



# Daily Current Affairs



## To The Point by Dhananjay Gautam

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## 1 Supreme Court's Landmark Ruling on the Places of Worship Act, 1991

**Context:** The Supreme Court of India has issued directives barring civil courts from registering new cases or ordering surveys concerning the ownership or title of **places of worship**. Pending suits are also restricted from issuing **interim or final orders** until further hearings scheduled for **February 17, 2025**.

**The Places of Worship Act, 1991: An Overview:**

**Historical Context:**

The Act was enacted during the **Ramjanmabhoomi movement** in the late 1980s, a period marked by calls for building a Ram temple at the **Babri Masjid site in Ayodhya**. The **PV Narasimha Rao-led government** introduced the Act to avert similar disputes and maintain communal harmony.

**Objective of the Act**

**The Act aims to:**

- **Preserve the religious character** of places of worship as it existed on **August 15, 1947**.
- Prohibit **conversions of religious sites**, whether within a religion (e.g., one denomination to another) or between religions.

**Key Provisions of the Act:**

1. **Section 3:** Bars any conversion of places of worship.
2. **Section 4(1):** Maintains the **religious character** of all places of worship as it stood on August 15, 1947.
3. **Section 4(2):** Prevents new suits related to conversions and mandates abatement of pending suits regarding conversions prior to the cutoff date.
4. **Section 5:** Excludes the **Ram Janmabhoomi-Babri Masjid dispute** from its provisions.

**Exceptions to the Act:**

**The Act does not apply to:**

- **Protected Sites:** Classified as ancient monuments or archaeological sites.
- **Resolved Legal Cases:** Disputes settled before the Act came into effect.
- **Mutual Agreements:** Where parties agreed to the change before the Act's enactment.
- **Historical Time-Barred Cases:** Conversions that occurred before the cutoff date but cannot be contested due to time limits.

**Background of the Case:**

**Core Legal Challenge:**

The constitutional validity of the Places of Worship Act, 1991, has been challenged on the following grounds:

1. It allegedly bars **judicial review**, a basic feature of the Constitution.
2. It imposes an **arbitrary retrospective cutoff date**, infringing on the **religious rights** of Hindus, Jains, Buddhists, and Sikhs.

**Relevant Timelines and Observations:**

- **2022 SC Observations:** The court clarified that conducting surveys of religious sites does not inherently violate the Act.
- **Ayodhya Verdict (2019):** The court upheld the Act as part of the **basic structure of the Constitution**, viewing it as essential for **secularism** and **communal harmony**.

**December 2024 Ruling: Key Directions:**

**Supreme Court's Stance:**

1. **Fresh Suits:** No new suits can be registered, and no action can proceed on pending cases.
2. **Union Government Response:** Directed the government to clarify its stand on the constitutional validity of the Act within **four weeks**.

**Observations by the Bench:**

- Emphasized that lower courts must adhere to principles laid out in the Ayodhya judgment.





- Stated that larger constitutional principles, even in the absence of the Act, may bar suits seeking to alter the religious character of places of worship.

### Key Takeaways:

#### The Supreme Court has:

- Reinforced the importance of the Places of Worship Act, 1991, in maintaining **communal harmony**.
- Reiterated the need for adherence to **constitutional principles** in matters involving **religious sites**.
- Highlighted the larger implications of any action that could disturb the **status quo** of places of worship.

### Conclusion:

The **Supreme Court's ruling** underscores the critical role of the **Places of Worship Act** in safeguarding India's **secular fabric** and promoting **peaceful coexistence**. The judgment sets a precedent for maintaining communal harmony while addressing historical grievances through constitutional principles, rather than contentious legal battles.





**2 Dark Eagle Anti-Missile System: A Game-Changer in Missile Defense**

**Context:** The **United States** has successfully tested a new **anti-missile system** called **Dark Eagle**, which is now approaching operational readiness. This advanced system is designed to bolster missile defense capabilities and enhance strategic deterrence.

**What is the Dark Eagle Anti-Missile System?****A Revolutionary Hypersonic Defense System:**

The **Dark Eagle** is a **long-range hypersonic anti-missile system** engineered by the United States to intercept and neutralize a wide range of threats, including:

- **Ballistic missiles**
- **Cruise missiles**
- **Hypersonic missiles**
- **Advanced warheads**

**Unparalleled Range and Speed:**

- **Operational Range:** Over **2,775 kilometers (1,724 miles)**, enabling strikes deep within enemy territory.
- **Hypersonic Glide Warhead (C-HGB):** Equipped with a cutting-edge warhead capable of reaching speeds up to **Mach 17**. This incredible velocity makes it highly challenging for adversaries to intercept.

