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The recent controversy around the Goa government's conflicting claims on tiger presence has revived debates on wildlife conservation, inter-State ecological corridors, and the politics of declaring tiger reserves.

Goa government does a U-turn on 'permanent' tiger presence in State

Jacob Koshy
NEW DELHI

The answer to whether tigers "reside" in Goa depends on who is asking the question. The Goa Government, earlier this year, argued before a Supreme Court-appointed committee that there was "...no permanent presence of tigers" in the State.

However, in a separate matter concerning a dispute involving Goa, Karnataka and Maharashtra over the sharing of water from the Mahadayi river in Goa, it stated the opposite.

"...The State of Goa states that there is evidence to show that tigers in Goa are not merely transient animals, but are a resident population, and the forests around Chorla, Mann and Kankumbi comprise a contiguous tiger landscape corridor, to the Bhimgad Wildlife Sanctuary in Karnataka to its south-east and the Anshi Dandeli Tiger Reserve to its south that has around 35 tigers." The latter appears in a 2018 report of the Mahadayi Water Disputes Tribunal. "Thus, were the flow of Mahadayi river to be impeded," Goa argued, "it would impact the prey base as well as tiger ecosystem".

The issue of tiger presence (or absence) in Goa has come to the fore following the Goa government challenging a July

The Goa government says only three tigers were found through 'camera trapping' during the NTCA survey of 2018. PTI

2023 order of the Bombay High Court that directed the State to declare the Mhadei sanctuary and other connected regions – as recommended by the National Tiger Conservation Authority (NTCA), the nodal Central body tasked with overseeing tiger conservation) – a 'tiger reserve' within three months.

The Goa government filed a special leave petition (SLP) in the Supreme Court challenging this order. Its core arguments in the SLP are that, as per the NTCA guidelines, an area of 800-1,000 sq. kms would have to be declared an inviolate space for a tiger reserve. The area already under protection in the State, in the form of parks and sanctuaries, added up to 745 sq. km. "Therefore, to declare an area larger than the already protected area an inviolate space would be an aberration."

Secondly, the area that would have to be declared a tiger reserve had a "huge population" of about 1,00,000 individuals spread across several villages. Given the paucity of alternative areas to settle them and the 'unwillingness' of this resident population, the move could translate to social unrest.

In terms of tiger presence, it argued that only three tigers were found through 'camera trapping' during the NTCA's tiger estimation survey of 2018. There was "no evidence" that these tigers were "residents" of the area; there were no cubs or young animals either.

"The protected area is only a corridor whereby the tigers transit from Maharashtra to Karnataka or vice versa, and the area of Mhadei is only a route, which is used by tigers to transit," the State argued in its petition. "Such 'transitory presence' of tigers in Mhadei was due to very few deer (as prey), and thus, declaring Mhadei sanctuary as a reserve... would not serve any significant purpose," it said.

SC seeks report
The Supreme Court, this September, directed a Central Empowered Committee of the Union Environment Ministry to hear all the "stakeholders" in the matter and submit a report in "six weeks." The Committee has reportedly sought an extension to file this.

The case traces back to 2011, when the Centre and the NTCA made multiple requests to the State of Goa to notify Mhadei Wildlife Sanctuary (WLS) and certain other adjacent areas as a tiger reserve. But this did not happen.

In January 2021, four tigers were found poisoned following which the Goa Foundation, a non-profit, filed a petition for the region to be declared a tiger reserve. Doing so puts the onus on the State to improve protection measures for conservation of animals.

On September 8, 2025, after counsel for the Goa Foundation informed the top court that some proposals for resorts were being approved in the proposed tiger reserve, the court stayed all such activity till final order and judgment.

Key Analysis

1. Background of the Issue

- Since 2011, the Centre and NTCA have recommended notifying Mhadei Wildlife Sanctuary and adjoining areas in Goa as a tiger reserve.
- Goa has continuously avoided notification despite recurring evidence of tiger movement.
- The matter escalated after four tigers were poisoned in 2021, prompting the Goa Foundation to petition the courts.
- In July 2023, the Bombay High Court directed Goa to declare the area as a tiger reserve within 3 months.
- Goa challenged this order in the Supreme Court through an SLP.

2. Goa's Contradictory Positions

Position 1: Before SC-appointed Committee (2023–24)

- "No permanent presence of tigers in Goa."
- Only 3 tigers captured in 2018 NTCA camera-trap survey.
- No cubs → therefore not a breeding population.
- The Mhadei area is merely a transit corridor, not a habitat.

Position 2: Before Mahadayi Water Disputes Tribunal (2018)

- Goa argued the opposite:
 - Tigers in Goa are resident, not merely transient.
 - Mhadei-Bhimgad-Anshi-Dandeli forms a contiguous tiger landscape.
 - Any alteration of Mahadayi river flow would harm the tiger ecosystem.

Implication

This inconsistency reveals how state governments may shift ecological narratives based on political or legal convenience—water disputes vs. land-use decisions.

3. Core Arguments in Goa's SLP Against Tiger Reserve

A. Ecological Grounds Cited

- NTCA guidelines require 800–1000 sq km of inviolate area for a tiger reserve.
- Goa's protected area is only 745 sq km, hence "inviolate area" cannot be created.

B. Social and Administrative Grounds

- Around 1 lakh people inhabit the proposed area.
- Rehabilitation space is limited and communities are unwilling.
- Fears of social unrest and administrative burden.

C. Scientific Grounds

- Minimal camera-trap sightings; lack of cubs.
- Low prey base (few deer).
- Declaring the area a reserve "would not serve any significant purpose".

4. Centre-State Dynamics & Judicial Oversight

- The SC has directed the Central Empowered Committee (CEC) to examine all issues.
- The CEC has sought more time to submit its report.
- The apex court has stayed all construction and resort approvals in the proposed reserve area until final judgment.

