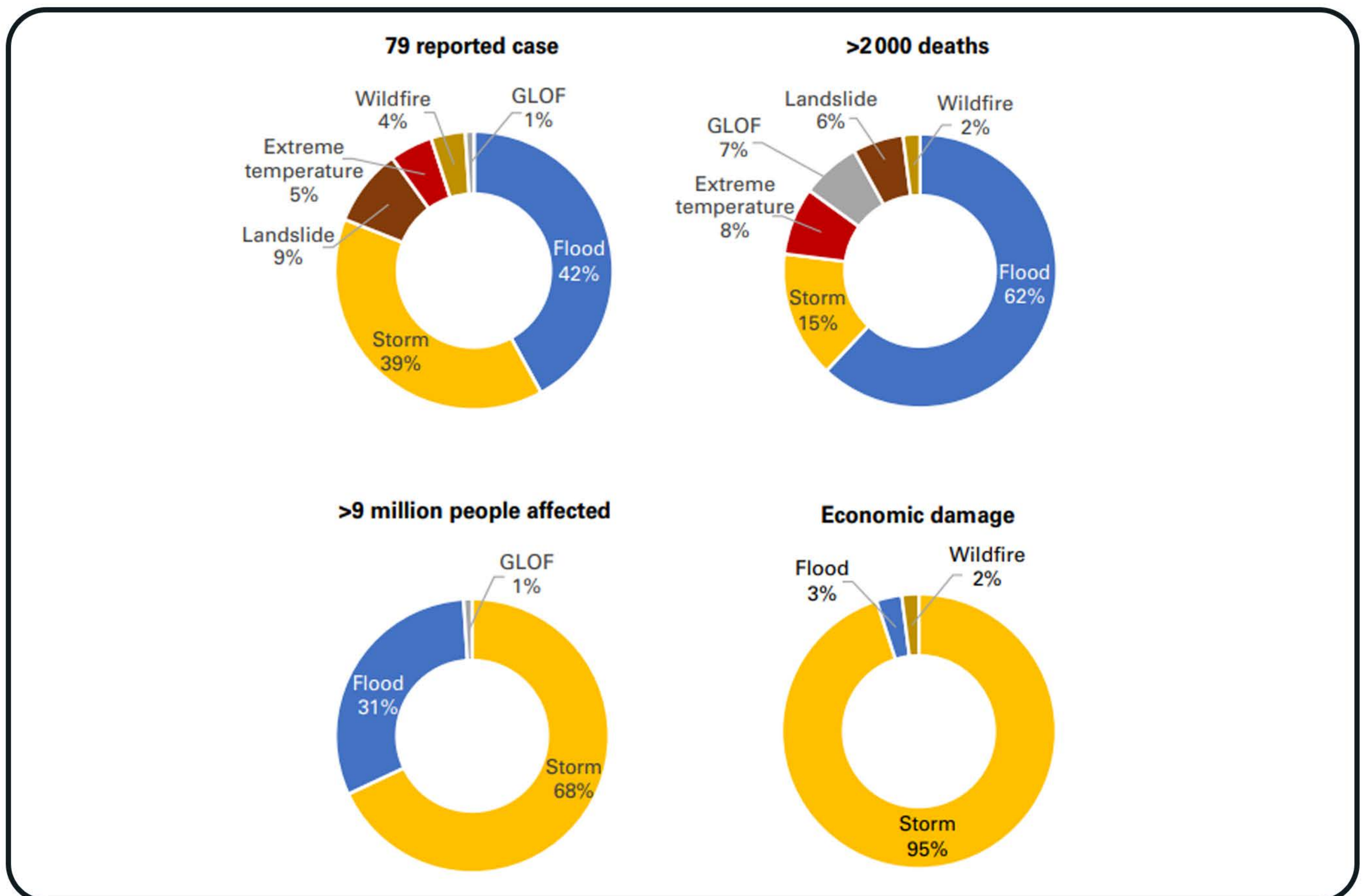


# State of the Climate in Asia 2023 Report

## Why in News?

- ➔ The World Meteorological Organisation (WMO) published the 'State of the Climate in Asia 2023' report.
- ➔ According to the report, Asia experienced the highest number of disasters globally in 2023.

## Key Highlights



Overview of reported disasters in 2023 associated with hydrometeorological hazards in the Asia region

Source: United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and The International Disaster Database (EM-DAT).



## ● **Key Highlights**

### ➡ **Extreme Weather in Asia 2023:**

Asia experienced 79 extreme weather events, impacting over 9 million people and causing over 2,000 direct deaths.

Compared to 2022, the number of reported disaster events decreased by only two.

The lower impact in 2023 was due to fewer large-scale disasters, like the 2022 Pakistan floods, which alone affected over 30 million people.

### ➡ **Temperature Trends:**

The mean temperature over Asia in 2023 was 0.91°C higher than the 1991-2020 reference period, the second-highest on record.

Extreme heat events were widespread, with Japan recording its hottest summer.

### ➡ **Glacial Impact:**

In 2023, record-high temperatures and drier conditions in the Eastern Himalayas and Tien Shan contributed to increased glacier mass loss.

## ● **Highlights About India**

### ➡ **Heat Waves in India 2023:**

Caused 110 deaths, especially in Ballia and Deoria districts.

Temperatures reached 42-43 degrees Celsius during the heat waves.

### ➡ **Floods in India 2023:**

August floods caused 25 deaths in Himachal Pradesh and Uttarakhand, along with significant property damage.

### ➡ **Tropical Cyclones in the Indian Sub-Continent 2023:**

Six cyclones in total: four over the Bay of Bengal (Mocha, Hamoon, Midhili, and Michaung) and two over the Arabian Sea (Biparjoy and Tej).

### ➡ **Glacial Lake Outburst in Sikkim 2023:**

South Lhonak Lake outburst on October 4 led to over 40 fatalities when it breached the Chungthang dam on the Teesta River.

# Urban Heat Island (UHI) Study by NIT Trichy

## ● Why in News?

- ⇒ Study by NIT Trichy highlights significantly higher pollutant concentration in urban areas compared to rural areas, contributing to the Urban Heat Island (UHI) phenomenon.

