GEO IAS
It's about quality

THE HINDU
INDIA'S NATIONAL NEWSPAPER SINCE 1878

Daily News Analysis

The Hindu Important News Articles & Editorial For UPSC CSE

Monday, 14 April, 2025

Edition: International Table of Contents

The **Pilicode Rayaramangalam Temple** in **Kasaragod district of Kerala** has, for the first time, opened its **nalambalam** (inner sanctum area) to devotees from **all caste and community backgrounds**, ending long-standing entry restrictions.

- This reform is being hailed as a landmark **social inclusion** move within a religious institution.

Kerala temple opens sacred space to all sections

Previously restricted to specific communities, the inner quarter of the centuries-old Pilicode Rayaramangalam temple in Kasaragod district has been opened to all sections of society for the first time following a reformist campaign

The Hindu Bureau
KASARAGOD

In a landmark move, devotees from all communities entered the *nalambalam* – the sacred inner quarter – of the centuries-old Pilicode Rayaramangalam temple in Kasaragod district of Kerala for the first time, ending restrictions based on caste.

Previously restricted to specific communities, the sacred space in the temple managed by the Malabar Devaswom Board was opened to all communities following a campaign led by a reformist organisation.

Evolving norms: Devotees come out of the centuries-old Pilicode Rayaramangalam temple in Kasaragod. SPECIAL ARRANGEMENT

Around 8 a.m. on Sunday, a day before the Vishu festival, a group of 16 devotees stepped into the inner quarter of the temple. Others who had gathered to witness the moment followed, marking a significant shift in the temple's practices.

K.V. Rajesh, a member of the group, said that only people from the Brahmin, Marar, and Warrier communities were allowed to enter the space earlier. Maniyani, Nair, Vaniya and a few other communities were allowed entry during the festival period.

He said the initiative spearheaded by the reformist body Pilicode Ninav Purush Swayaamsahaya Sangham, a men's self-help group, gained momentum with its resolution advocating for universal entry rights. This was followed by the formation of the Janakiya Samithi, a people's committee comprising socio-cultural and political organisations, which petitioned the *Tantri* (head priest), State Devaswom Minister V.N. Vasavan, and the temple administrative committee. While the *Tantri* had responded that worshippers could pray near the inner quarter without affecting rituals, access into it came after the festival ceremonies concluded, he added.

The Janakiya Samithi confirmed that the inner quarter will remain open to all devotees in the coming days, reinforcing that the change was not symbolic, but permanent.

Sunday's event is being hailed as a moral and cultural victory, a sign that age-old rituals must evolve with time to reflect equality and inclusion.

Key Highlights :

Element	Details
Temple Name	**Pilicode Rayaramangalam Temple**, Kasaragod, Kerala
Reform	Permanent access to the **nalambalam (inner quarter)** for all communities

Managed by	**Malabar Devaswom Board**
Previously Allowed	Only **Brahmin, Marar, and Warrier** communities regularly; others like Nair, Vaniya during festivals only
Reform Initiative	Led by **Pilicode Ninav Purush Swayaamsahaya Sangham**, a men's self-help group
Coalition Formed	**Janakiya Samithi** (People's Committee) involving socio-cultural and political groups
Authorities Petitioned	Temple Tantri (chief priest), State Devaswom Minister, and temple board
Change Initiated On	A day before **Vishu festival** (Kerala New Year)

Important Facts:

Topic	UPSC-Relevant Facts
Nalambalam	The sacred inner complex in traditional Kerala temples
Devaswom Boards	Temple administration bodies (Malabar, Travancore, etc.) in Kerala
Tantri	Traditional head priest/spiritual authority in Kerala temples
Social Reform Movement	A modern example of caste-inclusion in religious spaces
Festival Link	Change occurred on the eve of **Vishu**, symbolizing renewal and reform

UPSC Prelims Practice Question

Ques :Consider the following statements regarding the recent reforms at Pilicode Rayaramangalam Temple in Kerala:

1. The temple is managed by the Travancore Devaswom Board.

2. Devotees from all communities have now been granted permanent access to the sacred inner sanctum (nalambalam).

3. The reform campaign was initiated by a local men's self-help group.

Which of the above statements is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Ans : b)

Page 07 : Prelims Fact

BatEchoMon, short for Bat Echolocation Monitoring, is India's first automated real-time bat detection and classification system, developed by bat researchers Kadambari Deshpande and Vedant Barje. It utilizes ultrasonic detection and AI-based analysis to monitor bats' activity.

BatEchoMon: India's first automated bat monitoring, detection system

BatEchoMon is programmed to activate at sunset, when bats begin flying, and continuously listens and analyses audio. Its Raspberry Pi microprocessor processes data captured by an ultrasonic detector, isolating bat calls from other noises, and then uses a neural network to identify the species

Nikhil Sreekandan

For her PhD research, bat biologist Kadambari Deshpande made overnight recordings of bat echolocation calls in the Western Ghats. A "good night" would generate about 30 GB of data from 11 hours of recording with a bat detector. To process the data, Deshpande would go through several one-minute recordings, scanning every millisecond for bat calls, and make notes on the species and other information on their behaviour and ecology.