This highlights judicial activism in:

- Environmental protection
- Ensuring scientific integrity in wildlife claims
- Preventing commercial exploitation pending final decisions

5. Wider Environmental and Governance Implications**A. Ecological Corridors**

- The region forms a crucial link between
 - Bhimgad WLS (Karnataka)
 - Anshi-Dandeli Tiger Reserve (Karnataka)
 - Mhadei WLS (Goa)
- Any fragmentation could threaten tiger movement in the Western Ghats, a global biodiversity hotspot.

B. Human–Wildlife Conflict & Community Rights

- Relocation remains a contentious issue across India (seen in Melghat, Sariska, Nagarhole).
- Balancing conservation mandates with tribal and rural livelihoods remains a critical governance challenge.

C. State Incentives

- Declaring a tiger reserve brings:
 - Higher Central funding
 - Stricter land-use restrictions
- Tourism and mining lobbies within the State could influence reluctance.

D. Institutional Issues

- Highlights issues of:
 - Conflicting submissions by State agencies
 - Lack of updated scientific surveys
 - Slow administrative response to NTCA recommendations

Conclusion

The Goa tiger reserve controversy reflects a broader tension between developmental priorities, ecological imperatives, and political calculations. The State's contradictory claims underscore the need for transparent, science-based assessments in environmental litigation. The Supreme Court's ongoing oversight offers an opportunity to ensure that tiger conservation decisions are rooted in ecological integrity rather than administrative convenience. The final judgment will likely set an important precedent on how States must justify or contest wildlife conservation mandates within federal governance frameworks.

UPSC Prelims Practice Question

Ques: With reference to the tiger conservation setup in India, consider the following statements:

1. The National Tiger Conservation Authority (NTCA) can recommend creation of a tiger reserve, but only the State Government can notify it.
2. Declaring a tiger reserve automatically requires relocation of all villages from the core area.
3. The Supreme Court can stay commercial activities in proposed tiger reserve areas.

Which of the above statements is/are correct?

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 1 only
- (d) 1, 2 and 3

Ans : a)

UPSC Mains Practice Question

Ques: Discuss the role of the judiciary in enforcing wildlife conservation in India, with reference to the Supreme Court's intervention in the Goa tiger reserve case. **(150 Words)**

India and Japan are deepening their space cooperation through the Chandrayaan-5/LuPEX mission, a joint lunar polar exploration initiative being undertaken by ISRO and JAXA. A high-level Japanese delegation's recent visit to ISRO facilities reflects growing Indo-Japanese technological partnership and India's ambitious long-term lunar goals, including a lunar sample-return mission and sending an Indian to the Moon by 2040. This collaboration holds significance for GS-3 (Science & Tech), India-Japan relations, and space diplomacy.

Japanese delegation visits ISRO to review status of Chandrayaan-5/LuPEX mission

The Hindu Bureau
BENGALURU

A Japanese delegation recently held discussions with the senior leadership of the Indian Space Research Organisation (ISRO) and visited the facilities of the space agency to review the status of the Chandrayaan-5/LuPEX mission and explore future opportunities.

The Vice-Chair of Japan's Cabinet Committee on National Space Policy Saku Tsuneta called on ISRO Chairman V. Narayanan on November 21 to discuss the status of the Chandrayaan-5/ LuPEX, which is a Joint Lunar Polar Exploration mission between



Progress check: The Japanese delegation with ISRO Chairman V. Narayanan at the headquarters in Bengaluru. SPECIAL ARRANGEMENT

the ISRO and the Japan Aerospace Exploration Agency (JAXA).

The Chandrayaan-5 LuPEX mission is the fifth mission in the Chandrayaan series of lunar missions to study the lunar

volatile materials, including lunar water, in the vicinity of a Permanently Shadowed Region in the lunar South pole.

According to the ISRO, the mission will be launched by JAXA onboard

its H3-24L launch vehicle, carrying the ISRO-made lunar lander, which will carry the MHI, Japan-made lunar rover.

The ISRO is also responsible for developing a few scientific instruments for the mission.

The LUPEX will be a precursor to the ISRO's lunar sample return mission and for sending the first Indian to the moon by 2040.

The Japanese delegation also explored potential opportunities to work together in the field of robotic arm for space stations, launching of scientific satellites, and in supporting researchers and private companies from both nations for joint activities.

Key Analysis

1. What is Chandrayaan-5 / LuPEX?

- LuPEX (Lunar Polar Exploration Mission) is a joint mission by ISRO and JAXA.
- Objective: To explore Permanently Shadowed Regions (PSR) near the lunar South Pole, where water ice is believed to exist.
- Scientific goals:
 - Study lunar volatiles (especially water).
 - Characterise the polar terrain.

- Test long-duration operations in extreme cold zones.

This mission continues India's lunar exploration after Chandrayaan-3's success and takes India into a more advanced, resource-focused phase of lunar science.

2. Responsibilities of ISRO and JAXA

Japan (JAXA)

- Will launch the mission onboard its H3-24L launch vehicle.
- Will provide the MHI-built lunar rover.

India (ISRO)

- Will develop the lunar lander.
- Will design key scientific instruments for the mission.
- Will conduct navigation, landing control, and surface operations.

This division of responsibilities showcases complementary technological strengths—Japan's advanced heavy-lift capability and India's proven landing expertise.

3. Strategic and Scientific Significance

A. Boost to India's future lunar ambitions

- LuPEX will serve as a precursor to:
 - India's lunar sample return mission, and
 - Sending an Indian astronaut to the moon by 2040 (as announced recently).

B. Global relevance

- The lunar South Pole is a hot spot for future sustainable lunar presence.
- Countries including the U.S., China, and Russia are competing to secure lunar water resources.
- The mission places India and Japan as strong collaborative stakeholders in this geopolitical and scientific race.

