

# NEWS TODAY

## NASA launches satellite to detect water on the moon

A SpaceX Falcon 9 rocket launched **NASA's Lunar Trailblazer orbiter** as a **secondary payload**. The primary payload was Intuitive Machines' lunar lander mission (IM-2).

➤ **IM-2's Objective:** To settle on to the moon where it will drill beneath the surface in a bid to find water there.

### About Lunar Trailblazer Mission

- **Objective:** It will orbit at an altitude of roughly 100 km and collect **high-resolution images of targeted areas** to determine:
  - ⊕ The **form, distribution and abundance** of water and to **better understand the lunar water cycle**.
- **Significance:** Guide future human missions to **locate and extract water resources**.
- **Components:** Two Lunar Trailblazer instruments will take measurements from lunar Orbit:
  - ⊕ **Lunar Thermal Mapper (LTM):** will map and measure the lunar surface temperature.
  - ⊕ **High-resolution Volatiles and Minerals Moon Mapper (HVM3):** It will search for light patterns indicating water on Moon.

### Importance of Lunar Water

- **Drinking Supply:** Processed into drinkable water
- **Breathable Oxygen:** Converted into oxygen for breathing
- **Rocket Fuel:** Hydrogen fuel for rockets.
- **Exploration of the Solar System:** Lunar water enables deeper space exploration, including Mars.

### Timeline of Lunar Water Discoveries

- ⊙ **2009-Chandrayaan-1**  
ISRO's Chandrayaan-1 with its Moon Mineralogy Mapper (M3) detected signs of hydrated minerals (OH/H<sub>2</sub>O) in sunlit areas.
- ⊙ **2009-Cassini & Deep Impact**  
NASA's missions corroborated Chandrayaan-1's findings of hydration on the lunar surface.
- ⊙ **2009-2018-LRO Observations**  
Lunar Reconnaissance Orbiter provided continuous data on lunar water ice in cold traps at the poles.
- ⊙ **2018-Chandrayaan-1 Data Reanalysis**  
Analysis of M3 data created high-resolution maps confirming definitive evidence of water ice in permanently shadowed regions.
- ⊙ **2020 - SOFIA Discovery**  
NASA's Stratospheric Observatory for Infrared Astronomy detected water molecules (H<sub>2</sub>O) on sunlit surfaces in Clavius crater.
- ⊙ **2023-First Detailed Water Map**  
Detailed map of water distribution across the lunar South Pole released based on SOFIA data.
- ⊙ **2023-Chandrayaan-3**  
ISRO's Chandrayaan-3 successfully landed near the lunar South Pole to study the region with potential water ice deposits.

## Union Cabinet approves the Revised Waqf (Amendment) Bill, 2024

In revised bill suggestions of **Joint Parliamentary Committee (JPC)** have been incorporated as per reports.

➤ Earlier, amendments were made in **2013** based on the recommendations of the High-Level Committee under the chairmanship of Justice (Retired) **Rajinder Sachar** and the Report of the JPC.

### About Waqf (Amendment) Bill, 2024

- **Objective:** To amend the **Waqf Act, 1995**, to improve regulation of **Waqf properties**.
- **Key Provisions:**
  - ⊕ **Inclusive composition of Waqf Management:** Involvement of **Muslim women and Muslim OBC** in Management (Central Waqf Council and State Waqf Boards).
    - ◆ **Central Waqf Council:** **Statutory body** established in **1964**, to **oversee and advise state-level Waqf Boards** across India. It does **not exercise direct control** over waqf property itself.
    - ◆ **State Waqf Board:** It has **superintendence** over maintenance and administration of **Waqf properties**.
  - ⊕ **Appeal on orders of Tribunals:** Tribunal's orders may be **appealed** in the **High Court** within **90 days**.
  - ⊕ **Others:** Using technology to improve **registration**, Separate Waqf Boards for the **Aghakhani** and **Bohra** communities, etc.

