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Current Affairs - 09 November 2025

INDIA'S EMERGING FRAMEWORK FOR AI REGULATION

The Ministry of Electronics and Information Technology (MeitY) released the India AI Governance Guidelines recently, detailing how Artificial Intelligence will be regulated and promoted in the country. The document outlines India's framework for responsible AI use across sectors.

Purpose of the AI Governance Guidelines

- The new **AI Governance Guidelines** aim to create a **clear and consistent framework** for regulating Artificial Intelligence in India, now the **second-largest user** of tools like ChatGPT after the U.S.
- Their goal is to **use AI for inclusive growth and global competitiveness** while managing risks to individuals and society.
- The document aligns India with international efforts that focus on identifying AI risks, defining accountability, and promoting safety research.
- The guidelines were finalised by a **MeitY committee led by Prof. Balaraman Ravindran** of IIT Madras' **Centre for Responsible AI (CeRAI)**, following earlier drafts by a government advisory group.

Key Recommendations of India's AI Governance Guidelines

- **Guiding Principles** - The guidelines are based on values like **people-centricity, fairness, accountability, and transparency** in AI systems. They aim to ensure AI serves citizens safely and responsibly.
- **Coordination Across Government Bodies** - A new AI Governance Group is proposed to connect ministries, regulators, and standard-setting agencies. This group will regularly review laws, suggest reforms, issue standards, and promote access to AI safety tools.
- **Role of Sectoral Regulators** - The framework recommends active participation from agencies such as the RBI (for finance), NITI Aayog, and the Bureau of Indian Standards to align industry-specific AI practices with national policy.



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- **Infrastructure and Accessibility** - Unlike many global frameworks, India's plan stresses AI infrastructure development — urging states to expand data access, computing resources, and promote AI adoption.
- **Focus on Indian Context** - The guidelines call for: **Legal updates** on copyright and AI-generated content; **Building AI models for Indian languages** using locally relevant datasets to ensure cultural inclusiveness and diversity in AI applications.
- **Private Sector Responsibilities**
 - Companies are advised to:
 - Follow Indian laws and voluntary AI frameworks.
 - Publish transparency reports.
 - Provide grievance redress systems.
 - Use techno-legal solutions to manage AI-related risks.
 - The AI Safety Institute (AISI), under the IndiaAI Mission, will guide safety and compliance efforts.

Alignment of AI Guidelines with Government Plans

- The government continues to take a light-touch approach to regulating AI, except in the case of deepfakes.
 - The guidelines stress “**content authentication**”, and MeitY has proposed rules requiring social media platforms to label AI-generated images and videos.
 - Several recommendations align with existing government efforts:
 - The IndiaAI Mission is already buying GPUs to create a shared computing facility for startups and researchers.
 - The plan to integrate AI with Digital Public Infrastructure (DPI), like Aadhaar, is underway — with UIDAI forming a committee to explore AI-based improvements.
 - While the framework guides AI governance, the government will act swiftly if urgent regulation is needed, even by enacting a stricter law.
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NATIONAL SOCIAL ASSISTANCE PROGRAMME



- It was **introduced in 1995** as a fully funded **Centrally Sponsored Scheme** that extends financial support to individuals living **below poverty line (BPL)**.
- **Nodal Ministry:** It is implemented by the **Ministry of Rural Development**.
- It comprises **five sub-schemes as its components**
 - **Indira Gandhi National Old Age Pension Scheme**
 - It extends financial assistance to **elderly citizens aged 60 years** and above who belong to families living below the poverty line by the Government of India.
 - Under this scheme, individuals between **60 and 79 years** of age receive **Rs.200 per month from the Central Government**, while those aged **80 years and above** are provided **500 per month**.
 - **Indira Gandhi National Widow Pension Scheme**
 - Under this scheme, financial assistance is extended to **widows aged between 40 and 79 years** who belong to families living **below the poverty line**, as identified by the Government of India.
 - Each eligible beneficiary in this age group receives **Rs.300 per month** as central assistance. For widows who are **80 years and above**, the amount of central assistance is **Rs.500 per**
 - **Indira Gandhi National Disability Pension Scheme**
 - It caters individuals aged between **18 and 79 years** who have severe or multiple disabilities and belong to families living below the poverty line.
 - The beneficiaries are eligible for central assistance of **Rs.300 per month**. Beneficiaries who are **80 years and above** receive **500 per month**.
 - **National Family Benefit Scheme**



