



DAILY CURRENT AFFAIRS 04-11-2025

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India and the New Nuclear Order

Syllabus: GS-2: International Relations – Nuclear Regime.

Context:

- U.S. President Donald Trump's remarks on **resuming nuclear testing** have reignited the **global arms control debate**.
- This has prompted calls for **India to revisit its voluntary moratorium on nuclear tests**, given the changing global nuclear landscape.

The Shifting Global Nuclear Order

- The **post-Cold War consensus on nuclear restraint** is **eroding** as major powers modernise their arsenals.
- **Russia**: Withdrawn from key **arms-control treaties** and revived **test-site activity** in the Arctic.
- **China**: Rapidly **expanding its stockpile**, constructing **missile silos**, and enhancing **testing infrastructure** at Lop Nur.
- **United States**: Expressed **doubts about simulation-based reliability**; may reconsider its **moratorium on testing**.
- The **CTBT** remains **unratified** by major powers → undermines the **global non-testing regime** and **erodes trust** in arms control.

India's Nuclear Testing History and Legacy

Year	Event	Significance
1974	Pokhran-I ("Smiling Buddha")	India's first test, marking entry into the nuclear club for "peaceful purposes."
1998	Pokhran-II (Operation Shakti)	Validated multiple fission and fusion devices ; established India as a de facto nuclear weapon state .

- **Post-1998 Developments:**
 - Declared **voluntary moratorium on testing**.
 - Adopted **No First Use (NFU)** and **Credible Minimum Deterrence (CMD)** doctrines.
 - Led to **international legitimacy** and **civil nuclear cooperation** (e.g., **Indo-US Nuclear Deal 2008**).



Factors Driving the Debate on Renewed Testing

- **Eroding Global Restraint** – Major powers' re-testing efforts weaken India's self-imposed restraint.
- **Technological Obsolescence** – Last validation in 1998; new **delivery systems** and **warhead materials** need revalidation.
- **Regional Security Pressures** –
 - **China's nuclear modernisation** and
 - **Pakistan's tactical nuclear diversification** demand credible deterrence.
- **Uncertain Simulation Reliability** – Computer models cannot fully replace empirical test data.
- **Strategic Signalling** – A test could reaffirm **India's technological credibility** amid global strategic flux.

Challenges and Risks of Renewed Nuclear Testing

Dimension	Challenge
Diplomatic Fallout	Global condemnation, sanctions , and loss of soft power capital .
Moral Standing	Undermines India's image as a responsible nuclear power .
Economic Impact	Potential trade restrictions and technology denial regimes.
Environmental Risks	Even underground tests cause radiation leakage and ecological damage .
Regional Instability	Could trigger arms race with China and Pakistan.

India's Strategic Concerns

- **Credible Minimum Deterrence (CMD)** relies on **confidence in weapon reliability**.

- India's evolving arsenal — **Agni-V, SLBMs**, and future **MIRV** systems — requires tested **miniaturised and high-yield warheads**.
- Lack of **periodic validation** may erode deterrence credibility and **weaken India's strategic posture** in South Asia.
- India must balance **strategic restraint** with **technological readiness** to preserve **autonomy and deterrence integrity**.

Way Forward

- **Strategic Review**
 - Constitute a **National Commission on Nuclear Deterrence** to assess the reliability of India's arsenal under evolving threats.
- **Advanced Simulation & Subcritical Testing**
 - Strengthen **computational modelling, materials science**, and **non-explosive testing** to ensure design integrity without violating moratorium.
- **Diplomatic Preparedness**
 - Maintain **transparency, communication channels**, and **strategic dialogue** to pre-empt isolation in case of testing necessity.
- **Regional Stability Measures**
 - Pursue **confidence-building mechanisms (CBMs)** with China and Pakistan to prevent misperception-driven escalation.
- **Ethical Consistency**
 - Align any future steps with India's **NFU** and **CMD** principles — testing should serve **validation**, not **provocation**.

Conclusion

- India's **restraint since 1998** demonstrated **maturity and responsibility**, earning it **global recognition**.
- Yet, **unquestioned restraint** risks **strategic stagnation** amid a shifting nuclear order.
- The **true test of strategic autonomy** lies in **adapting responsibly** — balancing **ethical restraint** with **scientific preparedness** to ensure **credible deterrence** and **national security**.

Employee's Enrolment Scheme 2025

Syllabus: GS-3: Indian Economy – Employment and Unemployment.

Context

The **Ministry of Labour and Employment** has launched the **Employee's Enrolment Scheme 2025** to expand the coverage of the **Employees' Provident Fund (EPF)** and promote **voluntary compliance** among employers.

About the Scheme

What it is

- A **special one-time compliance window** introduced under the **Employees' Provident Fund Organisation (EPFO)**.
- Allows employers to **voluntarily enrol eligible employees** who were **not covered** under the EPF between **1 July 2017 and 31 October 2025**.
- Implemented by **EPFO**, under the **Ministry of Labour and Employment**.