C. Strengthening Indo–Japan Space Partnership

The Japanese delegation also explored cooperation in:

- Robotic arm development for space stations.
- Launching scientific satellites through shared platforms.

- Supporting private companies and researchers in joint R&D.

This aligns with the broader India–Japan Special Strategic and Global Partnership and strengthens the Indo-Pacific technological ecosystem.

4. Diplomacy, Technology, and Economics

- The collaboration deepens space diplomacy, where India positions itself as a reliable, low-cost, high-capability partner.
- Joint development spreads costs, reduces risk, and enhances innovation.
- Possible spillovers: robotics, autonomous systems, AI, materials science, cryogenic tech.

Conclusion

The visit of the Japanese delegation marks a significant step forward in the Chandrayaan-5/LuPEX programme and reflects the maturing of India–Japan space cooperation. The mission not only enhances India’s scientific capabilities in lunar polar exploration but also contributes to long-term strategic objectives such as a human lunar mission and sample return. For India, LuPEX represents a blend of diplomacy, technology, and ambition—moving it closer to becoming a major player in the future lunar economy and space governance.

UPSC Prelims Practice Question

Ques : With reference to the LuPEX (Lunar Polar Exploration Mission), consider the following statements:

1. It will be launched on Japan’s H3-24L launch vehicle.
2. The lander for the mission is being developed by JAXA.
3. The rover will be manufactured in India by ISRO.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Ans: a)

UPSC Mains Practice Question

Ques : India’s lunar ambitions—from Chandrayaan-3 to LuPEX to a future human mission—show a shift from demonstration to utilisation. Comment. **(250 words)**

Justice Surya Kant was sworn in as the 53rd Chief Justice of India (CJI) at Rashtrapati Bhavan, administered the oath by President Droupadi Murmu. His elevation comes at a crucial time for the Supreme Court, facing a pendency of over 90,000 cases and major constitutional matters such as the Special Intensive Revision (SIR) case. Known for his conciliatory judicial style, CJI Kant is expected to steer the court with a focus on resolution-oriented jurisprudence and a strong emphasis on "Indianness" in judicial reasoning.

Justice Surya Kant takes oath as 53rd Chief Justice

All eyes on the SIR case and pendency; he is seen as a judge who leans more towards gently nudging disputes to a resolution over time rather than taking a confrontational approach

Krishnadas Rajagopal
NEW DELHI

Justice Surya Kant took oath as the 53rd Chief Justice of India at the Rashtrapati Bhavan on Monday.

President Droupadi Murmu swore in Justice Kant merely days after Justice Kant, as a member of the 16th Presidential Reference Bench, advised her that neither she nor the State Governors, while dealing with State Bills, are bound by timelines "imposed" by the Supreme Court as in the April 8 judgment in the Tamil Nadu Governor case.

Justice Kant took the oath of office in Hindi.

Both Chief Justice Kant and his immediate predecessor, Justice B.R. Gavai, was recently lauded by Solicitor General Tushar Mehta for bringing "Indianness" in the courts. Mr. Mehta, in his address, highlighted that their judgment did not refer to foreign precedents of law and drew their reasonings from Indian case laws and legal principles in their verdicts.



President Droupadi Murmu administers the oath of office to Justice Surya Kant as the 53rd Chief Justice of India at Rashtrapati Bhavan.

Chief Justice Kant was appointed to the Supreme Court on the same day as Justice Gavai, on May 24, 2019.

After the oath ceremony, in an act of camaraderie and respect for the office, Justice Gavai reserved the official vehicle designated for the Chief Justice of India for Chief Justice Kant, ensuring that his successor's maiden journey to the Supreme Court as CJI was in the official car itself.

The Chief Justice is seen as a judge who leans more towards gently nudging disputes to a resolution over

time rather than taking a confrontational approach. Justice (as he was then) Kant had resolved the farmers' agitation from the Bench by prodding both sides – the protesting farmers and the Union government – to the negotiating table at a critical point when matters were spiralling with farmers' leaders on an indefinite strike on the borders of Delhi.

Close watch on SIR

Chief Justice Kant's tenure would be closely watched for his handling of the Special Intensive Revision (SIR) case. So far, the judi-

cial interventions of his Bench have made the SIR procedure accessible to citizens. But it is yet to take up the basic issue of whether the exercise itself is constitutional or not. Meanwhile, the SIR has expanded from Bihar to its second phase to 12 States and Union Territories and covering 51 crore people.

Justice Kant has been a part of several impactful decisions of the apex court, including the abrogation of Article 370 of the Constitution which removed the special status to the erstwhile State of Jammu & Kashmir.

Justice Kant was also part of the Bench which held the electoral bonds scheme unconstitutional. He was a member of the Benches which heard the Pegasus spyware case and suspension of the sedition law.

The Chief Justice, who has a tenure of little over a year till his retirement on February 2, 2027, has said his topmost priority would be to bring the pendency of over 90,000 cases in the top court to a manageable number.

Key Analysis

1. Background and Oath Ceremony

- Justice Surya Kant took oath in Hindi, symbolising emphasis on Indian languages in constitutional institutions.
- His appointment follows his role in the 16th Presidential Reference Bench, where he advised that Governors and the President are not bound by judicially imposed timelines while handling State Bills.
- He succeeded Justice B.R. Gavai, who symbolically ensured that the official CJI vehicle was reserved for Justice Kant — an act of institutional decorum.

2. Judicial Philosophy: “Resolution Over Confrontation”

- Justice Kant is known for a non-adversarial approach, preferring negotiation and mediated settlement over confrontational litigation.
- Example: During the farmers’ agitation, he nudged both the Union government and farmer groups towards dialogue when tensions were escalating at the Delhi borders.

This approach may influence how he handles contentious political and constitutional disputes.

3. Key Cases and Judicial Contributions

Justice Surya Kant has been part of several landmark Supreme Court verdicts:

A. Article 370 Verdict

- Part of the Bench upholding the abrogation of Article 370, impacting the constitutional status of Jammu & Kashmir.