### Why there is need of Amendment?

 <p>Principle of "<b>once a waqf, always a waqf</b>" has led to various disputes and claims.</p>	 <p>There is no <b>judicial oversight</b> on <b>tribunal decisions</b>.</p>	 <p>Unsatisfactory <b>Survey Work</b> of <b>Waqf Properties</b> by the <b>Survey Commissioner</b>.</p>
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### What is 'Waqf'?

- Refers to **properties dedicated exclusively for religious or charitable purposes** under **Islamic law**, and any **other use or sale** of the property is **prohibited**.
- Waqf properties are **bestowed upon Allah** and are **managed and administered by an appointed 'mutawalli'**.
- **Waqf Boards** currently control **8.7 lakh properties** spanning **9.4 lakh acres** across India. India has the **largest waqf holding in the World**.

## Madhya Pradesh Chief Minister released 10 gharials in River Chambal to bolster the population

This initiative reinforces the state's leadership in gharial conservation, as MP hosts over 80% of India's gharial population.

### About Gharials (*Gavialis gangeticus*)

- Gharials are endemic (native to Indian subcontinent) long-snouted crocodiles.
- Name comes from 'ghara' (pot) due to the bulbous growth on the snouts. Only mature males have this bulb.
- Conservation status: - IUCN: Critically Endangered; Wildlife (Protection) Act, 1972: Schedule I; CITES: Appendix I.
- Habitat: Freshwater rivers with sandy banks.
- Historical Range: Indus, Ganga, Brahmaputra, and Mahanadi-Brahmani-Baitrani River systems across India, Bhutan, Bangladesh, Nepal, and Pakistan.
- Current Range: Primarily Chambal, Girwa (India), and Rapti-Naryani (Nepal) rivers and smaller populations in Ken, Yamuna, Brahmaputra, Ghaghara, and Bhagirathi-Hoogly rivers.

### Threats:

- Habitat destruction due to agricultural and industrial expansion, along with plastic pollution.
- Entanglement and drowning in fishing equipment.
- Egg predation, illegal poaching for skin and meat, and use of body parts in medicine.

### Conservation Efforts:

- Captive Breeding & Reintroduction: Breeding centres including the Deori Gharial Breeding Center (MP), Kukrail Rehabilitation Centre (Lucknow). Gandak River in Bihar is a successful breeding site for gharials.
- National Chambal Sanctuary: Largest gharial habitat.
- Project Crocodile was started in 1975.

## Other Crocodylian Species in India



### Saltwater Crocodile (*Crocodylus porosus*)

- IUCN Status: Least Concern
- Habitat: Sundarbans, Bhitarkanika Wildlife Sanctuary (Odisha), and the Andaman & Nicobar Islands.



### Mugger Crocodile (*Crocodylus palustris*)

- IUCN Status: Vulnerable
- Habitat: Rivers, lakes, and marshes across 15 states in India (Significant populations occur in middle Ganga, Chambal River and in Gujarat.)

## First detailed Geological Mapping of Moon's South Pole Area made from Chandrayaan Data

Researchers from ISRO (among others) created the first detailed lunar map using data from the Pragyan rover, which was deployed by Vikram (lander of India's Chandrayaan-3) on its nine-day mission.

- South Pole-Aitken Basin: Vikram landed near this ancient, massive impact crater (one of the largest in the Solar System).

### Key Findings from Chandrayaan-3's Lunar South Pole Exploration

- Terrain Types: Undulating landscape of highlands and low, flat plains.
- Confirmation of Subsurface Magma Ocean: Findings confirms ancient ocean of molten lava that extends across the entire moon.
- Age of the Lunar South Polar region: Calculated to be around 3.7 billion years, around the time the first signs of microbial life emerged on the earth.
- A Common Origin with Earth: The Moon's geochemical similarities with Earth supports the theory that both bodies originated from the same molten material.
  - ⊕ Possibly due to a massive collision between Earth and a Mars-sized body about 4.5 billion years ago.