## ● Key Findings

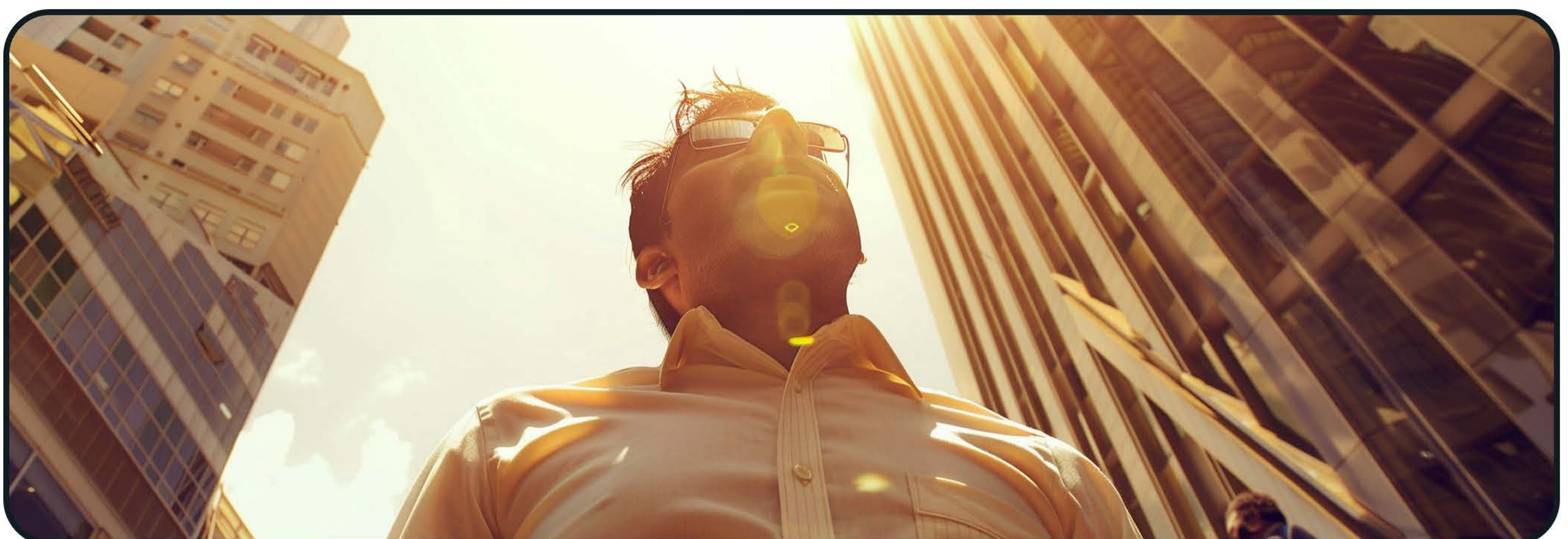
- ⇒ Identified higher concentration of pollutants like **aerosols**, **Carbon monoxide (CO)**, and **ozone (O<sub>3</sub>)** in urban areas.

## ● About Urban Heat Island (UHI)

- ⇒ **Definition:** UHI occurs when cities experience much warmer temperatures than nearby rural areas.
- ⇒ **Temperature Impact:** Can raise temperatures by 5°C to 10°C, exacerbating heat waves.

## ● Causes of UHI

- ⇒ **Reduced Natural Landscapes:** Urban areas with hard, dry surfaces like roofs, sidewalks, and roads.
- ⇒ **Urban Geometry:** Structures obstructed by neighboring buildings become large thermal masses.
- ⇒ **Heat from Human Activities:** Vehicles, air-conditioning units, and industrial facilities contribute to heat generation.



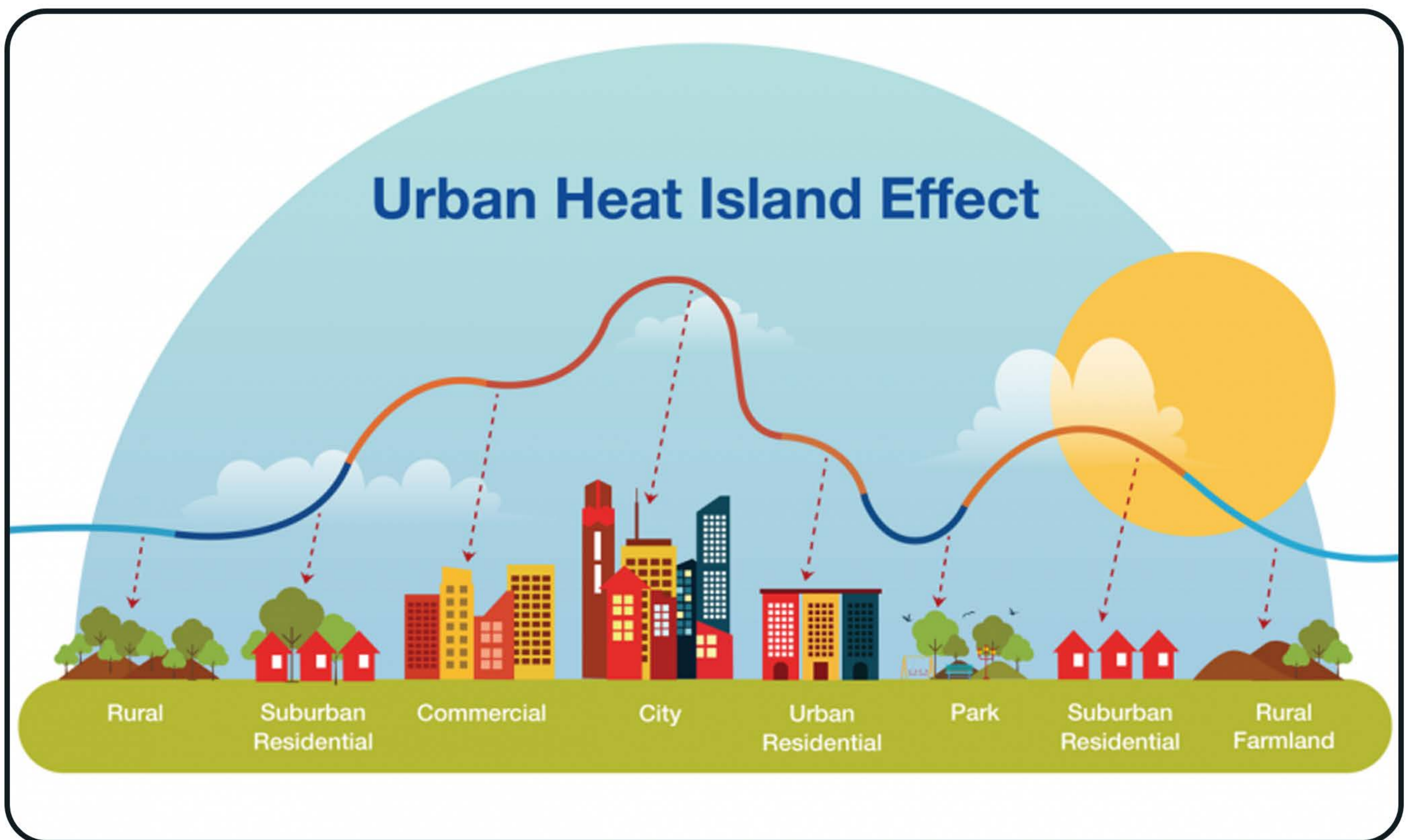


● **Impact of UHI**

- ➡ **Higher Energy Consumption:** Increased demand for air conditioning to cool buildings.
- ➡ **Health Impacts:** Respiratory problems, sunstroke, dehydration, tiredness, etc.