B. Electoral Bonds Judgment

- Part of the Bench that struck down the electoral bonds scheme as unconstitutional.

C. Pegasus Spyware Case

- Member of the Bench that ordered an independent inquiry into allegations of Pegasus surveillance.

D. Suspension of the Sedition Law

- Part of deliberations that led to keeping Section 124A (sedition) in abeyance.

These verdicts highlight his involvement in decisions with deep ramifications for federalism, privacy, political finance, and civil liberties.

4. The SIR Case: The Most Closely Watched Matter

What is the SIR?

- Special Intensive Revision (SIR) relates to large-scale verification of voter lists.
- Began in Bihar; now extended to 12 States/UTs, covering 51 crore citizens.

Concerns

- Potential constitutional issues involving:
 - Privacy
 - Federal powers
 - Risk of disenfranchisement
 - Data accuracy and safeguards

CJI Surya Kant’s Role

- His Bench has so far focused on making the SIR process more accessible and transparent.
- The major question — Is SIR constitutional? — remains to be decided.
- His approach will shape the future of voter verification and electoral reforms.

5. Priorities as CJI

A. Reducing Pendency

- With over 90,000 cases pending, he has made case management his top priority.
- Expected measures:
 - Better use of technology
 - Streamlined procedures
 - Quicker constitution of Benches
 - Emphasis on alternative dispute resolution

B. Indianness in Judicial Reasoning

- Justice Kant and Justice Gavai have been lauded for relying on Indian precedents and legal philosophy, reducing dependence on foreign jurisprudence.

C. Institutional Harmony

- Seen as someone who fosters consensus, which may improve:
 - Bench cohesion
 - Centre–State judicial coordination
 - Smooth functioning of the collegium

Conclusion

Justice Surya Kant's tenure as the 53rd CJI comes at a pivotal moment, with the Supreme Court confronting heavy pendency and significant constitutional cases. His consensual judicial style, focus on domestic jurisprudence, and prior experience in politically sensitive matters suggest a tenure oriented toward institutional stability, case efficiency, and balanced constitutional interpretation. How he handles the ongoing SIR litigation and manages judicial backlog will likely define the legacy of his time in office.

UPSC Prelims Practice Question

Ques: With reference to the office of the Chief Justice of India (CJI), consider the following statements:

1. The Constitution provides a fixed tenure of five years for the CJI.
2. The CJI is appointed by the President.
3. Seniority convention is constitutionally mandated for the appointment of the CJI.

Which of the statements given above is/are correct?

- (a) 2 only (b) 1 and 3 only
(c) 2 and 3 only (d) 1, 2 and 3

Ans: a)

INS Mahe, the first vessel of the Mahe-class Anti-Submarine Warfare Shallow Water Craft (ASW-SWC), was commissioned at Naval Dockyard Mumbai. With 80% indigenous content, the ship strengthens India's push for self-reliance in defence manufacturing under Aatmanirbhar Bharat. The commissioning—presided over uniquely by the Chief of Army Staff, General Upendra Dwivedi—symbolises growing jointness and interoperability among the three services.

Navy gets 'silent hunter', 80% home-grown *Mahe*

Army chief General Upendra Dwivedi launches warship, says 'true strength' of the armed forces lies in 'synergy'; adds that Army, Navy and Air Force form 'the trinity of India's strategic strength'

The Hindu Bureau
MUMBAI

INS Mahe, India's first Mahe-class anti-submarine warfare shallow watercraft, was commissioned at the Naval Dockyard by General Upendra Dwivedi, Chief of the Army Staff, on Monday.

With over 80% indigenous components, the ship is another step in the Indian Navy's efforts towards achieving self-reliance, the Navy said. The induction was done after long, rigorous trials for over two years, officials said. Due to its stealth and unyielding readiness, *INS Mahe's* motto is 'Silent Hunters'.

This was the first time an Army chief presided over the commissioning of a naval warship. General Dwivedi said that the true strength of the Indian armed forces lay in synergy among the three services.

"In the age of multi-domain operations, the country's ability to act in concert from the depths of the ocean to the highest frontier will determine the security influence of the In-



INS Mahe, the Mahe-class anti-submarine warfare shallow watercraft at the Naval Dockyard in Mumbai. EMMANUAL YOGINI

dian Republic," he said, adding that Operation Sindoor showcased the seamless harmony between the services.

Major transformation

The Army chief noted that the force is undergoing a major transformation, with jointness and integration serving as key pillars.

"As said by Helen Keller, alone we can do so little. Together we can do so much. So, as a soldier, we are standing among seafarers... The sea, land, and the skies from a single continuum of national security.

And together, the Army, Navy and Air Force form the trinity of India's strategic strength," General Dwivedi said.

INS Mahe, the lead ship of eight vessels in its class, has been designed and built by Cochin Shipyard Limited.

It will form the first line of coastal defence, integrating seamlessly with larger surface combatants, submarines, and aviation assets to maintain constant vigilance over India's maritime areas of operation.

"Today's ceremony not only marks the induction

of a potent new platform to a maritime order of battle, but also reaffirms our nation's increasing capability to design, construct, and field complex combatants with indigenous technology.

This commissioning will significantly augment the Indian Navy's capability to ensure near-sea dominance, strengthen the coastal security grid and safeguard our maritime interests across the vast expanse of our littorals," General Dwivedi said.

Listing out the abilities of the warship, a government statement said, "The ship's combat suite blends multiple systems into a compact yet potent network. She is specially designed to undertake anti-submarine operations in coastal and shallow waters. Fitted with advanced weapons, sensors, and communication systems enabling it to detect, track, and neutralise sub-surface threats with precision, the ship can sustain prolonged operations in shallow waters and features technologically advanced machinery and control systems."