### Significance of Lunar Craters

- The Moon's craters have been preserved for billions of years due to no atmospheric erosion.
- They offer vital insights into the solar system's early history and help date geological features on other planets.
- Lunar craters act as time capsules, preserving records of space-rock impacts shaping the entire solar system.

## CHANDRAYAAN-3 MISSION

### MISSION OVERVIEW

A follow-on mission to Chandrayaan-2 to demonstrate end-to-end capability in safe landing and roving on the lunar surface

### COMPONENTS



Vikram Lander



Pragyan Rover

Launched by LVM3

### MISSION OBJECTIVES



Demonstrate Safe and Soft Landing



Demonstrate Rover roving on the moon



Conduct in-situ scientific experiments

Mission Life: One lunar day (~14 Earth days)

First mission to land in a high-latitude polar region of the moon  
630 km from the south pole of the moon

## Tamil Nadu opposes three-language policy in schools under the NEP 2020

The Centre has withheld funds for the **Samagra Shiksha scheme** in Tamil Nadu due to the state's refusal to implement the **three-language policy** in accordance with the **New Education Policy (NEP) of 2020**.

- ▶ Tamil Nadu currently follows 2 language policy (Tamil and English).

### About Three-language Policy

- ▶ **Objective:** To promote **multilingualism** and **strengthen national unity**.
- ▶ It mandates that **students shall learn three languages:**
  - ⊕ Two must be native to India.
  - ⊕ The choice of languages is left to states and students.
- ▶ **Evolution of Policy**
  - ⊕ **University Education Commission of 1948-49, chaired by Dr Sarvepalli Radhakrishnan:** Recommendations of commission led to evolution of **three-language formula** for school education.
  - ⊕ **Kothari Commission (1964-66):** Formally proposed the three-language formula.
  - ⊕ **Inclusion in Education Policies**
    - ◆ It was incorporated in **NEP 1968**.
    - ◆ **NEP 1986 & 1992** retained the three-language formula.
    - ◆ **NEP 2020** also retained the three-language formula with more flexibility.
      - » **No explicit mention of Hindi** instead two regional languages.

### Concerns related to Three-language Policy

 Perceived fear of imposition of <b>Hindu Language</b>	 <b>Increased Academic Burden</b> (Learning extra language adds pressure)	 States have their own language policies	 Financial and Resource Constraints
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## Ministry of Ports, Shipping and Waterways launched a series of initiatives to modernise India's maritime infrastructure

### Key initiatives are:

- ▶ **One Nation-One Port Process (ONOP):** It will standardise and streamline operations across India's major ports.
- ▶ **Sagar Ankalan:** Under it, the **Logistics Port Performance Index (LPPI)** for FY 2023-24 evaluates all major and non-major ports under Bulk (Dry & Liquid) and Container categories.
  - ⊕ Key performance indicators include **cargo handling, turnaround time, berth idle time, container dwell time, and ship berth-day output**.
  - ⊕ It is aligned with the **PM Gati Shakti National Master Plan** and the **National Logistics Policy, 2022**.
- ▶ **Bharat Global Ports Consortium:** It will **streamline logistics, strengthen supply chains**, and support the 'Make in India' initiative by boosting exports by developing robust port infrastructure.
  - ⊕ It will bring together different stake holder such as **India Ports Global Private Limited (IPGPL), Sagarmala Development Company Limited (SDCL)** etc.
- ▶ **MAITRI logo (Master Application for International Trade and Regulatory Interface):** It will streamline trade processes, reduce bureaucratic redundancies and expedite clearances, reinforcing India's commitment to ease of doing business.
  - ⊕ **MAITRI plays** a crucial role in operationalising the **Virtual Trade Corridor (VTC)** between India and the UAE.
  - ⊕ It is aligned with the **India-Middle East-Europe Economic Corridor (IMEEC)** and is expected to expand to **BIMSTEC and ASEAN nations**, leveraging **AI and Blockchain** for efficiency and security.