● **Way Forward**

- ➡ **Use of High Albedo Materials:** Materials with **high albedo** reflect more sunlight, reducing heat absorption.
- ➡ **Promote Urban Greenery:** Implementation of **green roofs, green surfaces, and urban greenery** to mitigate UHI effects.



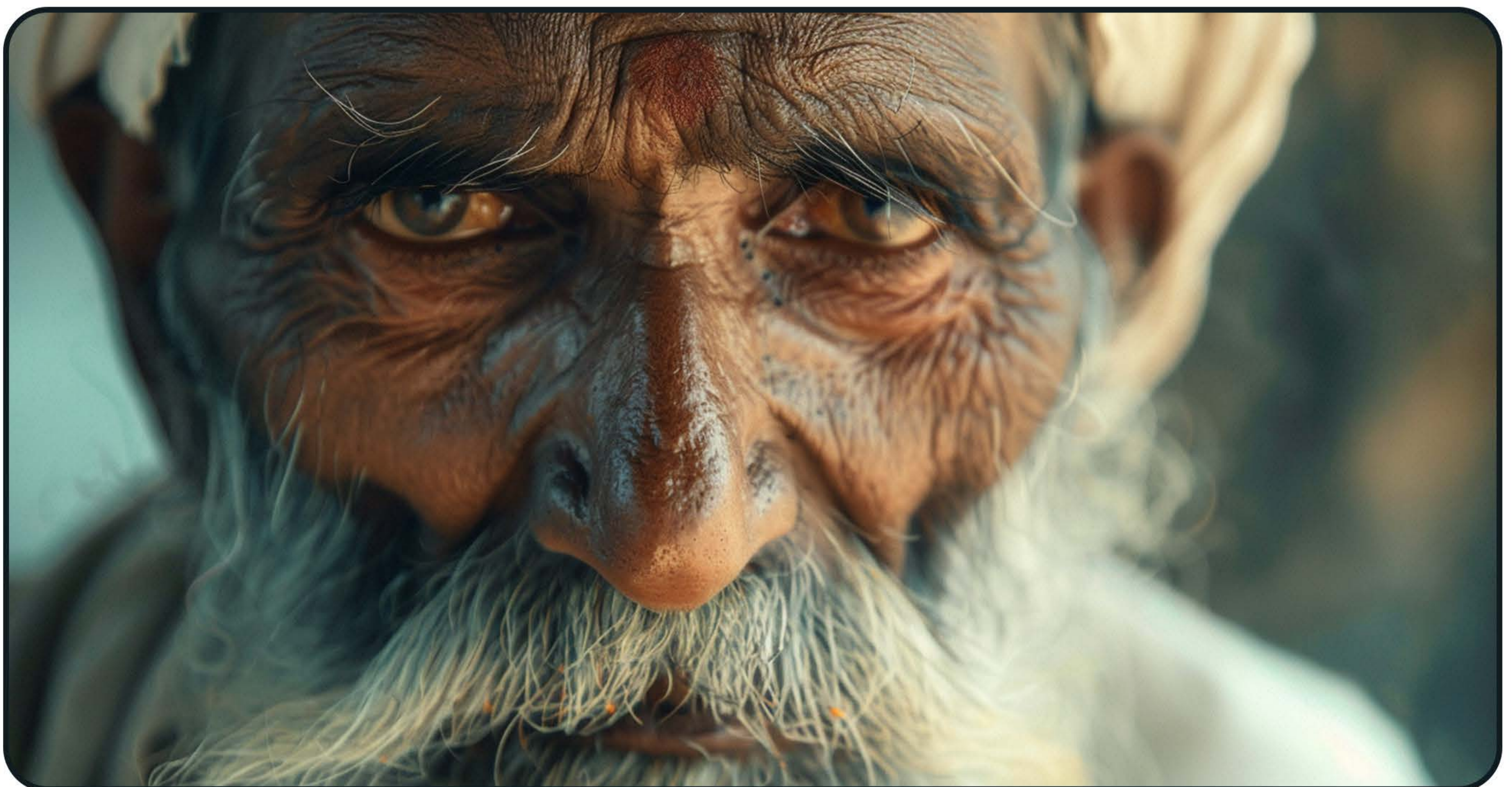
# Ageing Population in India

## ● Demographic Trends

- ➔ India's elderly population is expected to more than double from 100 million in 2011 to 230 million by 2036.
- ➔ By 2050, this number is predicted to reach 319 million, accounting for almost 20% of the total population.

## ● Issues related to Elderly Population in India

- ➔ **Social Security Gaps:** The support systems for the elderly are inadequate.
- ➔ **Pension Shortfalls:** Retirement funds are often insufficient for the ageing population.
- ➔ **Social Isolation:** An increasing risk of loneliness as demographics shift.
- ➔ **Economic Pressure:** Fewer workers are supporting a growing number of retirees.
- ➔ **Healthcare Strain:** Rising demand for healthcare services for the elderly.
- ➔ **Elder Abuse Risks:** Heightened concerns about mistreatment of seniors.
- ➔ **Employment Challenges:** Older workers face hurdles in securing jobs.
- ➔ **Policy Shortcomings:** Government planning for ageing challenges is limited.
- ➔ **Caregiver Stress:** Family caregivers are under increased pressure.
- ➔ **Infrastructure Deficits:** Facilities to meet elderly needs are lacking.