Key Analysis

1. Strategic Significance of INS Mahe

A. Strengthening Coastal Defence

- INS Mahe is designed for anti-submarine warfare in shallow and coastal waters, crucial for:
 - tracking and neutralising enemy submarines near India's littorals,
 - securing sea lanes of communication,
 - supporting harbour defence and EEZ surveillance.

B. First Line of Defence

- The ship integrates with:
 - larger surface combatants,
 - submarines,
 - naval aviation assets, creating a layered maritime security grid.

C. Indigenous Capabilities

- Designed and built by Cochin Shipyard Limited.
- Incorporates advanced Indian systems, sensors, communication architecture and machinery.
- Reinforces India's growing competence in designing complex naval platforms, following earlier projects like P-15B destroyers and P-17A frigates.

2. "Silent Hunters": Technological Features

- Stealth-enhanced design, low acoustic signature.
- Advanced sonar, combat management system, and underwater detection tech.
- Ability to sustain prolonged operations in shallow waters.
- Specially designed for:
 - tracking sub-surface threats,
 - neutralising hostile underwater assets (e.g., mini-sub, divers, UUVs).

This makes it vital for countering increasing submarine activity in the Indian Ocean.

3. Jointness and Tri-Service Synergy

A. Historic Moment

- First time an Army Chief presided over the commissioning of a naval warship—highlighting the shift toward integrated operations.

B. General Dwivedi's Message

- Emphasised that the Army, Navy, and Air Force form the "trinity of India's strategic strength."
- Recalled Operation Sindoor as an example of seamless jointness.
- Stressed that multi-domain warfare requires synergised action from sea, land, and air.

C. Broader Defence Reforms

- Aligns with ongoing initiatives:

- creation of theatre commands,
- increased interoperability,
- common procurement and integrated logistics.

4. Broader Implications for National Security

A. Maritime Threat Environment

- Increased Chinese submarine presence in the Indian Ocean makes ASW platforms critical.
- Protection of ports, economic assets, and coastal infrastructure is becoming central to India's maritime strategy.

B. Complements India's "Near Sea Dominance" Strategy

- INS Mahe contributes to:
 - enhanced coastal surveillance,
 - littoral warfare capability,
 - denial of hostile underwater access,
 - strengthening deterrence posture.

C. Fleet Expansion

- Mahe is the lead ship of eight in its class—indicating a structured plan to expand ASW capacity.

Conclusion

INS Mahe's induction marks a significant milestone in India's maritime security architecture. With its indigenous design and advanced anti-submarine capabilities, it strengthens the Navy's ability to maintain near-coastal dominance and protect strategic interests in the Indian Ocean region. Equally important is the symbolic emphasis on tri-service synergy, reflecting India's transition toward integrated defence preparedness in an era of multi-domain threats. The Mahe-class vessels will play a pivotal role in building a modern, self-reliant, and coordinated maritime defence posture.

UPSC Prelims Practice Question

Ques: INS Mahe is primarily designed for operations in:

- (a) Deep-sea blue-water anti-submarine operations
- (b) Coastal and shallow-water anti-submarine operations
- (c) Amphibious landing operations
- (d) Long-range carrier escort missions

Ans : b)

Road dust, primarily consisting of PM_{10} and coarse particles, remains one of the largest contributors to urban air pollution in India, especially in North India. Under the National Clean Air Programme (NCAP) — which aims for a 40% reduction in PM_{10} levels by 2025-26 — controlling road dust is a priority. Despite significant financial investment and institutional mechanisms, the results have been uneven, raising questions about governance, planning, and scientific implementation.

Where does road dust settle in India's efforts to clean its air?

Dust pollution is mainly caused by unscientific practices during the development of roads and maintenance; the collected dust is typically discarded in landfills or on the roadsides, from where the wind easily carries it back into the cities, rendering the entire process of sweeping ineffective

Charu Tyagi
Swagata Dey

Road dust mainly comprises PM_{10} and coarse particles and forms a large share of the air we breathe. With the National Clean Air Programme (NCAP) aiming for a 40% reduction in PM_{10} by 2025-2026, reducing road dust is an urgent priority.

This is reinforced by source apportionment studies across 17 non-attainment cities that have found road dust to be a major contributor to PM_{10} (20-52%) as well as $PM_{2.5}$ (8-25%) particles. IIT Delhi researchers have also recorded that streets in 32 cities across Himachal Pradesh, Punjab, Rajasthan, Uttar Pradesh, and Telangana vary widely vis-à-vis their silt loads, from 0.2 g/m² to 11.2 g/m²; Delhi averages 14.47 g/m².

Overall, cities in North India have heavier silt loads and are thus dustier than their southern counterparts.

In response, governments have already invested heavily in fighting dust. Per a 2024 report by the Centre for Science and Environment, ₹19,711 crore was allocated to 131 cities between 2019 and 2025 under the NCAP to improve air quality. By November 2023, nearly 64% of the total fund had been spent on road dust control, far more than what was spent on tackling biomass burning, vehicular pollution, and capacity-building efforts.

While this suggests that there's a prioritisation, it's essential to assess effectiveness on the ground.

Policy landscape
Efforts to control road dust have been underway for several years. In January 2018, the Union Environment Ministry issued a notification to mitigate dust at construction sites, mandating paving and blacktopping of roads leading up to such sites. In 2021, the Commission for Air Quality Management in the National Capital Region and Adjoining Areas (CAQM) recommended the establishment of 'Dust Control and Management Cells'. Following statutory directions from the CAQM, 68 Cells were set up to undertake a comprehensive set of actions, including identifying dust hotspots, paving and repairing roads and roadsides, greening central verges and roadsides, and deploying mechanised road-sweeping machines and anti-smog guns. The CAQM periodically reviews these activities.

However, dust from roads and open areas remains a major driver of poor air quality in Delhi-NCR.