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- Under this scheme, a household living **below the poverty line** becomes eligible for **lump sum financial assistance** in the unfortunate event of the death of its **primary breadwinner**, provided the deceased was **between 18 and 59 years of age**.
- The family receives **20,000 as support** to help them cope with the immediate financial difficulties arising from the loss.
- **Annapurna Scheme**: Under the scheme, **10kg of food grains per month** are provided free of cost to **those senior citizens** who, though eligible **under Indira Gandhi National Old Age Pension Scheme (IGNOAPS)**, are not receiving old age pension.

SCINTILLOMETER



- It is an **optical instrument** that **measures heat and moisture exchange** between the **land surface** and the
- **Working of Scintillometer**
 - It operates by **transmitting a light beam** between two fixed points.
 - Minute, rapid fluctuations in the beam caused by turbulent air **known as scintillations** are analysed to estimate **heat transfer from the land to the atmosphere**.
- It was installed recently in an existing suite of sensors **at the TRRI Critical Zone Observatory (CZO)**.

Key Facts about Critical Zone Observatory of Tamil Nadu Rice Research Institute

- It was established under **Tamil Nadu Agricultural University (TNAU)** with support from the **National Centre for Earth Science Studies (NCESS)**, became **fully operational in 2022**.
- It is **one of three such observatories** in India and the only one in Tamil Nadu.



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- **Main Instruments at about Critical Zone Observatory Site:** Automatic Weather Station, COSMOS soil-moisture sensor, pan evaporimeter and eddy-covariance tower.
 - **Functions:**
 - The site records **weather parameters, soil moisture and direct air–surface fluxes**; the scintillometer now provides direct estimates of **sensible heat flux**.
 - These observations improve **estimates of evapotranspiration**, soil moisture and local microclimate, directly supporting irrigation planning and local forecasts.
 - The observatory will generate long-term datasets on **meteorological, canopy and hydrological parameters** for the **Cauvery delta**.
 - **Advantages:** These are crucial for managing water and crops in this climate-sensitive agricultural region.
 - It would strengthen **climate-resilient decision-making** in the Cauvery delta.
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VOLCANIC LIGHTNING



- It is a mysterious and powerful phenomenon that **occurs during volcanic eruptions** rather than thunderstorms.
- It is in the form of a **powerful barrage of lightning** which occurs at the **early stages of a volcanic eruption**.
- **Cause:** The main cause is the **collision between ash particles** within the **volcanic plume**.
 - The collision and rubbing of these particles together lead to the generation of static electricity, which, in turn, builds up charges and creates **flashes of lightning**.
- This type of lightning can be **found in two places:**
 - At the dense ash clouds located **closer to the ground**.
 - **Higher up** in the eruption plume where **ice particles form** (from water vapourised from the magma) and collide, building electric charges and creating lightning visible strikes at higher levels.



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- The water content found in volcanic plumes is higher than that in thunderstorms.

Historical Records of Volcanic Lightning

- The earliest was made by **Pliny the Younger** who described it during **Mount Vesuvius** eruption in Italy in **79 AD**.
- Italian **physicist Luigi Palmieri** also recorded this phenomenon between 1858 and 1872.

BIMSTEC-INDIA MARINE RESEARCH NETWORK CONFERENCE



- It is a **biennial regional platform** for facilitating collaboration among the researchers in the **Bay of Bengal Region**, sustainable development of blue economy by networking the researchers in the **BIMSTEC Member Countries**.

Background: It was first announced by the Prime Minister of India during the Colombo BIMSTEC Summit in 2022.

- It was **launched in 2024** by the Ministry of External Affairs, Government of India.

Key Features of BIMSTEC-India Marine Research Network Conference

- It has connected 25 institutions and over 50 researchers from BIMSTEC countries.
- It aligns with India's broader regional policy objectives under its **Neighbourhood First, Act East, Indo-Pacific and MAHASAGAR**
- It served as a milestone in **advancing regional cooperation** in marine research and sustainable blue economy initiatives.
- It focused on **marine challenges, ecosystem health**, and research innovations, including building scientific networks among young researchers, effective marine resource management and harmonious policy development.