● **Measures to improve quality of life of elder persons**

- ➔ **Pradhan Mantri Vaya Vandana Yojana:** A pension scheme for senior citizens, offering regular annuities for a steady income in retirement.
- ➔ **Rashtriya Vayoshree Yojana:** A government program providing assistive devices to elderly people with disabilities or mobility issues.
- ➔ **SAMPANN Project:** A digital platform to ensure quick and efficient pension processing for pensioners.
- ➔ **Elder Line: Toll-Free Number for Elderly:** A national helpline for seniors offering assistance with healthcare, pensions, and other concerns.
- ➔ **SAGE (Seniorcare Ageing Growth Engine) Initiative:** An initiative supporting start-ups focusing on elder care and ageing-related solutions.
- ➔ **SACRED Portal for Elderly:** An online portal that helps elderly individuals find job opportunities and stay connected to the workforce.



# Disinformation in National Elections

## ● Why in News?

- ➔ Artificial intelligence-generated fake audio and video clips reported in recent national elections globally.

## ● Key Points

- ➔ **Disinformation Definition:** Intentional spread of **misleading** or **biased** information.
- ➔ **Users of Disinformation:** Criminals, terrorist/extremist groups, and state-sponsored actors for propaganda, confusion, or violence.
- ➔ **Role of Information Technology:** Significant in the spread of disinformation.

## ● Challenges Posed by Disinformation

- ➔ **Violation of Human Rights:** Interference with the right to freedom of thought and opinion.
- ➔ **Erosion of Trust in Democratic Institutions:** Misinformation can sway public opinion, affecting democracy and policy.
- ➔ **Polarization of Society:** Disinformation often seeks to polarize audiences along political or social lines.
- ➔ **Digital Violence and Repression:** Coercive use of information includes cyber-stalking, harassment, or cyberbullying.



● **Steps Taken**

- ⇒ **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021:** Requires social media platforms to remove fact-checked content.
- ⇒ **Information Technology (IT) Act, 2008:** Can penalize those spreading fake news through electronic communication.
- ⇒ **Bharatiya Nyaya (Second) Sanhita, 2023:** Contains provisions for combating fake news, including electronic dissemination.

● **Way Forward**

- ⇒ **Technological Solutions:** Use of AI and machine learning to identify and filter out false information.
- ⇒ **Collaboration:** Governments, tech companies, and civil organizations should collaborate for effective regulation.
- ⇒ **Threat Monitoring:** Regular updates and monitoring of technological systems.
- ⇒ **International Cooperation:** Sharing best practices and intelligence.



# Methane Emissions

## ● Why in News?

⇒ A recent modelling study has highlighted the various processes contributing to increased methane emissions, which are exacerbating global warming.

## ● What is Methane?

⇒ Methane (CH<sub>4</sub>) is a colorless, odorless, and **highly flammable** gas, primarily found in natural gas.

## ● Harmful Effects

⇒ **Powerful Greenhouse Gas:** Methane is the second most abundant anthropogenic greenhouse gas (GHG) after CO<sub>2</sub> and has a higher warming potential than CO<sub>2</sub>.

⇒ **Part of Carbon Cycle:** Methane plays a significant role in the carbon cycle, contributing to climate change.

## ● Emission by India

⇒ **India** is the **4th largest methane emitter** globally, following China, USA, and Russia.

⇒ **Agriculture Sector:** With the world's largest cattle population and as the second largest rice producer, agriculture accounts for 61% of India's total methane emissions.

⇒ **Energy Sector:** Contributes 16.4% to methane emissions.

⇒ **Waste Sector:** Contributes 19.8% to methane emissions.



● **Findings of Study: Sources**

- ➔ **Thermogenic Methane:** Released during the extraction of fossil fuels and methane hydrates.
- ➔ **Biogenic Methane:** Released from microbial actions, intensified by anthropogenic activities.
- ➔ **Stability of Oil & Natural Gas Exploration Emissions:** Methane emissions from this sector have remained stable since 1990-2000.

● **Steps Taken by India to Reduce Methane Emissions**

- ➔ **Galvanising Organic Bio-Agro Resources (Gobar-Dhan) Scheme:** Offers incentives to farmers for cattle waste recovery, used in bio-energy production.
- ➔ **Anti-Methanogenic Feed Supplement 'Harit Dhara':** Developed by the Indian Council of Agricultural Research (ICAR), it can reduce cattle methane emissions by 17-20%.

● **Way Forward**

- ➔ **Enhanced Monitoring and Regulation:** Implementing stricter regulations and monitoring mechanisms to reduce methane emissions across sectors.
- ➔ **Promotion of Sustainable Practices:** Encouraging the adoption of sustainable agricultural practices and renewable energy sources to mitigate methane emissions.
- ➔ **Research and Innovation:** Investing in research and innovation for the development of more efficient methane reduction technologies and practices.



# India's Contribution to UN Counter-Terrorism Efforts

## ● Why in News?

- ➔ Minister of External Affairs announced India's contribution during the UN Security Council's Counter Terrorism Committee meeting in 2022 under India's presidency.

## ● India's Contribution to UNOCT Programs

- ➔ **CFT Aims:** Strengthening the capacity of member states to understand terrorism risks. India's support will bolster efforts in understanding and addressing terrorism-related financial activities.
- ➔ **CTTP Assistance:** Building capabilities of beneficiary member states to detect and counter terrorists. India's assistance will aid in enhancing the ability to identify and thwart terrorist travel activities.

## ● Challenges in Addressing Terrorism

- ➔ **Lack of Definition:** Universally accepted definition of terrorism remains elusive. Defining terrorism universally is a challenge due to varying interpretations and interests.
- ➔ **Tracing Terror Funding:** Difficulty in tracking terror funding, especially with the use of virtual currencies like Bitcoin. Tracking the flow of funds for terrorist activities is hindered by the anonymity and complexity of cryptocurrency transactions.
- ➔ **Countering Lone-wolf Attacks:** Challenges in addressing lone-wolf attacks due to the secretive nature of attackers. Preventing lone-wolf attacks is complicated as perpetrators often operate independently and discreetly.





● **Measures Taken to Counter-Terrorism**

➔ **Global Initiatives**

**UN Global Counter-Terrorism Strategy:** Enhancing national, regional, and international efforts to combat terrorism. The strategy aims to coordinate global actions to address various dimensions of terrorism.

**Regional Anti-terrorist Structure:** Participation in the Shanghai Cooperation Organization's structure to combat terrorism, separatism, and extremism. Collaborative efforts within regional frameworks are crucial in addressing specific security threats.

**Financial Action Task Force (FATF) Membership:** India's involvement in FATF as a global watchdog for money laundering and terrorist financing. FATF membership enables India to contribute to global efforts to combat illicit financial activities linked to terrorism.

➔ **Initiatives in India**

**Financial Intelligence Unit (FIU):** Strengthening efforts against money laundering and financing of terrorism. FIU plays a vital role in collecting, analyzing, and disseminating financial intelligence to combat financial crimes.