To strengthen its approach, the CAQM initiated a study called 'Addressing vehicular traffic-induced road dust resuspension for air quality action plans' in 2025. In the pilot phase, 24% of 82 km of assessed road length was found to be in poor condition, 42% moderate, and 34% good. The CAQM also set up a committee to develop a 'Standard Framework for Controlling Dust Pollution from Roads and Open Areas'.

Both initiatives recommended multiple activities, including paving and greening, for the NCR states as well as additional steps such as digital mapping of all roads in Delhi-NCR and conducting comprehensive road condition surveys.

As is evident, these efforts were focused on Delhi-NCR whereas similar measures and institutional mechanisms are needed across India. Indeed, the Environment (Protection) Act 1986 and



Efforts to control road dust have been underway in India for several years. Representative photo. SUBHASH DUTTA/ANUPRA

the Air (Prevention and Control of Pollution) Act 1986 make broad references to road dust management. The Construction and Demolition Waste Management Rules 2025 don't outline specific regulations addressing road dust control at the national scale, however. There are also no standard operating procedures to scientifically dispose of the dust collected by manual and mechanised sweeping to prevent resuspension.

Jurisdictional puzzle

While the NCAP, the CAQM guidelines, and city action plans prioritise control options such as paving roads and roadsides, sprinkling water, and so on, the outcomes remain uneven.

Even with 64% of the total NCAP fund spent on road repair and maintenance, 29 cities have reported an increase in PM_{10} concentrations. Of the 68 cities where the local PM_{10} concentration dropped, 61 were above the National Ambient Air Quality Standards, pointing to the limited effectiveness of extant interventions.

One major challenge is fragmented jurisdiction.

Under the NCAP, municipal corporations and State Pollution Control Boards are required to curb road dust. In practice, however, the responsibility is split across multiple agencies. In Delhi, 12 agencies — including the Municipal Corporation, the Delhi Development Authority, the Central Public Works Department, and the National Highways Authority of India — maintain roads. Similarly, 18 agencies are involved in Uttar Pradesh, 22 in Haryana, and 16 in Rajasthan. Without clearly demarcated roles, funds and accountability become

Even with 64% of the NCAP fund spent on maintenance, 29 cities reported an increase in PM_{10} concentrations. Of the 68 cities where local PM_{10} concentration dropped, 61 were above the National Ambient Air Quality Standards

diffused. Operational constraints add to the problem. Of Delhi's total road length of 15,000 km, only 8,000 km has been identified for mechanised sweeping. Around 200 mechanised road-sweeping machines (each operating at 40 km/hr) are required to clean this stretch every day. Yet the number of such machines in Delhi is only 85. This gap is much wider in other cities, underscoring the need to properly estimate road length and for machine mapping. Road dust management guidelines should also be established to define the appropriate type of cleaning and maintenance machinery based on road width, surface type, traffic conditions, debris characteristics, water availability, and seasonal variations.

Finally, to ensure agencies coordinate better, a GIS-based platform should be created to allow them to monitor and resolve complaints in real time, thus improving accountability. Such a system can be integrated with existing applications, such as the Green Delhi App and Swachhata App, to improve coordination and response.

Practical measures

Dust pollution is mainly caused by unscientific practices during road

development and maintenance. The collected dust is typically discarded in landfills or on roadsides, from where the wind easily carries it back into cities, rendering the entire sweeping process ineffective.

Dust suppressant chemicals such as calcium chloride, magnesium chloride, and natural polymer-based agents (e.g. lignosulphate and bitumen-based emulsions) are widely available. However, their effectiveness and impact on soil and road health aren't well documented. We need scientifically informed mitigation strategies, including guidelines for using dust suppressants and scientific disposal mechanisms for collection.

Addressing road and open-area dust across India will require a holistic and time-bound approach, embedded within a long-term, sustainable urban planning framework.

A comprehensive, science-based regulatory mechanism for cleaner road construction and maintenance, considering open roadsides and air quality as critical components of infrastructure development plans, is essential.

Thoughtfully designed and consistently implemented dust control strategies can significantly enhance air quality, protect public health, and help build more resilient and liveable cities.

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Key Analysis

1. Extent of the Problem

- Road dust contributes 20–52% of PM_{10} and 8–25% of $PM_{2.5}$ in many non-attainment cities.

- Silt load varies drastically: 0.2 g/m^2 to 111 g/m^2 , with Delhi averaging 14.47 g/m^2 — among the highest.
- North Indian cities have significantly heavier silt loads than southern ones, due to dry climate, high construction intensity, and poor road maintenance.

2. Policy and Institutional Responses

A. Government Actions So Far

- 2018 Notification: Required paving/blacktopping of roads leading to construction sites.
- 2021–23: CAQM recommended Dust Control and Management Cells; 68 such cells set up in NCR.
- Measures include:
 - Identifying dust hotspots
 - Paving and repairing roads
 - Greening road verges
 - Mechanised sweeping
 - Anti-smog guns

B. Major Financial Push

- Under NCAP (2019–2025), ₹19,711 crore allocated to 131 cities.
- 64% of the amount spent on road dust control alone — much more than on biomass burning or vehicular pollution.

C. New Initiatives

- CAQM study on vehicular-induced dust resuspension (2025) found:
 - 24% of roads = poor condition
 - 42% = moderate
 - 34% = good
- A committee is creating a Standard Framework for dust control and road mapping.

But most of these efforts are Delhi-NCR centric, lacking uniform national implementation.

3. Persistent Challenges

A. Fragmented Jurisdiction

- Multiple agencies maintain roads, causing diffused accountability:
 - Delhi: 12 agencies
 - UP: 18
 - Haryana: 22
 - Rajasthan: 16
- Overlapping responsibilities delay maintenance and disrupt coordination.

B. Operational Gaps

- Delhi needs 200+ mechanised sweepers; has only 85.
- Only 8,000 km out of 19,000 km are identified for mechanised sweeping.