### Also In News



**Ocelot**

Amazon launched a quantum computing chip named Ocelot.

#### About Ocelot

- ▶ It is a **prototype** that has only a tiny fraction of the computing power needed to create a useful machine.
- ▶ **Key features:**
  - ⊕ It consists of **two integrated silicon** microchips.
  - ⊕ Its high-quality oscillators are made from a thin film of superconducting material called Tantalum
- ▶ It uses **cat qubits**, named after the famous **Schrödinger's cat thought experiment**.
  - ⊕ **Schrödinger's cat** is a thought experiment where a cat inside a sealed box is both **alive and dead simultaneously** (superposition) until someone observes it.
- ▶ **Key Benefit:** It can reduce the costs of implementing quantum error correction by **up to 90%**, compared to current approaches.



**Olive Ridley Turtle**

A Study shows **Olive Ridley numbers are growing**, but rising sand temperatures are skewing gender ratios.

#### About Olive Ridelys

- ▶ **Among the smallest and most abundant** sea turtle species globally.
- ▶ **Arribada phenomenon** (Spanish for "arrival"): A **mass synchronized nesting event** unique to Olive Ridelys.
- ▶ **Habitat:** warm tropical waters of the **Pacific, Atlantic, and Indian Oceans**.
  - ⊕ **Major Nesting Sites in India:** Gahirmatha, Rushikulya, and Devi River (Odissa).
- ▶ **Conservation Status**
  - ⊕ **IUCN Status:** Vulnerable
  - ⊕ **CITES:** Appendix I
  - ⊕ **Wildlife Protection Act, 1972:** Schedule I
- ▶ **Protection Efforts:** **Turtle Excluder Devices (TEDs)** and **Operation Olivia** by the Indian Coast Guard.



### Stratovolcano

In a rare event, massive methane plumes emitted from volcano Mount Fentale (Ethiopia).

➤ Mount Fentale is a stratovolcano which last erupted in 1820.

#### About Stratovolcano

➤ A stratovolcano is a large, steep-sided volcano built up by alternating layers of lava flows and volcanic ash, often associated with explosive eruptions.

➤ E.g., Mount Fuji (Japan), Mount Vesuvius (Italy), Mount Etna (Italy), Mount Rainier (USA), Krakatoa (Indonesia), etc.

#### About Methane Plumes

➤ It's the release of large quantities of methane from super-emitter sites like gas drilling sites.

➤ Methane is a potent greenhouse gas, with 80 times the Global Warming Potential (GWP) of carbon dioxide over a 20-year period.



### Cali Fund

Cali Fund was launched at the COP16 to the United Nations Convention on Biological Diversity (CBD).

#### About Cali Fund

➤ Aim: To boost biodiversity finance for the Fair and Equitable Sharing of Benefits from the use of Digital Sequence Information on Genetic Resources (DSI).

⊕ DSI is the data from DNA or RNA that can be stored digitally.

➤ Hosted by: Multi-Partner Trust Fund Office (MPTFO) in a partnership between UNDP, UNEP, CBD Secretariat.

➤ Funding: It will receive contributions from private sector entities making commercial use of DSI.

➤ Aid implementation of the Kunming- Montreal Global Biodiversity Framework (KMGBF).

⊕ Support delivery of National Biodiversity Strategies and Action Plans (NBSAPs) by developing countries.

⊕ 50% of the resources to be allocated for self-identified needs of indigenous peoples and local communities, including women and youth.



### Petrification

A first-of-its-kind discovery of a petrified wood fossil has been made at Rajmahal hills in Pakur, Jharkhand.

#### About Petrification (or Petrification)

➤ It is a process of permineralization when the organic matter is completely replaced by minerals and the fossil is turned to stone.