"It took me 11 months to process 20 nights of data," Deshpande said. "BatEchoMon can probably give me that in a few hours."

BatEchoMon, short for 'Bat Echolocation Monitoring,' is an autonomous system capable of detecting and analysing bat calls in real-time. It is India's first automated bat monitoring system, developed by Deshpande and Vedant Barje under the guidance of Jagdish Krishnaswamy, at the Long-Term Urban Ecological Observatory in the School of Environment and Sustainability at the Indian Institute for Human Settlements (IIHS), Bengaluru.

Deshpande is a postdoctoral fellow at the Observatory and the School; Barje, who leads the WildTech Project at the Wildlife Conservation Trust, is a consultant there.

BatEchoMon marks a new chapter for bat research in the country, according to Deshpande. The monitoring system allows scientists who study bats to "go beyond data processing and towards asking interesting questions about bat ecology."

"Not only will it lead to a smoother workflow, it will help people transition to recording bats in different parts of the country, allowing us to gain more insights on the natural history and ecology of different bat species," Rohit Chakravarty, a bat researcher and conservationist at the Nature Conservation Foundation, said.

"I don't know of any device internationally with an inbuilt recording plus call classifying unit. If my knowledge serves me well, BatEchoMon is a milestone in bat research globally."

The bat in the machine

Aside from a recording device, BatEchoMon includes components to record, store, process, and analyse species-wise bat activity on the fly. "In [BatEchoMon], Audiomoth, a popular low-cost ultrasonic detector, has been configured to work as an ultrasonic microphone," Barje said.

BatEchoMon is programmed to activate automatically at sunset, when bats begin flying, and continuously listens and analyses audio. The device's brain is a Raspberry Pi microprocessor, which processes the data captured by Audiomoth. "It first isolates bat calls from other ultrasounds, such as those of insects or anthropogenic and environmental noises. Then the peak frequency and structure of a bat call are analysed to match a known pre-trained model, which helps identify the bat species," Deshpande explained.

"The system uses a [convolutional neural network] based algorithm to do this," Barje added. The output from the device is a spectrogram – a visual representation of the frequencies of an audio signal as it varies with time – of all detected bat calls, along with audio recordings of the portions with just the calls. The system also generates statistical data on which species has been most active through the night, which species was active when, and so on.

"Earlier, all of this needed to be interpreted manually, after painstakingly combing through hours of data," Deshpande said.

The Raspberry Pi and its associated processing components are enclosed in a box measuring 200 mm × 80 mm × 80 mm. Other auxiliary components in the device include a solar panel plus battery and a WiFi communication unit for power supply and data transmission, respectively. In the absence of the sun, the device can last for up to eight days, according to Barje. BatEchoMon also has a modular design, and its battery, charging apparatus, and the level of automation and data relay can be customised to the space it is installed in. But the team was reluctant to reveal more about the setup process.

Kadambari Deshpande and Vedant Barje with two BatEchoMon units. VIVEK HASYAGAR

> Currently, the system can identify six to seven common Indian bat species. Going forward, we would like to include as many bat species as possible

'Suddenly, it became possible'

Bat ecology and acoustics is a nascent field in India, with just a handful of bat researchers recording bat calls and analysing them for ecological studies. Global bat-call databases such as ChiroVox and Xeno-Canto have few recordings submitted by Indians.

Deshpande has been using bat detectors since 2008 and has observed their evolution worldwide. In Europe, she said, detectors equipped with the associated software and reference libraries have saved scientists a lot of time. Since then she has wanted to develop something similar, but customised for the insectivorous bats that are more common in India.

After a chance meeting with fellow researcher Barje, the duo started iterating through numerous designs, different microprocessors, algorithms, and power solutions – before arriving at the current version of BatEchoMon.

The core system of BatEchoMon costs a third of advanced detectors and similar systems, according to Barje. He didn't wish to disclose exact numbers, however.

The main challenge

In the last few months, BatEchoMon has successfully completed pilot tests in an IIHS site in Nashik. The team plans to test it for longer durations and in diverse conditions as well as to beta test the device with select users outside the organisation.

BatEchoMon's primary obstacle is the limited availability of reference libraries for the calls of many bat species. "Currently, the system can identify six to seven common Indian bat species. Going forward, we would like to include as many bat species as possible," Deshpande said.

They also said they hope the device in its present form will be able to identify the species commonly seen in urban, peri-urban, and human-modified forested areas. The main challenge is to create robust training datasets to make good detection models for different species.

Fortunately, collaborations among Indian researchers are improving because of initiatives like the 'State of India's Bats' workshop conducted by the Nature Conservation Foundation and Bat Conservation International, according to Chakravarty.