**National Investigation Agency (NIA):** Serving as India's Central Counter Terrorism Law Enforcement Agency. NIA conducts thorough investigations and counter-terrorism operations to address terrorist threats within India.

● **UNOCT's Role in Counter-Terrorism**

➔ **Establishment:** UNOCT was established in 2017.

➔ **Counter-Terrorism Trust Fund:** Established in 2009 by the Secretary-General and transferred to UNOCT.

➔ **UNCCT:** Main capacity-building arm of UNOCT. UNCCT focuses on improving visibility, advocacy, and resource mobilization for UN counter-terrorism efforts. It strengthens the delivery of UN counter-terrorism capacity-building assistance to Member States.



# Mother Tongue Education in Recent CBSE Circular

## ● Why in News?

- ➔ **CBSE Circular:** The Central Board of Secondary Education (CBSE) emphasized mother tongue education in a recent circular.
- ➔ **Alignment with Policies:** This directive aligns with the National Education Policy (NEP) 2020 and the National Curriculum Framework (NCF) 2022.

## ● Key Provisions

### ➔ National Education Policy (NEP) 2020

**Mother Tongue Education:** Advocates for mother tongue education until at least Grade 5.

**Extension:** Preferably extends mother tongue education to Grade 8 and beyond.

### ➔ National Curriculum Framework (NCF) 2022

**Primary Medium of Instruction:** Recommends mother tongue as the primary medium of instruction for children until eight years of age.



## ● **Other Provisions for Education in Mother Tongue**

### ⇒ **Article 350A of the Indian Constitution**

**State Mandate:** Mandates states to provide primary education in the mother tongue for children belonging to linguistic minority groups.

### ⇒ **Section 29 of the Right to Education Act, 2009**

**Medium of Instruction:** States that, as far as possible, the medium of instruction in education should be in the mother tongue.

## ● **Importance of Education in Mother Tongue**

⇒ **Cognitive Skills and Learning Outcomes:** Enhances cognitive skills, improves learning outcomes, and academic performance.

⇒ **Comprehension:** Facilitates comprehension of complex subjects.

⇒ **Confidence and Heritage Connection:** Empowers learners to express themselves confidently and connect with their heritage.

⇒ **Teacher-Student Communication:** Facilitates better communication and understanding between teachers and students.

## ● **Challenges Related to Education in Mother Tongue**

⇒ **Resource Allocation:** Allocating resources for materials and training teachers.

⇒ **Standardization:** Difficulty in standardizing curriculum.

⇒ **Transition to Higher Education:** Transition to English-medium higher education is challenging.

## ● **Initiatives to Promote Education in Mother Tongue**

### ⇒ **National Initiatives**

**NISHTHA Program:** National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA) promotes teaching in mother tongue, regional language, and home language under the Foundational Literacy and Numeracy (FLN) program.

**Entry Level Primers:** 52 entry level primers tailored to various mother tongues and local languages spoken across India, launched by NCERT and the Indian Institute of Languages.

### ⇒ **Global Initiatives**

**International Mother Language Day:** Celebrated on 21st February, initiated by Bangladesh and recognized by UNESCO in 1999.

**Yuelu Proclamation:** Issued by UNESCO for the protection and promotion of linguistic diversity.



● **Way Forward**

- ➔ **Teacher Training:** Strengthen teacher training programs to support mother tongue education.
- ➔ **Curriculum Development:** Develop standardized curricula and learning materials in various mother tongues.
- ➔ **Smooth Transition:** Create pathways for smooth transition from mother tongue education to higher education in English.
- ➔ **Awareness:** Increase awareness and appreciation of linguistic diversity and its benefits in education.



# Economic and Climate Potential of Earth Observation (EO) Technologies

## ● Why in News?

⇒ **World Economic Forum Report:** The World Economic Forum released a report detailing the economic potential of Earth Observation (EO) technologies across various sectors.

## ● Understanding Earth Observation (EO)

⇒ **Definition:** EO refers to collecting information about Earth's activities and characteristics, both natural and artificial, including physical, chemical, biological, and human systems.

⇒ **Types of EO Data:**

**Remotely-Sensed Data:** Collected from satellites, piloted aircraft, etc.

**In-Situ Data:** Gathered from GPS-enabled devices, Internet-of-Things sensors, etc.

## ● Economic Opportunities of EO

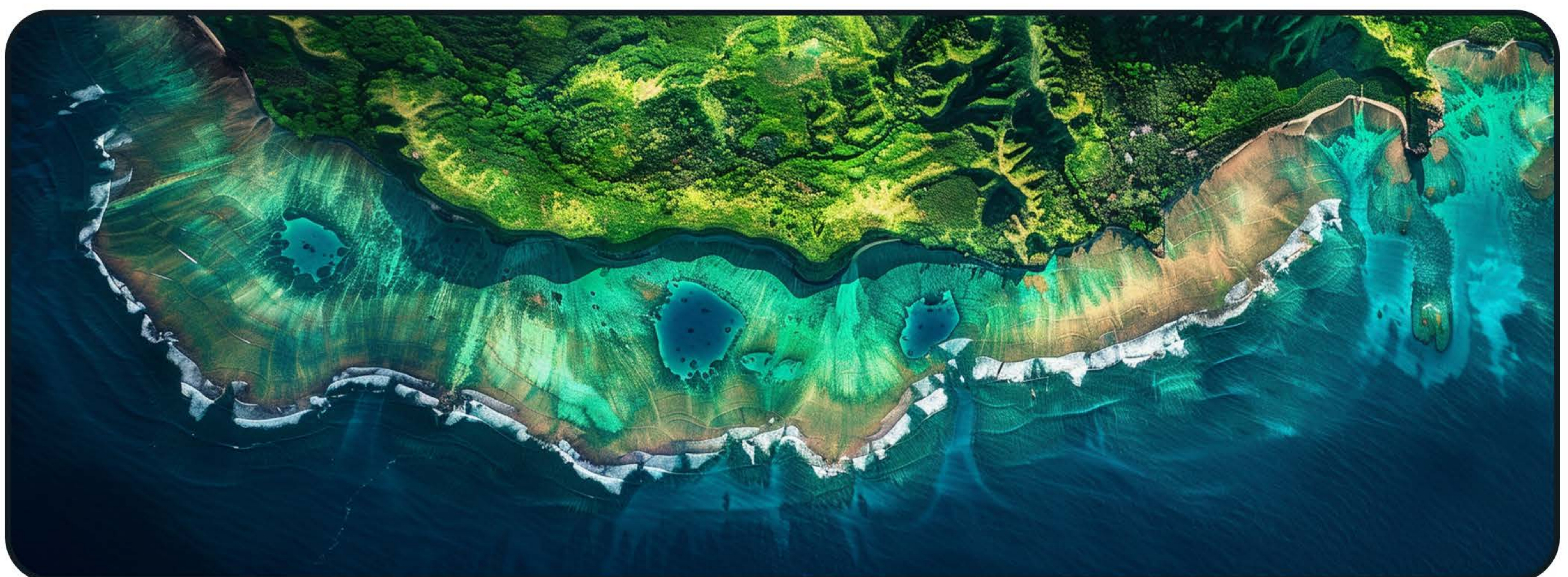
⇒ **Global GDP Contribution:** EO technologies are projected to contribute \$3.8 trillion to the global gross domestic product between 2023-2030.