⊕ Permineralization is a type of fossil where pores of the plant materials, bones, and shells are impregnated by mineral matter from the ground, lakes, or ocean.

➤ It reproduces the original tissue in every detail.

➤ This kind of fossilization occurs in both hard and soft tissues.



### Hague Service Convention

The U.S. SEC has requested assistance from the Indian government under the Hague Service Convention to serve summons in a securities and wire fraud case.

#### About Hague Service Convention

➤ Genesis: 1965.

➤ Nature: It is an international treaty that streamlines the process of serving legal documents across international borders.

➤ Signatories: 84 countries.

⊕ India joined in 2006 with reservations.

⊕ It prohibits the service of judicial documents through diplomatic or consular channels, except when the recipient is a national of the requesting country.

➤ Central authority to handle service requests: The Ministry of Law and Justice.



### Aadhaar Good Governance Portal

Ministry of Electronics and Information Technology (MeitY) launched the Aadhaar Good Governance portal.

#### About Aadhaar Good Governance Portal

➤ Objective: Streamline approval process for Aadhaar authentication requests.

⊕ This is in sync with an effort to make Aadhaar more people-friendly.

⊕ It will help in integrating Face Authentication in the customer facing apps of private entities, which will enable anytime anywhere, authentication.

➤ This platform comes into effect after Aadhaar Authentication for Good Governance (Social Welfare, Innovation, Knowledge) Amendment Rules, 2025.

⊕ It enabled both government and non-government entities to avail Aadhaar authentication service.



### Naval Anti-Ship Missile-Short Range (NASM-SR)

DRDO and Indian Navy successfully flight-tested the first-of-its-kind Naval Anti-Ship missile (NASM-SR) from Integrated Test Range (ITR), Chandipur.

#### Key Features of NASM-SR

➤ Indigenous Imaging Infra-Red (IIR) Seeker: It facilitates high-precision strikes.

➤ Man-in-Loop Control: Allows real-time targeting adjustments.

➤ Propulsion System: It uses a solid propulsion system with an in-line ejectable booster and long-burn sustainer for extended range and efficiency.

➤ Other: Incorporates advanced indigenous technologies, including a Fiber Optic Gyroscope-based Inertial Navigation System (INS), etc.

➤ Significance: Strengthens naval strike capability, promotes indigenous defense production, and enhances operational flexibility.

## Personality in News



### Shri Nanaji Deshmukh (1916 – 2010)

Union Home Minister addressed the Remembrance Day ceremony on the 15<sup>th</sup> death anniversary of Bharat Ratna Nanaji Deshmukh.

#### Shri Nanaji Deshmukh (1916 – 2010)

➤ Nanaji Deshmukh was born in the Hingoli district of Maharashtra.

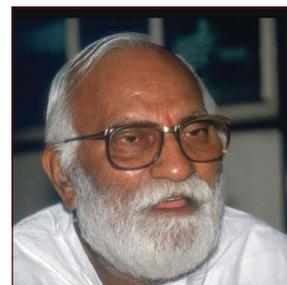
➤ Nanaji founded Deendayal Research Institute (DRI) in 1972 to validate the philosophy of Integral Humanism propounded by Pandit Deendayal Upadhyaya.

#### Key Contributions

➤ He was the initiator of the sampooran kranti (total revolution) a call of Loknayak Jayaprakash Narayan and waged a crusade against the Emergency in 1975.

➤ He actively participated in Bhoodan Movement started by Acharya Vinoba Bhave.

➤ He established Chitrakoot Gramodya Vishwavidyalaya (India's first rural university) in Chitrakoot and went on to become its first Chancellor.



AHMEDABAD



BENGALURU



BHOPAL



CHANDIGARH



DELHI



GUWAHATI



HYDERABAD



JAIPUR



JODHPUR



LUCKNOW



PRAYAGRAJ



PUNE



RANCHI