C. Inefficient Dust Disposal

- Collected dust is dumped in:
 - landfills
 - roadside margins

Wind reintroduces it into the air — making sweeping ineffective.

D. Lack of National Guidelines

- No standard operating procedure for:
 - dust disposal
 - type of sweeping machine required
 - use of dust suppressants
- C&D Waste Rules, 2016 (update 2025 after reprint), do not specify road dust management norms.

4. Why PM₁₀ Levels Still Rise

- Despite high spending, 29 cities saw rising PM₁₀.
- 61 out of 68 cities with reductions still exceed NAAQS limits.

- Indicates:
 - poor road maintenance
 - ineffective sweeping
 - incomplete coverage
 - weak enforcement
 - climate conditions favouring dust resuspension

5. What Needs to Change (Way Forward)

A. Governance Reforms

- Clear demarcation of roles among agencies.
- GIS-based platform for real-time monitoring of road maintenance and complaints.
- Integration with Green Delhi App, Swachhata App.

B. Scientific Road Management

- Standard guidelines for:
 - road design & surfacing
 - dust suppressants
 - disposal of collected dust
- Match machinery to road width, traffic load, season, and debris type.

C. National-Level Expansion

- Extend NCR approaches to all non-attainment cities.
- Make road dust management part of long-term urban planning, not emergency measures.

D. Strengthen Infrastructure

- Increase mechanised sweeping
- Ensure proper pothole repair
- Greening and stabilisation of road shoulders

Conclusion

Road dust continues to undermine India's clean air efforts despite substantial financial investments and targeted interventions under NCAP and CAQM. Fragmented jurisdiction, poor maintenance, unscientific disposal practices, and lack of national guidelines have limited impact. A country-wide, science-driven, coordinated framework—integrated with urban planning—is essential to sustainably reduce road dust, protect public health, and meet India's clean air targets. Thoughtful implementation, accountability, and technological solutions will be key to building livable and resilient Indian cities.

UPSC Prelims Practice Question

Ques: Consider the following statements regarding road dust pollution in India:

1. Road dust contributes more to PM₁₀ pollution than to PM_{2.5} pollution in many Indian cities.
2. Cities in Southern India generally have higher silt load on roads than cities in Northern India.
3. Under NCAP, more than half of the total funds released so far have been spent on road dust control.

Which of the statements are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: c)

UPSC Mains Practice Question

Ques: Discuss why Northern Indian cities remain dustier than Southern Indian cities despite similar policy frameworks. Suggest region-specific solutions. **(150 Words)**

What does the SC's advisory opinion imply?

What were the questions raised by the Presidential reference as a result of a judgment delivered in April 2025? What were the key points delivered by the Supreme Court in its opinion? Should Governors act on the aid and advice of the Council of Ministers?

EXPLAINER

Rangarajan.R

The story so far:

The Supreme Court has provided its opinion on a Presidential reference made under Article 143. In its opinion, it has largely negated the decision of a two-judge Bench that was delivered in April 2025.

What was the Presidential reference?

The current reference is the result of a two-judge Bench judgment in *State of Tamil Nadu versus Governor of Tamil Nadu* in April 2025, that had specified a timeline of three months for Governors and the President to act on Bills passed by State legislatures. The court held that decisions by Governors and the President on such Bills are subject to judicial review. It had exercised its extraordinary power under Article 142 and granted 'deemed assent' to Bills passed by Tamil Nadu assembly that were not assented to by the Governor.

The present reference had raised 14 questions, primarily surrounding the interpretation of Articles 200 and 201, for the court's opinion. These questions deal with the authority of the courts to prescribe timelines when they are not specified in the Constitution. The government had questioned whether the actions of Governors and the President can be made justiciable at a stage prior to the enactment of a Bill into a law. The reference also sought an opinion on the extent of powers that can be exercised by the Supreme Court under Article 142.

What is the current opinion?

A five-judge Bench of the top Court delivered its opinion on the questions raised. It stated that this reference was a 'functional reference', that strikes at the root of day-to-day functioning of constitutional functionaries and the interplay between State legislature, Governor and the President. Key points of



The Supreme Court of India. GETTY IMAGES

the opinion are summarised below.

First, the Governor has three constitutional options under Article 200 when a Bill passed by State legislature is presented for his/her assent, namely to assent, or reserve the Bill for consideration of the President, or withhold assent and return the Bill to legislature with comments. Second, the Governor enjoys discretion in choosing from these three options and is not bound by the aid and advice of the Council of Ministers. Third, the discharge of functions by the Governor under Article 200 is not justiciable but in case of glaring circumstances of prolonged and unexplained inaction, the court can issue a limited mandamus for the Governor to discharge his/her function on Bills presented. Fourth, in the absence of

constitutionally prescribed time limits, the court cannot judicially prescribe timelines for action by the President or Governor. Fifth, the decisions of the President and Governor under Articles 201 and 200 respectively are not justiciable before a Bill is enacted into a law. Finally, the powers of the Supreme Court under Article 142 cannot substitute the powers vested on the President/Governor under the Constitution. Hence, there is no allowance for the concept of 'deemed assent' of Bills.

What are the issues?

The Sarkaria Commission (1987), had opined that it is only the reservation of Bills for consideration of the President, that too under rare cases of patent

unconstitutionality, that can be implied as a discretionary power of the Governor. The Supreme Court in various cases including in *Shamsher Singh* (1974) and *Nabam Rebia* (2016), had held that the Governors should act on the aid and advice of the Council of Ministers. However, in the present opinion, the court has interpreted these cases to conclude that actions under Article 200, with respect to a Bill presented for assent, fall under the discretionary powers of the Governor. This has the potential to derail the legislative intent of popularly elected State governments.