**Advanced Features:**

1. **Two-Stage Ballistic Missile Design:**
  - One stage incorporates the **C-HGB warhead**, designed for extreme speed and precision.
2. **Hypersonic Capabilities:**
  - Reaches speeds of **3,000 to 3,700 meters per second** at altitudes below **50 kilometers**.

**Strategic Superiority:**

The Dark Eagle system is designed to **outperform advanced air defense systems**, including:

- **Russia's S-300V4**
- **S-400**
- **S-500**

With its unmatched speed, range, and technological sophistication, the Dark Eagle poses a significant challenge to existing missile defense systems.

**Why is Dark Eagle Important?**

- **Enhanced Security:** Provides robust defense against emerging missile threats.
- **Strategic Deterrence:** Strengthens the U.S. position in the global defense landscape.

**Technological Edge:** Showcases advancements in hypersonic weaponry and missile interception technologies.

**Conclusion:**

The **Dark Eagle Anti-Missile System** represents a monumental leap in missile defense technology. With its **unparalleled range, hypersonic capabilities**, and ability to counter diverse missile threats, it underscores the United States' commitment to maintaining **strategic superiority** and ensuring **global security**.

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## Supreme Court Criticizes Rising Misuse of IPC Section 498A

**Context:** The **Supreme Court of India** has expressed concerns over the growing misuse of **Section 498A** of the Indian Penal Code (now **Section 84** of the **Bharatiya Nyaya Sanhita, 2023**). This section, originally intended to safeguard married women from cruelty, is increasingly being exploited for personal vendettas.

**Understanding Section 498A (Now Section 84):****What Does It Address?**

Section 498A penalizes **cruelty against married women** by their husbands or in-laws. It aims to protect women from:

- **Physical or mental harassment**
- **Dowry-related abuse**
- **Coercion or violence within marriage**

**Definition of Cruelty:****Cruelty includes:**

1. **Wilful conduct** likely to drive a woman to suicide or cause **grave harm** to her physical or mental health.
2. **Harassment** intended to coerce the woman or her relatives into meeting **unlawful demands** for money or valuables.

**Punishment**

- Imprisonment up to **three years**
- Liability to pay a **fine**

**Key Features:**

- **Cognizable and non-bailable:** Immediate arrest is possible.
- **Time-bound complaints:** Complaints must be filed within **three years** of the incident.

**Why Was Section 498A Introduced?**

Section 498A was enacted in response to increasing cases of **dowry deaths** and **domestic violence** during the 1980s. It aimed to provide legal protection to women suffering from:

- **Physical and mental abuse**
- **Dowry-related coercion**
- **Marital violence**

**Misuse of Section 498A:****Emerging Concerns:**

1. **Personal Vendetta:** The law is often used to settle scores in **matrimonial disputes**.
2. **Financial Coercion:** False allegations are leveraged to extort money from the husband and his family.
3. **Vague Complaints:** Allegations often lack **specific details** or supporting evidence.
4. **Reputational Damage:** Accusations, even if proven false, leave a **social stigma** for the accused.
5. **Immediate Arrests:** The provision for quick arrests can lead to undue pressure before guilt is established.

**Ethical Implications:**

The misuse of such legal provisions undermines their original intent and raises questions about **integrity and fairness** in the judicial process.

**Reasons Behind the Misuse:**

1. **No Preliminary Verification:** Arrests are possible without a thorough **investigation**, increasing scope for abuse.
2. **Marital Disputes:** False accusations are often weaponized during **divorce** or interpersonal conflicts.
3. **Lack of Accountability:** The absence of penalties for filing **false complaints** encourages misuse.

**Supreme Court's Stand:**

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**Key Observations:**

- **Scrutiny of Allegations:** Courts must scrutinize **vague complaints** to prevent harassment of innocent parties.
- **Specific Details Needed:** FIRs should include **concrete allegations** with details like time, date, and place of harassment.
- **Contextual Examination:** The court considers the **timing and circumstances** of the complaint to assess its authenticity.
- **Protecting Innocents:** Ensures that family members are not unnecessarily implicated without substantial evidence.
- **Judicial Oversight:** Emphasizes the judiciary's role in filtering **malicious complaints**.