(Nikhil Sreekandan is an independent journalist. nsreekandan@gmail.com)

THE GIST

- BatEchoMon can detect and analyse bat calls in real-time. It is India's first automated bat monitoring system, developed by Kadambari Deshpande and Vedant Barje at the Long-Term Urban Ecological Observatory in Bengaluru
- The developers say the system allows scientists to progress towards asking questions about bat ecology, and will help people transition to recording bats in other parts of the country
- The output from the device is a spectrogram of all detected bat calls, along with audio of just the calls. The system also generates statistics on which species has been most active. Earlier, all of this needed to be interpreted manually

Key Features of BatEchoMon:

Feature	Description
Technology Used	Raspberry Pi microprocessor, Audiomoth ultrasonic detector, Neural Network (CNN algorithm)
Functionality	Records ultrasonic bat calls, filters noise, identifies bat species using pre-trained models
Output	Species-wise activity data, spectrograms, and audio recordings
Power Source	Solar panel with backup battery (8-day capacity)
Connectivity	WiFi-enabled for remote data transfer
Design	Modular, customizable based on installation needs
Cost	One-third the cost of imported systems

Scientific and Ecological Importance:

- Automates a time-consuming manual process of bat call analysis.
- Supports research in bat ecology, behaviour, and conservation.
- Addresses a major gap in Indian bat-call reference databases.
- Helps understand species distribution and nocturnal biodiversity.

Relevance for India:

- India has nascent bat acoustic research capabilities.
- Few contributions in global bat call libraries (like ChiroVox, Xeno-Canto).
- Device can be scaled to urban, peri-urban, and forested areas.
- Useful for biodiversity conservation and environmental monitoring.

Challenges:

- Limited training datasets for Indian bat species.
- Currently identifies only 6–7 common species.
- Need to expand reference call libraries through collaboration.

Prelims Fact Sheet:

Topic	Details
Device Name	BatEchoMon
Developed By	Kadambari Deshpande & Vedant Barje (IIHS Bengaluru)
Core Components	Raspberry Pi, Audiomoth, CNN Algorithm

Application Area	Bat acoustic monitoring, species detection
Primary Obstacle	Lack of reference call data for most Indian bats
Significance	First integrated real-time monitoring & analysis device for bats in India

UPSC PrelimsPractice Question

Ques :Consider the following statements regarding BatEchoMon:

1. It is India's first AI-enabled bat call monitoring and species classification system.

2. It uses radar imaging to detect bat movement.

3. The device is powered entirely by solar energy and works without a battery.

4. It uses convolutional neural networks for call classification.

Which of the above statements are correct?

(a) 1 and 4 only

(b) 2 and 3 only

(c) 1, 2, and 3 only

(d) 1, 3, and 4 only

Ans: a)

Page 10 : GS 2 : International Relations

On April 2, U.S. President Donald Trump announced a minimum 10% tariff on all imports, with significantly higher tariffs on countries like China (145%), India (27%), Vietnam (46%), and others. This has intensified fears of a global trade war and possible economic recession, especially amidst retaliation from China.

Will Trump's tariffs bring in a recession?

US. President Trump declared on April 2 that the U.S. would henceforth be charging a minimum of 10% tariff on all its imports. While the markets recoiled with horror at the scale of the tariff increases, China has vowed to 'fight till the end' in what may turn out to be a prolonged and bitter trade war

ECONOMIC NOTES

Jayan Jose Thomas

The U.S. has been the greatest champion of free trade and the chief architect of globalisation since the middle of the 20th century. However, in a stunning reversal of roles, U.S. President Donald Trump unleashed a carpet bombing of the global trading system on April 2, which he declared as "Liberation Day".

The U.S. tariff, or the tax America levies on imports from other countries, was 2 to 3% for two decades until 2024 (Chart 1). However, President Trump declared on April 2 that the U.S. would henceforth be charging a minimum of 10% tariff on all its imports. Imports from about 60 countries will have a significantly higher-level tariff – which is being described as "reciprocal" tariffs. These include tariffs of 20% on the European Union (EU), 27% on India, and 46% on Vietnam.

Tariffs of 25% were imposed in February itself on Mexico and Canada, the U.S.'s neighbours and two of its largest trading partners. But the biggest jolt has been the tariff imposed on China, which supplies one-sixth of all foreign goods the U.S. consumes. Imports from China to the U.S., as of April 11, will now face tariffs of 145% (Table 1).

The markets recoiled with horror at the scale of the tariff increases and their uncertainty. Stock markets nosedived. China has retaliated, returning each tariff blow with equal ferocity. It has imposed 125% tariffs on imports from the U.S. There is a distinct possibility that the U.S. and the world are heading towards a painful economic recession. On April 9, President Trump reversed some of his decisions, announcing a 90-day pause on "reciprocal" tariffs for most countries while insisting that the steep tariffs on China would take immediate effect.

A commodity with a price tag of $100 imported from (say, Vietnam) would have cost $103 in the U.S. market if tariffs were 3%. However, the same good must be purchased for $146 when the newly announced tariffs take effect. Tariffs protect domestic industries from foreign competition but may lead to price increases.