Aims and Objectives

- **Extend social security** coverage to all eligible employees under the **EPF Act, 1952**.
- **Encourage voluntary compliance** by employers and strengthen **trust between businesses and regulators**.
- **Promote formalisation** of the workforce and ensure **financial protection** for previously unregistered workers.

- Support the government's goal of **universal social protection** under initiatives like **Social Security Code, 2020**.

Key Features

- **Operational Period:** Six months — from **1 November 2025 to 30 April 2026**.
- **Coverage:**
 - Applies to workers employed between **July 2017 – October 2025** who were left out of EPF coverage.
 - **Employers can voluntarily declare** and enrol such employees.
- **Financial Terms:**
 - **Waiver** of the **employee's contribution** if not deducted earlier.
 - **Employer's share** of contribution and a **nominal ₹100 penalty** must be paid for compliance.
- **Legal Provisions:**
 - Applicable even to establishments **under inquiry** under **Section 7A** or **Paragraph 26B** of the EPF Act.
 - Once compliance is made, **EPFO will not take suo motu action** for past omissions.

Significance

For Workers

- Brings **previously uncovered employees** under formal **social security**.
- Ensures **retirement savings, insurance, and pension benefits** through the EPF system.

For Employers

- Provides a **compliance amnesty** with minimal penalty.
- **Reduces litigation** and improves **ease of doing business**.
- Builds **trust-based regulation** between EPFO and enterprises.

For the Economy

- Encourages **labour formalisation**, expanding the **organised sector workforce**.
- Supports **inclusive growth** and **financial security** of workers.
- Aligns with **Vision India@2047** goals of **universal social security**.

Challenges / Way Forward

- **Awareness generation** among small and medium enterprises (SMEs) needed.
- **Monitoring compliance** to prevent misuse of the voluntary window.
- Need for **digital facilitation** and **grievance redressal mechanisms** for smooth implementation.

Conclusion

The **Employee's Enrolment Scheme 2025** represents a **progressive step** towards **universal social protection** and **labour formalisation** in India. By incentivising voluntary compliance, it not only strengthens the **EPFO ecosystem** but also bridges the gap between **informal and formal employment**, reinforcing India's commitment to **social justice and inclusive growth**.

Sinapic Acid

Syllabus: GS-3; Science & Technology

Context

- Researchers at **Nagaland University** have identified a naturally occurring plant compound called **Sinapic acid** that shows strong potential in **accelerating wound healing under diabetic conditions**.

About Sinapic Acid

- **Type:** Natural phenolic acid compound
- **Chemical Family:** Derivative of *cinnamic acid*
- **Properties:** Exhibits **antioxidant, antitumor, anti-inflammatory, antibacterial, and neuroprotective** effects.
- **Natural Sources:** Found abundantly in **spices, citrus and berry fruits, vegetables, cereals, and oilseed crops**.

Mechanism of Action

- **Pathway Activated:** *SIRT1* (*Sirtuin 1*) pathway
- **Function:** This pathway regulates **tissue repair, angiogenesis** (formation of new blood vessels), and **inflammation control**.
- Sinapic acid's ability to enhance SIRT1 activity helps improve wound healing, particularly under **hyperglycemic (high blood sugar)** conditions where healing is usually impaired.

Significance

- The discovery represents a **major step forward** in developing **safe, natural, and cost-effective treatments** for **diabetic wound management**.
- It could provide a **non-synthetic alternative** to current therapies, which often have side effects or limited efficacy.

About Diabetic Wounds

- A **diabetic wound** (commonly a **foot ulcer**) is a slow-healing sore caused by **poor blood circulation, nerve damage (neuropathy), and infection risks** in diabetic patients.
- If untreated, it can lead to **severe complications**, including **amputation**.

About Diabetes Mellitus

- A **metabolic disease** characterized by **chronically elevated blood glucose levels** due to **insulin deficiency or resistance**.
- It remains one of the **most prevalent chronic diseases worldwide**, affecting **hundreds of millions** of people and posing major challenges for public health systems.

Indian Scops-Owl

Syllabus: GS-3; New Species

Context

- Birdwatchers recently recorded the **first-ever sighting of the Indian Scops-Owl** near the **Daroji Sloth Bear Sanctuary** in Karnataka, marking a significant addition to local avifauna records.