With respect to time limits, the Punchhi Commission (2010), had recommended that the Governor should take a decision with respect to a Bill presented for his/her assent within a period of six months. The court in its own judgment in the *K. M. Singh* case (2020), had stipulated a time limit of three months for Speakers to decide on disqualification petitions though no time limit has been prescribed in the Constitution. The verdict of the division bench in the *State of Tamil Nadu* case to provide time limits to Governors and the President was a purposive and progressive interpretation of the Constitution. The current opinion has negated this position.

What can be the way forward?

The underlying disease that has plagued our federal set up has been the politicisation of the gubernatorial post. The Governor acts as an appointee of the Centre for maintaining unity and integrity of the nation. However, federalism is also a basic feature of our Constitution. This opinion should not become an alibi for the Governor's office to thwart the policies of popularly elected houses in the States. The Governors should display responsible urgency in providing assent to Bills passed by State legislatures.

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THE GIST

The current reference is the result of the judgment in *State of Tamil Nadu versus Governor of Tamil Nadu* that had specified a timeline of three months for Governors and the President to act on Bills passed by State legislatures.

The present reference had raised 14 questions, primarily surrounding the interpretation of Articles 200 and 201, for the court's opinion.

With respect to time limits, the Punchhi Commission (2010), had recommended that the Governor should take a decision with respect to a Bill presented for his/her assent within a period of six months.

GS. Paper 2 Indian Polity

UPSC Mains Practice Question : Critically analyse the Supreme Court's view that the Governor is not bound by the aid and advice of the Council of Ministers while exercising powers under Article 200. How does this compare with earlier judgments such as *Shamsher Singh* (1974) and *Nabam Rebia* (2016)? (250 words)

Context :

In November 2025, a five-judge Bench of the Supreme Court delivered an advisory opinion under Article 143, responding to a Presidential Reference that emerged after a controversial April 2025 two-judge Bench judgment. The earlier judgment had imposed a three-month timeline on Governors and the President to act on Bills and even granted "deemed assent" to certain Tamil Nadu Bills stuck with the Governor.

The current advisory opinion overrules the essence of that judgment and re-examines the constitutional relationship between elected State governments and the nominal executive (Governor/President), making it a landmark development in Centre–State relations and federalism.

Background: What Led to the Presidential Reference?

The April 2025 judgment (State of Tamil Nadu vs Governor of Tamil Nadu):

- Fixed a 3-month timeline for Governors/President to act on Bills.
- Held that their decisions on Bills are judicially reviewable.
- Using Article 142, the Court granted deemed assent to Bills pending with the Governor.

Why was a Presidential Reference sought?

The Union Government disagreed and sought clarity on:

1. Whether courts can prescribe timelines when the Constitution is silent.
2. Whether decisions of Governors/President before enactment of Bills are justiciable.
3. Whether the Supreme Court can use Article 142 to grant deemed assent.
4. Whether functions under Articles 200–201 fall under Governor’s discretion or must be based on aid and advice of the Council of Ministers.

A total of 14 questions were placed before the Court.

Supreme Court’s Key Findings (Advisory Opinion)

1. Governor has three constitutional options under Article 200

When a Bill is presented:

- Assent, OR
- Withhold assent and return the Bill with comments, OR
- Reserve the Bill for President’s consideration.

2. Governor may exercise discretion in choosing among these options

The Court held:

- For actions under Article 200, the Governor is not bound by the aid and advice of the Council of Ministers.
- This marks a major shift from earlier precedents (Shamsher Singh, Nabam Rebia).

3. Actions under Articles 200 and 201 are not justiciable

- Courts cannot interfere before a Bill becomes law.
- But in cases of prolonged, unexplained inaction, the Court may issue a limited mandamus to “ensure performance,” without dictating how to decide.

4. Courts cannot impose time limits

- Since the Constitution prescribes no timeline, judiciary cannot create one.
- This directly negates the April 2025 three-month timeline ruling.

5. No “deemed assent”

- The Supreme Court stated that its Article 142 powers cannot substitute constitutional powers vested in the President/Governor.
- Therefore, the concept of deemed assent is unconstitutional.

Issues and Concerns Highlighted

1. Discretion under Article 200 is controversial

- Sarkaria Commission (1987): Governor’s discretionary power should be limited only to cases of patent unconstitutionality.
- Earlier SC rulings emphasised acting on aid and advice (Shamsher Singh; Nabam Rebia).
- The new interpretation risks enabling Governors to delay or obstruct elected State governments.

2. Absence of timelines encourages delays

- Punchhi Commission (2010) recommended a 6-month window.
- Judicially mandated timelines existed elsewhere (e.g., K.M. Singh, 2020 for Speakers).
- Denying timelines may weaken legislative supremacy and hamper governance.

3. Federalism concerns

- Governors are appointed by the Centre, but act within States.
- Excessive discretion can distort the delicate federal balance.

Implications for Centre–State Relations and Governance

1. Strengthening Governor’s discretion

- May embolden Governors to withhold or delay assent for political reasons.
- Potential friction with elected State governments.

2. Limiting judicial oversight

- Reduces judiciary's ability to ensure timely legislative functioning.

3. Greater need for political and administrative reforms

- Reforms in Governor's appointment, tenure, and accountability become more urgent.

4. Risk of legislative paralysis

- If the Governor withholds assent without acting, Bills can be indefinitely stalled.

Conclusion

The Supreme Court's advisory opinion reasserts the formal constitutional position, giving significant discretion to Governors under Articles 200–201 while restricting judicial intervention and denying the concept of deemed assent. Although constitutionally conservative, this opinion raises concerns about executive overreach, political misuse, and threats to the federal balance, especially where Governors and State governments belong to rival political affiliations.

Going forward, the responsibility lies with Governors to exercise discretion with constitutional morality, restraint, and responsible urgency, as the health of Indian federalism depends not only on strict constitutional text but also on the spirit in which constitutional offices operate.