'Make America Great Again'

With its high per capita income and low tariffs, the U.S. has been the largest export market for goods from cars to computers, aiding the creation of manufacturing jobs in several countries. In 2022, China exported goods worth $576 billion to the U.S., but the U.S., in return, could sell only $154 billion worth of goods to China (Table 2). Overall, the U.S. had a trade deficit of $1,311 billion, or 5% of its gross domestic product (GDP), in 2022. America has managed to continue buying more from the world than what it sells because of the dollar's position as the dominant international currency. That is primarily thanks to China, which continues to back dollar-denominated assets, storing significant portions of its large export surpluses in U.S. treasury bonds. Such a mutually beneficial relationship between the two largest economic powers has been the key driver of the globalisation of trade and finance since the 2000s.

However, globalisation creates inequalities not only in the developing but also in the developed world. In the U.S., sectors such as steel and automobiles have been among the most hit by import competition.

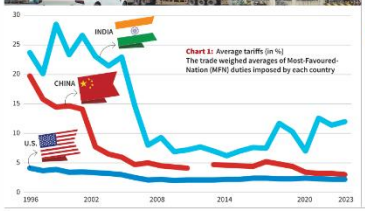

Chart 1: Average tariffs (in %)
The trade weighed averages of Most-Favoured-Nation (MFN) duties imposed by each country

Table 1: U.S. tariffs on selected countries and their export-GDP ratios

	U.S. tariffs (%), as of April 9, 2025	Exports as % of GDP
India	27*	21.8
China	145	19.7
Canada	25	33.4
Mexico	25	36.0
Vietnam	46*	87.2
South Korea	26*	44.0

*Yet to take effect due to the 90-day pause

Table 2: U.S.'s trade with major trading partners in 2022 (in $ billion)

Partner Name	Export	Import	Trade Balance
All countries	2,062	3,373	-1,311
China	154	576	-422
Mexico	324	459	-135
Canada	355	447	-92
Japan	80	154	-74
Germany	73	150	-78
Vietnam	11	136	-124
South Korea	71	121	-49
India	47	91	-44
United Kingdom	77	65	13
Thailand	16	63	-47

Sources: World Integrated Trade Solution (WITS), The World Bank, World Trade Organization (WTO), World Development Indicators, The New York Times.

THE GIST

With its high per capita income and low tariffs, the U.S. has been the largest export market for goods from cars to computers, aiding the creation of manufacturing jobs in several countries.

From now on, imports from about 60 countries will have a significantly higher level tariff – which is being described as "reciprocal" tariffs. These include tariffs of 20% on the European Union (EU), 27% on India, and 46% on Vietnam.

President Trump calls India a 'tariff king', referring to the marked increase in India's tariffs since 2018.

Trade disruptions ahead: Gantry cranes stand as containers stack below at Brani Terminal, operated by the PSA (Port of Singapore Authority) International Pte, Singapore on April 12. GETTY IMAGES

The resentment of the workers in these sectors – many of whom are white, middle-aged men – has been one of the factors that helped propel Mr. Trump to the U.S. presidency in 2016 and again in 2024. President Trump has promised to revive U.S. manufacturing, protecting it from competitors who, in earlier years, were allowed to "rip off" America with their imports.

Without a doubt, President Trump is playing with fire. With the higher tariffs, prices of most goods, especially consumer goods, will move upward, inflicting pain on ordinary Americans. It is doubtful if American firms can lift their production capabilities to serve at least a part of the demand created for them by making imports costlier.

China's gamble

China has vowed to "fight till the end" in what may turn out to be a prolonged and bitter trade war. Such bravado is backed by the fact that China has been quietly preparing for such a showdown for over a decade, gradually reducing its dependence on the U.S. economy. The proportion of exports to GDP has declined steeply in China, from 35% in 2012 to 19.7% in 2023. As a proportion of its total exports, China's exports to the U.S. have fallen, too, from 21% in 2006 to 16.2% in 2022. China has invested hugely in science, technology, and innovation, particularly in artificial intelligence and electric cars. This has been done partly in response to the U.S.'s restrictions on technology transfer to China. China bypassed U.S. tariffs earlier by shifting production to its East Asian neighbours (especially Vietnam), with which it built deep economic networks.

India's options

President Trump calls India a 'tariff king', referring to the marked increase in India's tariffs since 2018 (Chart 1). The biggest chunk of India's exports is sold to the U.S. ($91 billion in 2022), and they are critical for meeting the country's large import bill. Therefore, any reduction in India's export earnings following tariff escalation will be keenly felt. At the same time, as exports form a relatively small share (21.8%) of its GDP, the impact of the tariff increases may be less in India than in many other countries (Table 1). Also, there has been no increase in tariffs on pharmaceuticals and services, two of India's major export items to the U.S.

The narrowness of its manufacturing capabilities is the biggest hurdle for India. Tariff protection and the Production Linked Incentive Scheme have not been sufficient to revive this sector. India needs a clear-cut industrial policy and a resurgence in investments to escape the unfolding global turmoil.

Jayan Jose Thomas is a Professor of Economics at the Indian Institute of Technology (IIT) Delhi.