About Indian Scops-Owl

- **Scientific Name:** *Otus bakkamoena*
- **Distribution:** India, Nepal, Pakistan, Sri Lanka, Iran
- **Habitat:** Forests, scrublands, and agricultural areas; non-migratory

Physical Features

- **Size:** 17–20 cm in height; wingspan ~45 cm
- **Body:** Stocky, round head, short tail
- **Eyes:** Large, bright yellow with black pupils
- **Feathers:** Soft, fluffy; brown and grey with dark/light stripes and spots
- **Adaptation:** Nocturnal hunter feeding mainly on insects

Conservation Status

- Classified as **Least Concern** under the IUCN Red List
- No major immediate threats, but habitat protection remains important

Tetrataenium manilalianum

Syllabus: GS-3; Biodiversity

Context

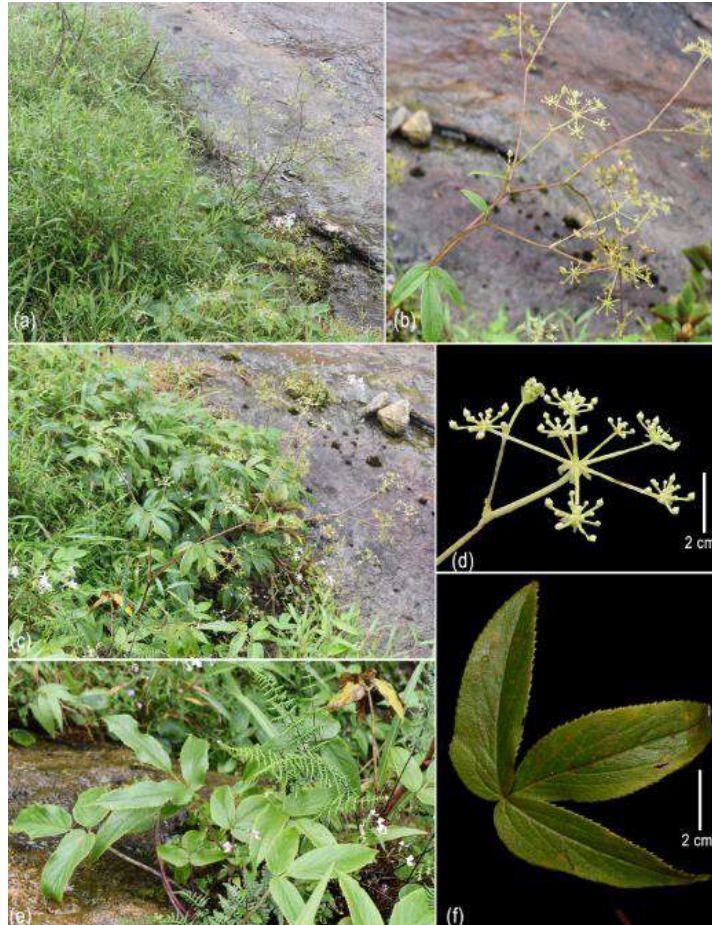
- Researchers have recently discovered a new plant species named **Tetrataenium manilalianum**, further enriching the biodiversity of the **Western Ghats**, one of the world's eight "hottest" biodiversity hotspots.

About Tetrataenium manilalianum

- **Family:** Umbelliferae (Apiaceae) — commonly known as the *carrot family*.
- **Discovery Site:** Eravikulam National Park, **Idukki district**, Kerala.
- **Named After:** Prof. **K.S. Manilal**, a noted botanist and founder-president of the *Indian Association for Angiosperm Taxonomy*.
- **Habitat:** Found exclusively in **grasslands bordering shola forests** in **high-altitude regions**.
- **Significance:**
 - It is the **48th species** identified within the carrot family.
 - This is the **first-ever discovery** of this species **anywhere in the world**.

➤ **Physical Traits:**

- Possesses **white flowers** and **underground rhizomes**.
- **Seasonal growth:** Sprouts and flowers **only during the monsoon**.



Key Facts about Eravikulam National Park

- **Location:** Along the summit of the **Western Ghats**, high ranges of **Idukki District**, Kerala.
- **Area:** 97 sq.km.
- **Topography:**
 - Home to **Anamudi Peak (2695 m)** — the **highest peak south of the Himalayas**.
- **Special Flora:**
 - Famous for the **Neelakurinji (*Strobilanthes kunthiana*)** flower, which **blooms once every 12 years**.
- **Climate:**
 - One of the **wettest regions** in the world.

- Receives heavy rain during both the **southwest (June–July)** and **retreating (October–November)** monsoons.
- **Vegetation:**
 - Dominated by **rolling grasslands** interspersed with **shola forests** in valleys.
- **Important Flora Species:**
 - *Actinodaphne bourdilloni*, *Microtropis ramiflora*, *Pittosporum tetraspermium*, *Syzygium aronottianum*, and *Chrysopogon zeylanicus*.
 - Rich in **balsams** and **orchids**, including *Brachycorythis wightii* (once thought extinct).
- **Fauna:**
 - Inhabited by **Nilgiri Tahr, Gaur, Sloth Bear, Nilgiri Langur, Tiger, Leopard, Giant Squirrel, and Wild Dog.**
 - **Half of the world's Nilgiri Tahr population** resides here.
 - Home to the **Atlas moth**, the **largest moth species** in the world.