



For success in a changing world

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- **Russia:** Withdrawn from key **arms-control treaties** and revived **test-site activity** in the Arctic.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

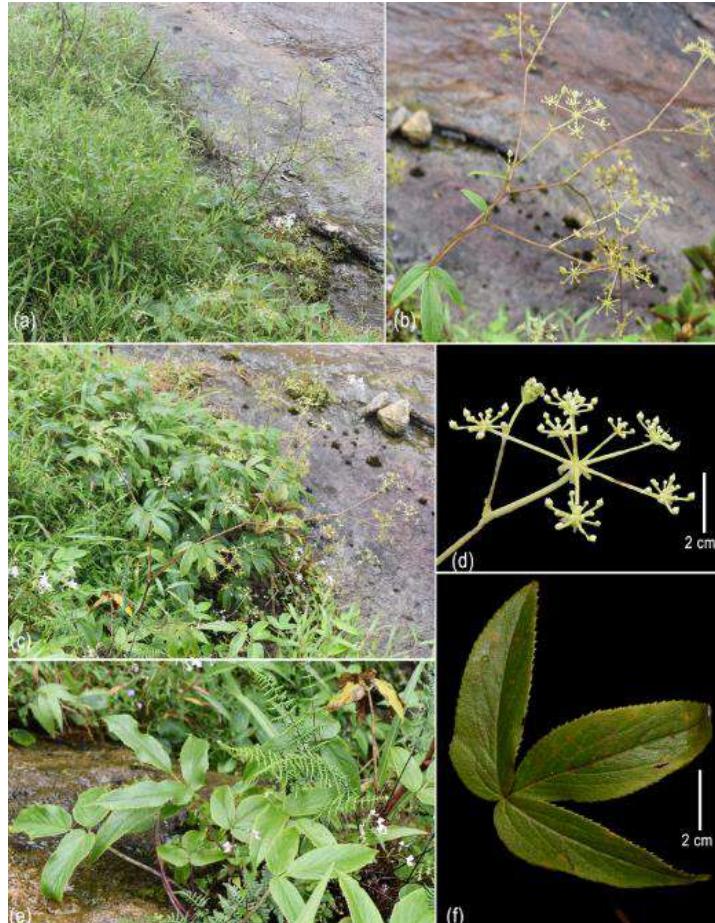
- Researchers have recently discovered a new plant species named **Tetrataenium manilalianum**, further enriching the biodiversity of the **Western Ghats**, one of the world's eight "hottest" biodiversity hotspots.

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 bourdillonii*, *Microtropis ramiflora*, *Pittosporum tetraspermum*, *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.