Key Issues and Analysis:

1. Shift in U.S. Trade Policy: From Globalisation to Protectionism

- Historical Role: The U.S. was the principal architect of post-WWII free trade (e.g., GATT, WTO).

- Trump's Turnaround: Labelled April 2 as "Liberation Day" — marking a reversal from free trade to economic nationalism under the slogan "Make America Great Again."
- Objective: To reduce trade deficit (notably with China: $576B exports from China vs. $154B from the U.S.) and revive domestic manufacturing (steel, autos).

2. Potential for Economic Recession

- Consumer Inflation: A $100 good from Vietnam would now cost $146 under new tariffs — this affects the U.S. consumer base directly.
- Market Reaction: Stock markets crashed due to uncertainty and anticipated supply chain disruptions.
- Limited Domestic Capacity: U.S. manufacturers may struggle to meet demand, leading to supply-side inflation.

3. China's Countermove and Long-Term Strategy

- Retaliation: China slapped 125% tariffs on U.S. goods.
- Diversification: Over a decade, China has reduced export dependence on the U.S. (from 21% of exports in 2006 to 16.2% in 2022).
- Self-reliance Drive: Massive investments in AI, electric vehicles, and tech innovation to withstand future sanctions.

4. India's Position: Between Opportunity and Challenge

- Exposure to U.S. Market: India exported $91B to the U.S. in 2022; vital for managing its trade deficit.
- Tariff Concerns: India labeled a "tariff king" by Trump, and slapped with 27% tariffs.
- Relative Cushioning: Exports are just 21.8% of GDP, and pharma/services — major sectors — are unaffected by new tariffs.
- Domestic Weaknesses: Poor manufacturing base, over-reliance on few sectors. PLI schemes haven't yet translated into large-scale industrial revival.

Cause-Effect Flowchart:

Trump Tariff Hike (10–145%)
↓
Global Trade Disruption → China Retaliates
↓
Rising Prices in U.S. → Lower Consumer Demand → Slowdown
↓
Markets Nosedive → Fear of Global Recession

↓

India: Export Dip Risk + Weak Manufacturing = Vulnerability

Way Forward:

- For the U.S.:
  - Balance protectionist goals with global economic stability.
  - Avoid overburdening domestic consumers.
- For India:
  - Formulate a comprehensive industrial policy beyond PLI.
  - Diversify export base: Shift from reliance on goods to high-value services and tech-driven manufacturing.
  - Negotiate trade arrangements (e.g., mini-deals) to ensure tariff relief on critical sectors.
- For the Global Economy:
  - WTO needs reforms to mediate trade conflicts.
  - Countries must push for multilateral diplomacy over bilateral trade wars.

UPSC Mains Practice Question

Ques :*U.S. tariff escalation under Trump marks a shift from free trade to protectionism. Analyse its impact on global economy and examine India's vulnerabilities and policy options in this evolving scenario. (250 words)*

In News : India-Middle East-Europe Economic Corridor (IMEEC)

Recently, India and Italy have agreed to deepen their strategic cooperation across key sectors, including trade, defence, clean energy, and high technology.

Why in the News?

- This commitment was reaffirmed during a meeting between External Affairs Minister S. Jaishankar and Italian Deputy Prime Minister Antonio Tajani held in April 2025.
- The discussions prominently focused on advancing ties under the Joint Strategic Action Plan (JSAP) 2025–2029, which serves as a structured roadmap to diversify bilateral cooperation.
- The JSAP was jointly announced by Prime Minister Narendra Modi and Italian Prime Minister Giorgia Meloni during their meeting in November 2024 in Rio de Janeiro.

About the India-Middle East-Europe Economic Corridor (IMEEC)

- IMEEC is a multimodal connectivity initiative aiming to improve infrastructure for trade and transport between India, the Middle East, and Europe.
- It was officially launched through a Memorandum of Understanding (MoU) signed by India, the European Union, France, Germany, Italy, Saudi Arabia, UAE, and the US during the G20 Summit in New Delhi (2023).
- IMEEC is a part of the broader Partnership for Global Infrastructure and Investment (PGII), which was initially announced at the G7 Summit 2021 in the UK.
- It is widely regarded as a strategic counter to China's Belt and Road Initiative (BRI).
- Structure of IMEEC: IMEEC will comprise two main corridors:
  - Eastern Corridor: Connecting India to the Gulf region.
  - Northern Corridor: Connecting the Gulf to Europe.

Expansion of Bilateral Cooperation

- India and Italy agreed to deepen cooperation in critical areas such as: Trade and Investment, Defence and Security, Clean Energy Transition, High-end Technology, Space and Scientific Research and People-to-People Exchanges.
- The ministers also identified vast potential for collaboration in sectors including: Artificial Intelligence (AI), Cybersecurity and Telecommunications, Digital Technologies, Renewable Energy and Biofuels and Higher Education and Youth Mobility.

UPSC PrelimsPractice Question

Ques :Consider the following statements regarding the India-Middle East-Europe Economic Corridor (IMEEC):

1. IMEEC was launched during the G7 Summit held in Italy in 2023.

2. IMEEC comprises an Eastern Corridor connecting India to the Gulf, and a Northern Corridor connecting the Gulf to Europe.