⇒ **Beneficiary Industries:**

**Agriculture:** Reduce consumption through precision agriculture.

**Electricity and Utilities:** Forecast energy potential and manage operations for new solar, wind, and hydropower sites.

**Mining:** Search for rare Earth minerals in old mines and enhance lithium exploration.



● **Climate Opportunities of EO**

- ➡ **CO2 Reduction:** EO applications have the potential to reduce over 2 billion tonnes of CO2 annually by 2030.
- ➡ **Key Applications:**
  - Early Warning:** Better characterize wildfire risk and spot wildfires faster.
  - Environmental Impact Monitoring:** Satellites and aircraft-borne EO sensors can monitor greenhouse gases.

● **Challenges**

- ➡ **Awareness:** Limited awareness of EO applications.
- ➡ **Talent Shortage:** Shortage of specialized talent in the EO field.
- ➡ **Standards:** Fragmented standards in EO technology.
- ➡ **Market Navigation:** Difficulty navigating the complex EO marketplace.

● **Global Initiatives for EO**

- ➡ **MethaneSAT:** Pinpoints entities responsible for methane emissions.
- ➡ **Allen Coral Atlas Monitoring Tool:** World's first satellite-based global coral reef monitoring system.
- ➡ **NASA-ISRO Synthetic Aperture Radar (NISAR):** Aims to understand changes in Earth's ecosystems, ice mass, vegetation biomass, etc.

● **Way Forward**

- ➡ **Increase Awareness:** Promote understanding and awareness of EO applications and benefits.
- ➡ **Develop Talent:** Invest in education and training to build specialized talent in EO technologies.
- ➡ **Standardization:** Work towards unified standards for EO data and technologies.
- ➡ **Simplify Market Access:** Streamline the EO marketplace to make it more accessible for businesses and stakeholders.



# The Impact of Climate Change on Monetary Policy in India

## ● Why in News?

⇒ **Climate Change Effects:** Understanding the impact of climate change on monetary policy is crucial as it directly influences inflation and the overall economic stability.

## ● Understanding Monetary Policy

⇒ **Definition:** Monetary policy is the adjustment of the money supply in the economy by the Reserve Bank of India (RBI) to achieve a balance of inflation and output stabilization.

## ● Climate Change Effects on Monetary Policy

### ⇒ Inflation Impact

**Adverse Weather Events:** These affect agricultural production and global supply chains, leading to direct impacts on inflation.

### ⇒ Natural Rate of Interest (NRI)

**Impact on NRI:** Increasing temperatures and extreme weather events undermine productivity, lowering potential output and affecting the NRI.

**Definition of NRI:** A real short-term interest rate consistent with output at its potential and a stable rate of inflation.

**Monetary Policy Stance:** NRI helps define whether the monetary policy stance is accommodative, neutral, or restrictive.

### ⇒ Financial Sector Impact

**Financial Health:** Climate change affects the financial health of banks and other institutions, the value of assets, and economic expectations of individuals and businesses.



● **Steps Taken for Transition to a Green Economy**

➡ **Sovereign Green Bonds**

**Union Budget 2022-23:** Announced to fund projects aiding in India's transition to a low-carbon economy.

➡ **Foreign Institutional Investors (FIIs)**

**Green Securities:** FIIs are allowed to participate in future green government securities.

➡ **Foreign Direct Investment (FDI)**

**Solar Energy Projects:** Up to 100 percent FDI is allowed under the automatic route for solar energy projects.

➡ **Green Climate Fund (GCF)**

**Financial Support:** Provides financial support for low-emission and climate-resilient development projects.

**Engagement with India:** India engages with GCF on projects like water management and clean energy initiatives.

● **Way Forward**

➡ **Green Taxonomy:** Adopting a green taxonomy to assess the sustainability credentials and rank economic activities.

➡ **Climate Risk Modeling:** Incorporate climate risk into the modeling frameworks used for monetary policy formulation.





# Neglected Tropical Diseases (NTDs)

## ● Why in News?

➔ 2023 Progress Report: A report detailing the progress made in 2023 towards achieving the targets set in the Road Map for NTDs 2021–2030.

## ● Targets of the Road Map for NTDs 2021–2030

➔ **Treatment Reduction:** 90% reduction in the number of people requiring treatment for NTDs.

➔ **Disability Reduction:** 75% reduction in disability-adjusted life years (DALYs) related to NTDs.

➔ **Disease Elimination:** Eliminate at least one NTD from 100 countries.

➔ **Disease Eradication:** Eradicate two diseases (dracunculiasis and yaws) globally.

## ● Findings of the Report

➔ **Global Interventions Needed:** 1.62 billion people required interventions against NTDs in 2022.

➔ **NTD Elimination:** Five countries eliminated one NTD, and one country eliminated two NTDs in 2023.

## ● India-Related Findings

➔ **Interventions Needed:** 40.56% of Indian people required interventions against NTDs in 2022.

➔ **Disease-Free Certifications:** India was certified free of dracunculiasis in 2000 and yaws in 2016.



● **Key Challenges with NTDs**

- ➡ **Data Reliability:** Lack of reliable data on the number of NTDs.
- ➡ **Underdiagnosis and Under-reporting:** Due to inadequate surveillance and detection systems.
- ➡ **Funding:** Inadequate funding and slow adoption of new NTD interventions.
- ➡ **Financial Vulnerability:** High out-of-pocket expenditure makes poor populations more vulnerable.

● **Recommendations**

**Accelerate Progress:** Focus on high-burden countries to speed up progress.

**Global Health Agenda:** Reposition NTDs within the global health agenda (e.g., health emergencies, pandemic prevention, One Health).