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INDIA JOINS GLOBAL TROPICAL FOREST FUND AS OBSERVER AHEAD OF COP30

- India has joined the Brazil-led Tropical Forest Forever Facility (TFFF) as an observer ahead of COP30, reaffirming its commitment to equitable climate action and forest conservation.
- The TFFF is a new global initiative designed to **reward countries financially for preserving tropical forests**, a vital component in global efforts to mitigate climate change.
 - The fund provides **\$4 per hectare of protected forest area annually**, creating a performance-based incentive model for conservation.
 - It is structured as a **budget-neutral financing mechanism**, meaning that it does not rely on new taxes or continuous donor grants.
 - The mechanism operates through the **Tropical Forest Investment Fund (TFIF)**, which channels sponsor contributions into **sustainable investments**, avoiding sectors linked to deforestation such as fossil fuels, coal, and peat industries.
 - Returns generated by TFIF investments are used to **repay investors** while simultaneously rewarding participating countries for forest protection.
- The initiative represents a **market-based approach** to climate finance, combining conservation incentives with investment-driven sustainability.

India's Role and Climate Commitments

- India's participation in the TFFF as an **observer** underscores its proactive engagement in global climate governance.
- In its national statement at the COP30 Summit, India reaffirmed that its climate actions are guided by the principles of **Equity and Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC)** under the **UNFCCC and Paris Agreement**



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Key highlights of India's climate achievements include:

- **36% reduction in emission intensity of GDP (2005-2020)** - surpassing earlier targets ahead of schedule.
- **Over 50% non-fossil fuel-based installed power capacity**, fulfilling India's revised 2030 Nationally Determined Contribution (NDC) five years early.
- **Expansion of forest and tree cover** resulted in an **additional carbon sink of 2.29 billion tonnes of CO₂ equivalent** between 2005 and 2021.
- Becoming the **world's third-largest renewable energy producer**, with nearly **200 GW of installed renewable capacity**.
- India's flagship initiatives like the **International Solar Alliance (ISA)**, bringing together over 120 countries, and the **Coalition for Disaster Resilient Infrastructure (CDRI)** reflect its leadership in global climate cooperation, particularly among developing nations.

Significance of India's Observer Role

- By joining the TFFF as an **observer**, India gains a strategic position in shaping the framework's implementation while sharing its experience in **forest conservation and green growth**.
 - The observer status enables India to:
 - Participate in **policy discussions** on financing mechanisms for forest conservation.
 - Share best practices from its successful **afforestation and clean energy programmes**.
 - Influence the design of **equitable financing models** that reflect the needs of the Global South.
 - The move also complements India's ongoing efforts to enhance its **carbon sink capacity**, promote **community-led forest management**, and strengthen **climate-resilient ecosystems**.
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WHAT ARE PIPRAHWA RELICS?



- The Piprahwa Relics are a collection of **sacred artifacts discovered in 1898 at the Piprahwa Stupa in Uttar Pradesh,**
- It is the **site** believed to be **associated with ancient Kapilavastu, the homeland of Gautama Buddha.**
- These **relics** are of immense archaeological and religious importance, as they are believed to be **associated with Lord Buddha himself.**
- These relics, **unearthed by British colonial engineer William Claxton Peppé in 1898, include bone fragments believed to be those of Lord Buddha, along with crystal caskets, gold ornaments, gemstones, and a sandstone coffer.**
- An **inscription in Brahmi script on one of the caskets links the relics directly to the Sakya clan, to which Buddha belonged,** indicating that these remains were enshrined by his followers around the third century BC.
- The **British crown claimed Peppé's find** under the 1878 Indian Treasure Trove Act, with the **bones and ash presented to the Buddhist monarch King Chulalongkorn of Siam. Most of the 1,800 gems went to what is now the Indian Museum in Kolkata, while Peppé was permitted to retain approximately a fifth of them.**
- Piprahwa Relics are **classified as 'AA' antiquities under Indian law, prohibiting their removal or sale.**
- **Further excavations by the Archaeological Survey of India between 1971 and 1977 uncovered additional steatite caskets containing 22 sacred bone relics, which are now preserved at the National Museum in New Delhi.**
- A **part of the Piprahwa Relics was passed down for generations in the Peppé family.**
 - These were **put up for auction** in Hong Kong in May 2025.
 - However, it was **successfully repatriated back to India through a public-private collaboration between the Government and the Godrej Industries Group.**