3. IMEEC is viewed as a strategic alternative to China's Belt and Road Initiative (BRI).

Which of the above statements are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Ans: (b)

In News : rt-LAMP Assay

Researchers from Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, have successfully developed a novel, indigenous, real-time LAMP (rt-LAMP) assay for the early detection of Tuberculosis (TB).

What is the rt-LAMP Assay?rt-LAMP Assay

- The rt-LAMP assay is a molecular diagnostic tool similar to GeneXpert and Truenat, providing high sensitivity and specificity. It can detect TB DNA even when only 10 copies per microlitre are present, enabling early-stage diagnosis.
- Unlike RT-PCR, which requires three different temperature cycles, **rt-LAMP works at a single temperature, simplifying the testing process.
- The test uses six primers for DNA amplification (compared to two in RT-PCR), ensuring faster and more specific detection.
- The researchers used a fluorescent dye (Syto 16)—commonly used in cell biology—which does not inhibit the reaction, solving the long-standing issue of false negatives in earlier LAMP tests.
- Results can be detected in 10–20 minutes, significantly reducing diagnostic time compared to RT-PCR.

Regulatory Status

- The rt-LAMP assay has been licensed to the industry for production.
- It has received approval from the Central Drugs Standard Control Organisation (CDSCO).
- The Indian Council of Medical Research (ICMR) is currently validating the technology.
- The World Health Organization's Health Technology Access Pool (HTAP) also evaluates the test, pending ICMR validation.

Significance for India's TB Control Strategy

- As of 2023, around 79% of presumptive TB cases in India were still being diagnosed using sputum smear microscopy, while only 21% used molecular tests.
- Despite the rise in molecular testing labs (from 5,090 in 2022 to 6,496 in 2023), India still falls short of the targets set under the National Strategic Plan (2017–2025) to reduce reliance on smear microscopy.
- The indigenous rt-LAMP assay could help bridge the diagnostic gap, by providing a low-cost, rapid, scalable, and accurate alternative to outdated smear techniques.
- It supports the National TB Elimination Programme (NTEP) by enabling faster case detection, reducing disease transmission, and improving public health outcomes.

UPSC PrelimsPractice Question

Ques :Consider the following statements about sea lions:

1. Sea lions are part of the Pinnipedia family and are found only in the Arctic region.

2. They have external ear flaps and long foreflippers.

3. Male sea lions have mane-like fur and can weigh more than 500 kg.

Which of the statements given above is/are correct?

(a) 2 and 3 only

(b) 1 and 2 only

(c) 1 and 3 only

(d) 1, 2 and 3

Ans : a)

GEO IAS
It's about quality

THE HINDU
INDIA'S NATIONAL NEWSPAPER SINCE 1878

Daily News Analysis

Page : 08 Editorial Analysis

A Governor's conduct and a judgment of significance

Suhrith Parthasarathy

is an advocate practising in the Madras High Court

Last week, in a judgment of wide-ranging significance, in *The State of Tamil Nadu vs The Governor of Tamil Nadu and Anr.*, a two-judge Bench of the Supreme Court of India, comprising Justice J.B. Pardiwala and Justice R. Mahadevan, reaffirmed the limits that bind gubernatorial authority. In doing so, the Court reminded us of a constitutional truth that ought to be self-evident: the Governor of a State is neither an appendage of the Union nor an independent power centre, but is constrained by legal norms and democratic principle.

A need to respect democratic obligations

At the heart of the case was a seemingly simple but institutionally weighty question: what happens when a Governor fails to act on a Bill duly passed by the State's legislature? The answers from the Court not only helped validate a clutch of Bills passed by the Tamil Nadu Legislative Assembly – each of which had languished without assent – but also contained in them a broader message. The office of the Governor, while significant, is not exempt from the obligations of representative democracy. To withhold assent indefinitely, without reason, subverts the constitutional order.

Initially numbering 12, the contested Bills trace their origins to as far as 2020, with two enacted under the previous regime in the State. Among them were Bills that sought to supplant the Governor's power to appoint Vice-Chancellors to public universities – proposals that emanated out of a long-standing skirmish between the Raj Bhavan and the elected government over institutional control.

For years, the Governor took no discernible action. When the State government moved the Supreme Court in November 2023, he promptly referred two of the Bills to the President for her consideration. The Legislative Assembly, in turn, convened a special session to reenact the remaining 10 Bills. But when these were sent to the Governor, he swiftly passed them on to the President. Since then, the President assented to only one, rejected seven outright, and left two pending.

It was this sequence of events which formed the basis for the State government's case in the Court. The Governor, through his conduct, the State claimed, had undermined the people's will. His prolonged inaction, and ultimately delayed referral, therefore, demanded judicial scrutiny.

India's federal design rests on a delicate balance. The Constitution carefully demarcates legislative authority between the Union and the States. Article 245 prescribes the territorial jurisdiction of each, allowing Parliament to legislate for the entire country or any part thereof, while State legislatures are confined to their respective territories.