**Way Forward:**

1. **Balanced Laws:** Ensure legal frameworks are **gender-neutral**, protecting the rights of all individuals.
2. **Preliminary Inquiry:** Mandate a **preliminary investigation** before registering FIRs to screen false cases.
3. **Family Welfare Committees:** Independent bodies can review complaints before arrests, as suggested in the **Rajesh Sharma case**.
4. **Accountability for False Complaints:** Introduce penalties for individuals filing **malicious complaints** to deter misuse.

**Conclusion:**

While **Section 498A** plays a critical role in protecting women from cruelty, its **misuse undermines justice** and burdens the judicial system. A balanced approach, incorporating **preliminary scrutiny** and **accountability mechanisms**, is essential to preserve the integrity of this important provision while safeguarding the rights of the accused.

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## Union Cabinet Approves Bills for Simultaneous Polls

**Context:** The **Union Cabinet** has recently approved two critical Bills aimed at implementing **simultaneous elections** for the **Lok Sabha** and **State Legislative Assemblies**. One of these Bills proposes constitutional amendments, while the other focuses on amending laws related to **Union Territories** with Legislative Assemblies.

This development follows recommendations by a **high-level committee**, led by former President **Shri Ram Nath Kovind**, outlining a roadmap for conducting simultaneous elections across **Parliament**, **State Assemblies**, and **Local Bodies**.

**What Are Simultaneous Elections?**

**Simultaneous Elections** involve conducting polls for:

- **Lok Sabha**
- **State Legislative Assemblies**
- **Local Bodies** (Municipalities and Panchayats)

all at the same time. This concept aims to streamline the election process and ensure governance efficiency.

**Why Are Simultaneous Elections Necessary?**

1. **Improved Governance:** Frequent elections disrupt **development programs** and delay **policy decisions** due to the imposition of the **Model Code of Conduct (MCC)**.
2. **Reduced Financial Burden:** Holding elections together will significantly cut down the **massive expenditure** incurred during separate elections every year.
3. **Optimized Human Resources:** Simultaneous polls prevent the diversion of **security forces**, teachers, and other officials from their primary duties for extended periods.
4. **Other Benefits:**
  - Increased **voter participation**
  - Reduced burden on courts due to fewer election-related disputes.

**Concerns About Simultaneous Elections:**

**While the idea has several benefits, it also poses challenges:**

1. **Impact on Regional Parties:** Simultaneous polls might affect the **electoral prospects of regional parties** by amplifying national issues over local concerns.
2. **Reduced Accountability:** With elections held every five years, **public scrutiny** of elected officials may diminish.
3. **Logistical Challenges:** The need for a **large number of EVMs** and extensive logistical arrangements makes the implementation complex.

**Key Recommendations of the High-Level Committee:**

The **Ram Nath Kovind-led committee** proposed the following measures to facilitate simultaneous elections:

1. **Constitutional Amendments:**
  - Amendments to **three Articles** and the inclusion of **12 new sub-clauses** in the Constitution.
  - Changes to laws related to Union Territories with Legislative Assemblies.
2. **Unified Electoral Roll:**
  - A **single electoral roll** to be prepared by the **Election Commission of India (ECI)** in collaboration with **State Election Commissions**, through an amendment to **Article 325**.
3. **Local Body Elections:**
  - Elections for **municipalities** and **panchayats** to be conducted within **100 days** of Parliamentary and Assembly polls.
4. **Appointed Date for Synchronization:**



- The President will notify the **first sitting date** of the Lok Sabha after a general election as the **appointed date** to align elections.

## 5. Handling Interim Situations:

- In the case of a **hung House** or a **no-confidence motion**, fresh elections would be held for the **remaining term** of the preceding full term.

### Conclusion:

The move towards **simultaneous elections** marks a significant step in reforming India's electoral process, aligning with goals of **efficiency**, **cost-effectiveness**, and **better governance**. However, addressing logistical and constitutional challenges will be crucial to ensuring its smooth implementation.





## 5 ISRO Successfully Tests CE20 Cryogenic Engine

**Context:** The Indian Space Research Organisation (ISRO) recently conducted a **successful sea-level hot test** of the **CE20 Cryogenic Engine** at the **ISRO Propulsion Complex**, Mahendragiri, Tamil Nadu. This marks a significant milestone in India's advancements in **cryogenic rocket technology**.