**Work Plan Development:** Develop a work plan for 2025–2030 with a proper timeline and targets.



**Neglected Tropical Diseases (NTDs)**

- **Definition:** NTDs are diseases of viral, fungal, and non-communicable origin, mainly prevalent in tropical areas.
- **Neglected Status:** Called ‘neglected’ because they are almost absent from the global health agenda.
- **Examples of NTDs:** Includes diseases such as yaws, chikungunya, dengue, trachoma, dracunculiasis, leprosy, lymphatic filariasis, rabies, soil-transmitted helminthiases, and leishmaniasis.

● **Way Forward**

- ➡ **Improve Data Collection:** Enhance surveillance and data collection for accurate reporting.
- ➡ **Increase Funding:** Secure more funding and promote the adoption of new interventions for NTDs.
- ➡ **Global Health Integration:** Ensure NTDs are prioritized within the broader global health agenda.
- ➡ **Support Vulnerable Populations:** Reduce out-of-pocket expenses to protect poor populations from NTDs.

● By addressing these challenges and following the recommendations, significant progress can be made towards achieving the targets set in the Road Map for NTDs 2021–2030.



# Direct Air Capture and Storage (DAC+S) Technology

## ● Why in News?

- ➔ **New DAC+S Facility:** Swiss company Climeworks launched its second commercial Direct Air Capture and Storage (DAC+S) facility, significantly larger than its predecessor, Orca.

## ● Understanding DAC+S Technology

- ➔ **Definition:** DAC+S is a Carbon Dioxide Removal (CDR) technology that captures CO<sub>2</sub> directly from the atmosphere at any location.
- ➔ **Distinction from Carbon Capture:** Unlike traditional carbon capture, which occurs at emission sources, DAC+S captures CO<sub>2</sub> from the ambient air.
- ➔ **CO<sub>2</sub> Utilization:** Captured CO<sub>2</sub> can be permanently stored in deep geological formations or used for various applications.

## ● About Carbon Dioxide Removal (CDR)

- ➔ **Definition:** CDR refers to anthropogenic activities that remove CO<sub>2</sub> from the atmosphere and store it durably in geological, terrestrial, or ocean reservoirs.
- ➔ **Importance:** According to the IPCC Sixth Assessment Report, CDR is essential for achieving net-zero CO<sub>2</sub> and greenhouse gas (GHG) emissions.



● **Other CDR Technologies**

- ➡ **Afforestation/Reforestation and Soil Carbon Sequestration:** Fixing atmospheric carbon in biomass and soils.
- ➡ **Enhanced Weathering:** Using minerals from mined rocks that naturally absorb CO2.
- ➡ **Ocean-based CDR:** Techniques include ocean fertilization (adding nutrients to upper layers), ocean alkalinity enhancement (transforming CO2 into biocarbonate/carbonate), and coastal blue carbon management.
- ➡ **Bioenergy with Carbon Capture and Storage (BECCS):** Using biomass as energy for CDR and storing biogenic carbon geologically.

● **Challenges in CDR**

- ➡ **Energy Needs and Costs:** Higher energy requirements and associated costs.
- ➡ **Environmental Impact:** Potential air pollution from mining activities.
- ➡ **Resource Demand:** Significant land and water demand.
- ➡ **Ocean Acidification:** Potential negative impact on ocean chemistry.

● **Way Forward**

- ➡ **Research and Development:** Invest in R&D to improve the efficiency and reduce the costs of CDR technologies.
- ➡ **Policy Support:** Implement supportive policies and incentives to accelerate the adoption of CDR technologies.
- ➡ **Sustainability:** Ensure sustainable practices to minimize environmental impacts, such as reducing air pollution and resource demand.
- ➡ **Public Awareness:** Increase awareness about the importance and benefits of CDR technologies in combating climate change.

- By addressing these challenges and promoting advancements in CDR technologies like DAC+S, significant progress can be made towards achieving global net-zero CO2 and GHG emissions targets.



# WEF's AI4AI Initiative

- **Why in News?**

- ➔ **World Economic Forum's AI for Agriculture Innovation (AI4AI) Initiative:** The initiative aims to scale agricultural technology (agritech) services through public-private partnerships, shaping the agriculture ecosystem.

- **Role of Agritech in Agriculture Ecosystem**

- ➔ **Categories and Work Areas**

Category	Work Area	Use Cases
<b>Intelligent Crop Planning</b>	<i>Developing detailed, market-oriented, and sustainable crop plans</i>	<i>Gene editing, AI-based soil testing advice</i>
<b>Smart Farming</b>	<i>Enhancing efficiency in farm operations</i>	<i>AI and Augmented Reality (AR) for crop planning, hyperlocal weather predictions, yield prediction, distributed ledger-based index insurance</i>
<b>Farmgate-to-Fork</b>	<i>Connecting farmers to markets and addressing crop loss issues</i>	<i>Traceability, IoT-enabled warehousing, smart logistics</i>
<b>Data as an Enabler</b>	<i>Ensuring access to high-quality, usable data</i>	<i>Digital Public Infrastructure (DPI) for farmers' welfare</i>



● **Challenges in Agritech Adoption**

- ➡ **Acquisition Costs:** High up-front costs and lack of uniform standards.
- ➡ **Data Issues:** Concerns around farm data sharing and ownership.
- ➡ **ROI Uncertainty:** Unclear return on investment for farmers.

● **Way Forward**

- ➡ **Inclusive Digital Architecture:** Develop gender-inclusive digital frameworks.
- ➡ **Public-Private Partnerships:** Scale agritech through collaboration between public and private sectors.
- ➡ **Farmer Education:** Educate farmers and generate interest in agritech solutions.

● **India's Initiatives for Agritech Adoption**

➡ **Key Programs**

- ➡ **Agri Stack:** Facilitates the delivery of agritech services to farmers by the government and agritech start-ups.

**Datasets Included:** Farmer identity, geotagged farm location, crops-sown data.

- ➡ **Agricultural Data Exchange (ADeX):** India's first data exchange platform for farmer services.

- ➡ **Digital Agriculture Mission (DAM):** Encompasses various initiatives such as:

**India Digital Ecosystem of Agriculture (IDEA)**

**Farmers Database**

**Unified Farmers Service Interface (UFSI)**

**National e-Governance Plan in Agriculture (NeGPA)**

- By addressing these challenges and implementing the recommended strategies, the agritech sector can significantly enhance the agricultural ecosystem, promoting sustainability and efficiency.