The scope of legislative powers is categorised into three distinct lists outlined in the Constitution's Seventh Schedule. The Union enjoys exclusive authority over items in List I, while subjects in List III allow for legislation by both the Union and State governments. Matters in List II, on the other hand, remain under the sole legislative domain of the States. However, in the event of conflict with a parliamentary law, primacy is given to the Union legislation.

In this scheme, the Governor, though appointed by the President, functions as the constitutional head of the State. Barring specific instances where the Constitution expressly permits discretion, he is bound to act on the advice of the State's Council of Ministers.

The top court has reiterated a constitutional truth – that the Governor of a State is constrained by legal norms and democratic principle

A reading of Article 200

It is in this context that Article 200 of the Constitution, which deals with how a Governor ought to assent to a Bill, assumed significance before the Court. Much of the dispute turned on its interpretation. On a plain reading of Article 200, the Governor may: grant assent; withhold assent (and return the Bill to the Assembly for reconsideration), or reserve the Bill for the President's consideration.

The Union of India, in their response to Tamil Nadu's petition, contended that the first proviso to Article 200 provided the Governor an independent, fourth course of action: he could simply withhold his assent to a Bill, without referring it back to the Assembly. In other words, he could perform a pocket-veto.

But this argument had expressly been rejected by the Court in *State of Punjab vs Principal Secretary to the Governor of Punjab* (2023). There, it found that the proviso to Article 200 contains no independent power. Once an ordinary Bill is passed by the Assembly, the Governor has only one of three options available: to either assent to it, or reserve it for the President's consideration, or withhold the assent, in which case, the Governor must also refer it back to the Assembly for reconsideration.

It was also the Union's case that in deciding whether to reserve a Bill for the President's assent, the Governor could exercise an autonomous discretion. That is, he had the independent ability to decide what course of action to follow. In answering this argument, the Court harked to the debates in the Constituent Assembly. It noted that the draft version of Article 200 (then Article 175) had explicitly stated that the Governor "may, in his discretion" reserve a Bill for the consideration of the President. This phrase was consciously omitted in the adopted version. Its removal, the Court held, was deliberate, aimed at ensuring that the Governor's role was constrained by the advice of the elected executive.

Indeed, the Court identified only three narrow circumstances in which the Governor could act without ministerial counsel: first, where the second proviso to Article 200 applied, that is where a Bill derogated from a High Court's powers; second, where a Bill fell within a class for which presidential assent was explicitly mandated, such as under Article 31C where a law was sought to be protected from judicial review; and third, where a Bill so fundamentally undermined constitutional values.

This conclusion came with an important caveat. Even where a Governor exercises discretion, the action is still amenable to judicial review. Relying on its earlier judgment in *Rameshwar Prasad vs Union of India* (2006), the Court found that while Article 361 grants personal immunity to Governors, it does not insulate their actions from legal scrutiny. Consider the alternative: a Governor may simply paralyse the legislative process by sitting over Bills for years on end, all the while hiding behind the cloak of gubernatorial immunity, choking, in the process, the entire governance of a State.

In any event, in this case, the Court found that there was no discretion available to the Governor. Having chosen to withhold assent, he could not plausibly have then referred the Bills to the President, on their being re-presented to him. There was no trace of executive advice backing his decisions nor were his acts grounded in any identifiable, let alone defensible, constitutional rationale. Having found the Governor's actions unconstitutional, the Court could no doubt have considered issuing what the law describes as a writ of mandamus, compelling him to grant his assent to the Bills. But given the substantial time that had lapsed and given that previous Court decisions had been overlooked, the Court chose the ostensibly extreme option. With a view to achieving complete justice – a power available to it under Article 142 – it declared that these 10 Bills would be deemed to have been assented to on the date when they were re-presented to the Governor.

Some might see this as judicial overreach, but issuing a mandamus might well have been rather more unworkable. Should the Court's orders be breached, it cannot plausibly hold the Governor in contempt. Therefore, the ultimate direction must be seen as a logical *sequitur* to the Court's findings: on the Bills being passed anew by the State Assembly, and on the Council of Ministers recommending their assent, the Governor was left with no discretion in the matter.

The larger message

The significance of the judgment for the specific Bills, which were at stake, is plain to see. But the verdict also carries with it a larger message. It upholds a fact intrinsic to our Republic: that the Governor, though appointed by the Union government, functions on the aid and advice of the State executive; the office is meant to serve not as a source of political disputes, but as a constitutional sentinel, upholding the values of representative democracy.

Paper 02:Indian Polity

UPSC Mains Practice Question:The Supreme Court in the State of Tamil Nadu vs. Governor of Tamil Nadu case reaffirmed that gubernatorial powers are not above constitutional limitations. Critically examine the role of Governors in the legislative process with reference to Article 200, and discuss the constitutional remedies available when Governors delay or deny assent to Bills.(250 words)

Context :

In The State of Tamil Nadu vs. The Governor of Tamil Nadu and Another, a two-judge Bench of the Supreme Court of India, led by Justice J.B. Pardiwala and Justice R. Mahadevan, reaffirmed that Governors' powers are limited and must follow constitutional boundaries.