**What is Cryogenic Engine Technology?**

**Cryogenic engines** utilize rocket propellants stored at extremely low temperatures, ensuring efficient propulsion.

- **Liquid Hydrogen (LH2)** serves as the **fuel**, remaining in liquid form at temperatures below **-253°C**.
- **Liquid Oxygen (LOX)** acts as the **oxidizer**, staying liquid at temperatures below **-183°C**.

These propellants are combined in precise proportions to achieve high-efficiency combustion.

**Features of the CE20 Cryogenic Engine:**

- Engine Restart Capability:**
  - Equipped with a **multi-element igniter**, this engine can be restarted, an essential feature for complex missions like **Gaganyaan**.
  - Ensures **reliable performance** in space.
- Nozzle Protection System:**
  - A newly tested **Nozzle Protection System** prevents **flow separation** and **vibrations**, enhancing engine stability and testing outcomes.
- Advanced Combustion Process:**
  - The staged combustion process ensures optimal mixing of LH2 and LOX, improving **engine efficiency** and thrust.

**Significance of Cryogenic Engines in India's Space Program:**

- Boost to Space Missions:**
  - Cryogenic engines provide the necessary thrust for launching **heavy payloads**, enabling missions like **Gaganyaan**, **satellite deployments**, and **interplanetary exploration**.
- Indigenous Development:**
  - Mastery over cryogenic technology enhances **self-reliance**, reducing dependence on **foreign expertise**.
  - India joins an elite group of nations, including **the US, France, Russia, China, and Japan**, capable of developing indigenous cryogenic engines.
- Enhanced Payload Capacity:**
  - The higher **specific impulse** of cryogenic engines allows rockets to carry **heavier payloads**, making them ideal for **advanced space missions**.

**Conclusion:**

The successful test of the **CE20 Cryogenic Engine** showcases ISRO's engineering excellence and highlights India's growing capabilities in **space exploration**. This development strengthens the nation's position in the global space arena, paving the way for future ambitious missions.

## 6 Climate Footprint of Space Exploration

**Context:** The rapid expansion of space exploration has brought environmental impacts—such as rocket emissions and satellite debris—to the forefront, often overlooked by global sustainability frameworks like the **Paris Agreement**. Urgent action is required to address these concerns and ensure a sustainable future in space.



### How Are Space Activities Affecting the Environment?

#### 1. Rocket Emissions:

- **Carbon Dioxide (CO<sub>2</sub>)**, **black carbon**, and **water vapor** are released during rocket launches.
- **Black carbon** absorbs sunlight around 500 times more efficiently than CO<sub>2</sub>, exacerbating **global warming**.
- **Chlorine-based rocket propellants** deplete the **ozone layer**, leading to **increased UV exposure** and disrupting **atmospheric circulation**.

#### 2. Space Debris:

- As of September 2024, there are **19,590 satellites** launched, with **13,230** still in orbit, and **10,200** being operational.
- The **total mass of space objects** exceeds **13,000 tonnes**, contributing significantly to **pollution by space debris** due to **overcrowding in low Earth orbit (LEO)**.
- Non-functional satellites and debris from collisions add to the **growing problem of space junk**, making space increasingly **inaccessible**.
- This debris can **disrupt radio waves** and **sensor accuracy**, affecting critical systems for **disaster tracking, climate monitoring, and communication**.

#### 3. Satellite Manufacturing:

- The **production of satellites** involves **energy-intensive processes**, particularly through the use of **metals and composites**.
- **Satellite propulsion systems** also release additional emissions during **orbital adjustments**.
- Satellites **burn up during re-entry**, releasing **metallic "satellite ash"** which can alter **atmospheric dynamics** and harm the **climate**.

#### 4. Emerging Threats:

- **Space mining**, although not yet operational, poses a potential threat to both **Earth** and **space environments**.
- Increased **industrial activity** in orbit could intensify environmental impacts, compounding the **challenges posed by current space operations**.