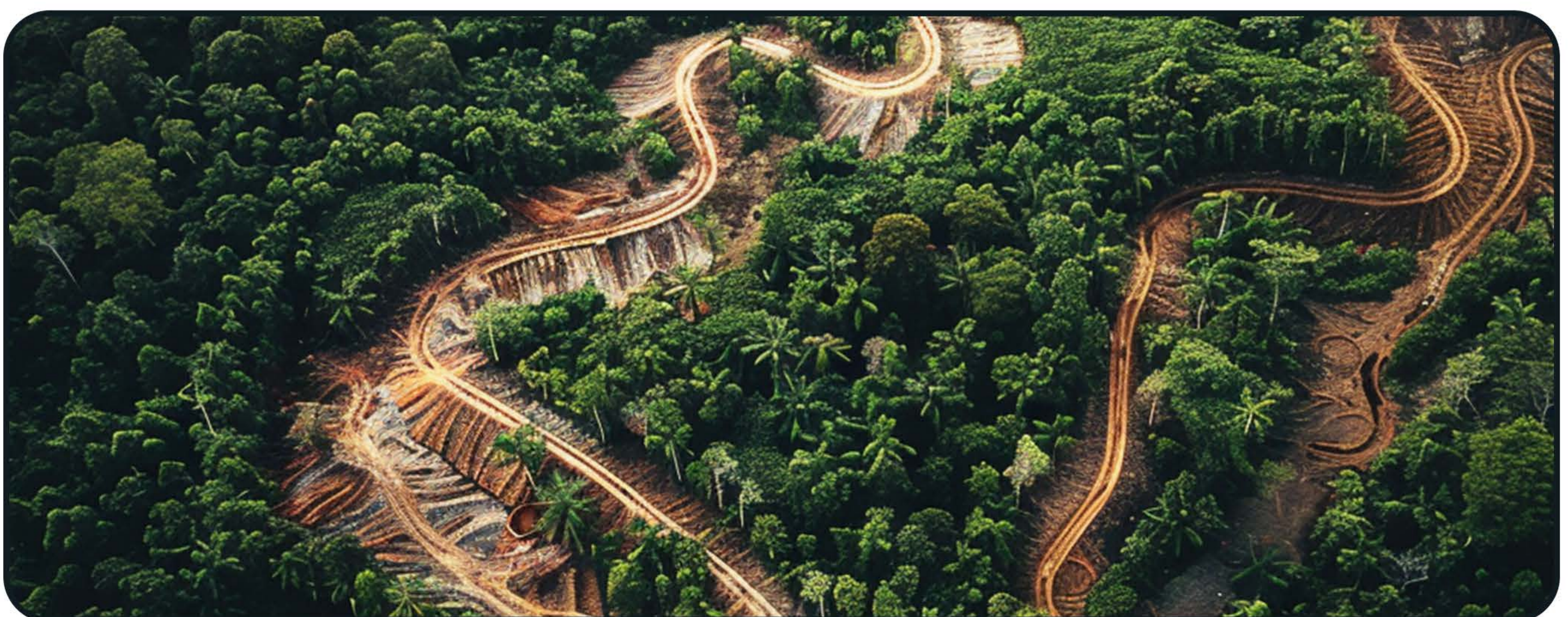
# ***International Forest Governance: Trends, Challenges, and New Approaches***

## ● **Why in News?**

- ➔ **IUFRO Report Release:** The International Union of Forest Research Organizations (IUFRO) has released a report titled "International Forest Governance: A Critical Review of Trends, Drawbacks, and New Approaches".
- ➔ **UNFF19 Context:** The report was released during the 19th session of the UN Forum on Forests (UNFF19).

## ● **Key Concerns Related to International Forest Governance (IFG)**

- ➔ **Deforestation Rates:** IFG has had limited success in reducing deforestation, with rates at about 10 million hectares per year as of 2020 (Food and Agriculture Organization).
- ➔ **Crowded and Fragmented Landscape:** The proliferation of new actors and instruments has made IFG more crowded and fragmented.
- ➔ **Climate Crisis Influence:** The increasing urgency of the climate crisis has led to the commodification of forests for their carbon sequestration potential, often prioritizing short-term economic gains over long-term sustainability and justice. This phenomenon is known as the climatisation of forests.
- ➔ **Limited Role of Community-led and Philanthropic Financing Mechanisms:** The challenges faced by initiatives driven by local communities and philanthropic funding in contributing effectively to international forest governance due to financial constraints, lack of recognition, capacity challenges, and sustainability concerns.



● **Recommendations**

- ➡ **Pricing Environmental and Social Externalities:** Set prices on environmental and social externalities.
- ➡ **Public Goods Management:** Recognize and manage public goods effectively.
- ➡ **Alternative Funding Schemes:** Establish and promote alternative funding schemes.
- ➡ **Polycentric Governance Approach:** Adopt a polycentric governance approach in an interdependent system.

● **About International Forest Governance (IFG)**

➡ **Definition:** IFG comprises the policy, legal, and institutional frameworks for international decision-making on forests.

➡ **Key Stakeholders:**

**Institutions:** UN Forum on Forests (UNFF), a functional commission of the UN Economic and Social Council (ECOSOC) with universal membership.

**Collaborative Partnership:** The Collaborative Partnership on Forests (CPF) supports the work of the UNFF.

➡ **International Conventions:**

Convention on Biological Diversity (CBD)

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

➡ **Regional Agreements:** Amazon Cooperation Treaty





● **Key Institutions and Agreements in IFG**

<b>Institution/Agreement</b>	<b>Description</b>	<b>Institution/Agreement</b>
<b>UN Forum on Forests (UNFF)</b>	<i>A functional commission of the UN Economic and Social Council (ECOSOC) with universal membership.</i>	<i>UN Forum on Forests (UNFF)</i>
<b>Collaborative Partnership on Forests (CPF)</b>	<i>Formed to support the work of the UNFF.</i>	<i>Collaborative Partnership on Forests (CPF)</i>
<b>Convention on Biological Diversity (CBD)</b>	<i>International convention focused on biodiversity.</i>	<i>Convention on Biological Diversity (CBD)</i>
<b>Convention on International Trade in Endangered Species (CITES)</b>	<i>Regulates international trade in endangered species.</i>	<i>Convention on International Trade in Endangered Species (CITES)</i>
<b>Amazon Cooperation Treaty</b>	<i>Regional agreement focusing on the Amazon region.</i>	<i>Amazon Cooperation Treaty</i>

By addressing these challenges and implementing the recommended approaches, international forest governance can be improved, leading to better outcomes for forest sustainability and climate resilience.






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