What constitutional issue was addressed in the Tamil Nadu vs the Governor case?

Aspect	Details	Example
Limits of Gubernatorial Discretion (Article 200)	The Governor cannot withhold assent to a Bill indefinitely or act independently of the elected State Cabinet, except in constitutionally specified situations. The role is largely ceremonial.	Governor of Tamil Nadu withheld assent to 12 Bills, including those on the appointment of Vice-Chancellors to public universities.

Constitutional Obligations of the Governor and State Executive	The Governor is bound by the advice of the State Cabinet and cannot act on personal discretion unless explicitly permitted by the Constitution. This upholds representative democracy.	Governor delayed referrals to the President without valid reasons, thereby undermining the democratic function of the State Legislature.
Judicial Review of Governor's Actions	Article 361 gives personal immunity to the Governor but does not shield official actions from judicial review. Courts can check if actions comply with the Constitution and democratic norms.	Supreme Court held that the Governor's inaction violated the Constitution, and invoked Article 142 to deem the Bills as assented to, resolving the legislative deadlock.

Why was the Governor's inaction on Tamil Nadu Bills ruled unconstitutional?

- Violation of Constitutional Duty under Article 200: The Governor is constitutionally bound to either assent to a Bill, withhold assent (and return it for reconsideration), or reserve it for the President. Indefinitely sitting on Bills without any action violates this mandate. Eg: The Governor kept 10 re-enacted Bills pending without any action or justification, undermining the role of the legislature.
- Undermining the Principles of Representative Democracy: By not acting on duly passed Bills, the Governor disregarded the advice of the elected Council of Ministers, thereby disrupting the democratic process and the legislative will of the people. Eg: Despite the Tamil Nadu Assembly passing the Bills again in a special session, the Governor forwarded them to the President without consulting the State Cabinet, showing a lack of respect for democratic norms.

When can a Governor use discretion under Article 200?

- When a Bill Affects the Powers of the High Court: The second proviso to Article 200 allows the Governor to reserve a Bill that directly affects the powers of the High Court for the President's consideration. Eg: If a State law tries to curtail the High Court's jurisdiction or authority, the Governor can use discretion to reserve it.
- When Presidential Assent is Constitutionally Mandatory: If a Bill falls under categories where presidential assent is specifically required (such as laws under Article 31C that seek immunity from judicial review), the Governor may reserve it. Eg: A Bill claiming protection under Article 31C, linked to Directive Principles, must be reserved for the President.
- When a Bill Fundamentally Undermines Constitutional Values: The Governor can act without ministerial advice if the Bill threatens the basic structure or core values of the Constitution. Eg: A Bill that violates secularism or federalism in an extreme manner could justify the Governor's discretionary action.

How did the Supreme Court invoke Article 142 to resolve the constitutional deadlock in the Tamil Nadu Bills case?

- Used Article 142 to Ensure Complete Justice: The Court exercised its special power under Article 142 to deliver complete justice by deeming the 10 re-enacted Bills as having received the Governor's assent. Eg: Instead of waiting for further assent or action from the Governor, the Court directly validated the Bills to avoid further delays in governance.
- Bypassed Unworkable Remedies Like Mandamus: Issuing a writ of mandamus (to compel the Governor to act) was seen as ineffective since the Governor is protected from personal liability under Article 361. Eg: Since the Governor cannot be punished for contempt, the Court chose Article 142 as a more enforceable solution.
- Restored the Legislative Authority of the State: By invoking Article 142, the Court reinforced the principle that the Governor cannot override the will of an elected legislature through inaction Eg: This prevented indefinite delays in implementing laws passed by the Tamil Nadu Assembly, thus preserving democratic functioning.

Why was issuing a writ of mandamus deemed inadequate?

- Governor is Immune Under Article 361: The Constitution grants the Governor personal immunity from legal proceedings while in office, making it difficult to enforce any court directive. Eg: Even if the Court issued a mandamus to compel assent or action, the Governor could not be held legally accountable for ignoring it.
- Mandamus Cannot Be Enforced Practically: Courts cannot force a Governor to exercise discretion in a particular way, only to consider doing so—making the remedy ineffective when deliberate inaction is involved. Eg: If the Governor simply delays action without giving reasons, courts have limited tools to compel a timely decision.

- Could Cause a Constitutional Standoff: Forcing the Governor through judicial direction risks undermining the separation of powers and could lead to a deadlock between constitutional authorities. Eg: If the Governor resists the court order, it could trigger a conflict between the judiciary and the executive, weakening the constitutional balance.

Way forward:

- Codify Time Limit for Assent: Amend the Constitution or enact a statutory framework to prescribe a reasonable time limit (eg: 30 days) within which the Governor must act on Bills to prevent indefinite delays.
- Enhance Legislative Oversight: Establish a mechanism for State Legislatures to seek judicial clarification or initiate review when the Governor delays action, reinforcing accountability and upholding democratic norms.