### Barriers to Sustainable Space Exploration:

#### 1. Lack of Regulations:

- Space activities are not covered by agreements like the **Paris Accord**, leaving emissions and debris largely unregulated.
- Without **clear guidelines**, the rapid increase in satellites and debris has led to **overcrowded orbits**, making future missions more costly and riskier.
- The **Outer Space Treaty, 1967**, emphasizes **responsible use** but lacks **binding provisions for environmental sustainability**.
- In 2019, the **United Nations Committee on the Peaceful Uses of Outer Space (COPUOS)** adopted **21 voluntary guidelines** for the **long-term sustainability of space activities**. However, the lack of **binding regulations** and **conflicting national and commercial priorities** hinder their implementation, making it challenging to achieve a unified approach to **space sustainability**.

#### 2. Commercial Exploitation of Space:

- **Profit-focused companies** are driving activities such as **space resource recovery** from asteroids, **developing commercial space stations**, and **offering space tourism**.
  - These activities may **undermine sustainability efforts**, as commercial interests often clash with the need for environmental protection.
3. **High Costs:**
- **Developing and implementing sustainable technologies** for space exploration is expensive, including costs related to **debris mitigation**, **sustainable fuel alternatives**, and **long-term missions**.
  - Many of these technologies are still in development and require substantial investment.
4. **Data-Sharing Issues:**
- **Security and commercial interests** often hinder **real-time satellite and debris tracking**, which is crucial for **coordinated space traffic management**.
  - Overcoming **data-sharing resistance** and **building trust** with **security protocols** are key for **effective space traffic management**.

### Where Does India Stand on Space Sustainability?

1. **Private Sector Engagement:**

- The establishment of the **Indian National Space Promotion and Authorization Centre (IN-SPACe)** is expected to boost the role of **private companies**.
- Startups like **Agnikul**, **Skyroot**, and **Dhruva Space** are developing **sustainable satellite launch vehicles** and technologies.
- **Manastu Space Technologies** has delivered the **iBooster Green Propulsion System** to the Defence Research and Development Organisation, which uses **hydrogen peroxide-based fuel** for **safer, cost-effective** satellite operations like **orbit raising** and **deorbiting**.

2. **Space Debris Management:**

- The **Indian Space Research Organisation (ISRO)**'s **Network for Space Objects Tracking and Analysis (NETRA)** project aims to track **space debris**, providing critical data to **protect space assets** and help manage risks.
- This initiative helps manage risks and **prevent Kessler Syndrome**, where collisions create more debris.
- India has also collaborated with the **US** on space object monitoring under a pact signed in 2022.

3. **In-Orbit Servicing:**

- **ISRO** is developing the **SPADX (Space Docking Experiment)** to dock satellites for **refuelling** and other **services**, which will enhance **satellite longevity** and **mission flexibility**.

### Way Forward:

1. **Technological Innovations:**

- **Reusable rockets**, like those developed by **Elon Musk's SpaceX**, reduce **waste** and **costs**.
- **Green hydrogen** and **biofuels** can lower **emissions** in launches.
- **Electric propulsion** is efficient for **low-thrust missions** but not suitable for **heavy-lift operations**.
- **Nuclear propulsion** presents a potential option but carries the risk of **nuclear radiation pollution** in the event of an accident within **Earth's atmosphere**.

2. **Mitigating Orbital Debris:**

- **Biodegradable satellites**, such as Japan's **LignoSat**, where components could disintegrate on re-entry, help reduce space debris.
- Investment in **Autonomous Debris Removal (ADR)** technologies such as **robotic arms** and **lasers** is essential for cleaning up existing debris.
- Deorbiting satellites from **LEO to Geostationary Orbit (GEO)** or **higher orbits** can reduce the **risk of re-entry** into **Earth's atmosphere** and minimize debris accumulation in **LEO**.



### 3. Global Traffic Management:

- A **global system to monitor satellite movements** in real-time would reduce **collision risks** and ensure **safer orbital use**.
- Overcoming **data-sharing resistance** and **building trust** with **security protocols** are key for **effective space traffic management**.

### 4. Policy and Governance:

- Aligning **sustainability goals** with the **Outer Space Treaty** and introducing **binding agreements** under **COPUOS** is essential for **enforcing environmental responsibility** in space.
- Governments can **enforce emission caps, debris mitigation**, and offer **incentives** for **green technologies** through **subsidies** and **penalties** to promote a **sustainable space industry**.

### 5. Public-Private Partnerships:

- Collaboration between **governments** and **private entities** is key to funding **sustainable technologies**.
- Shared **accountability frameworks** ensure **mutual responsibility** for **sustainability** in space.

