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Urban Indian private schools at risk of proximity to toxic lead sites: report

A study has found that 90% of private schools in New Delhi are located near a site contaminated with lead, mercury, arsenic, and/or pesticides; as opposed to developed countries, the study found that in low- and middle-income countries, urban schools are 4- to 28-times more likely than rural schools to be near a toxic site

Monika Mondal
NEW DELHI

In high-income countries like the U.S. and the U.K., it is well-established that people who live in poorer and marginalised localities are more exposed to pollution than those in wealthier neighbourhoods. According to a recent report, that pattern seems to be reversed in low and middle income countries (LMIC) like India.

A report, titled 'Schools in the Shadow of Toxic Sites: Pollution Proximity in Low- and Middle-Income Countries', by the Center for Global Development (CGD) looked at how close 2,840 schools were to toxic sites in 17 countries. It concluded that 10% of schools in LMICs lie within 5 km of a documented toxic site, especially in urban areas.

And of all the world's capital cities, New Delhi topped the list, with more than 90% of its private schools located near a site contaminated with lead, mercury, cadmium, arsenic, and/or pesticides.

When exposed to such contaminants, children in particular develop higher risk of heart and kidney diseases as well as of irreversible learning and cognitive disabilities. According to the World Bank, lead exposure during childhood alone costs LMICs \$1 trillion a year.

'Equally exposed to contamination'

While lead exists naturally in the deep layers of the earth, no amount of lead exposure is safe for humans. Once it enters the body, it can stay silently stuck to the bones, mimicking calcium. When mixed with blood, it can lead to severe kidney and heart problems. In individuals showing no acute symptoms, it can spike blood pressure and lead to sudden heart attacks.

Among children, lead can be a powerful neurotoxin that degrades myelin, the protective outer layer of the brain, and hampers brain cell connections.

In the last few decades, more and more studies from both developed and developing countries have linked lead exposure to shortened attention spans, heightened aggression, behavioural disorders, and a permanent drop in IQ.

"But we did not know where exactly the problem was," Lee Crawford, the report's author and a researcher at the CGD, London.

For the analysis, Mr. Crawford mapped 2.6 million schools to 11,301 documented toxic sites across Mexico, India, Ghana, Kenya, Armenia, and 12 other countries. While the contamination was severe within a few metres of a site, pollutants do not remain there forever. People living as far as 5 km from a toxic site have shown to have elevated blood lead levels as well. "If you look at household lead



Stripping scrapped laptops and air conditioners for metal frequently involves burning away rubber wire casings, releasing lead, mercury, and cadmium into the air. When exposed to such contaminants, children develop higher risk of heart and kidney diseases as well as of cognitive disabilities. AFP

exposure, the poorest are slightly more likely to be exposed than the richest, but since lead exposure can be impactful within 5 km of radius, everyone who lives and breathes in the same air is equally exposed to the contamination," Mr. Crawford said.

The study found 9.7% of schools in the sample were within 5 km of a contaminated site. As a result, "Nearly a billion children have some lead exposure globally. And we know that a big share of that comes from polluted sites, many of them lead-battery recycling," Mr. Crawford said.

As opposed to developed countries, where polluting sites lie where public opposition is weakest, the study found that in LMICs, urban schools are 4- to 28-times more likely than rural schools to be near a toxic site. "The results are a bit surprising," Mr. Crawford said.

But it makes sense with the urban clustering. If you don't have good regulation of where recycling can happen, then it happens in the most convenient places, which is where people are."

Paradox of development, recycling

Lead-acid batteries are used to start most petrol and diesel motor engines; lead is also present in smaller quantities in the electrical components of photovoltaic

cells, wind turbines, and as part of back-up power supply systems. These batteries alone contribute to 86% of global lead consumption.

Lead acid batteries are also popular because they are cheap, rechargeable, and easy to recycle. The metal melts at 327° C, a temperature that can be achieved using a blowtorch in a backyard. Thus, numerous informal enterprises have erupted in India that simply break open old batteries, isolate the lead-containing parts, and toss them in a furnace. The liquid lead is then filtered out and recast into ingots for new batteries.

But without a safe, closed-loop management system, the lead leaches into the soil and can enter human bodies through food, water, and the air.

In developed countries, lead is generally recycled under strict guidelines and with restrictions, and costs tens of millions of dollars. But in LMICs, where enforcement is weak and labour is cheap, a large proportion of recycling happens in backyards.

Thus, in India, even though there are more than 350 well-equipped recycling units, some 90% of the waste ends up in the informal network, where profits are also higher.

As per the report, this network is now

estimated to be responsible for around 33% of the world's lead poisoning burden. In LMICs, this burden is equivalent to 80 lakh disability-adjusted life years or 8 lakh annual deaths.

'An invisible problem'

Mr. Crawford said variables like a school being private, secondary or single-sex all correlated to some degree with higher pollution exposure simply because they were clustered in cities. New Delhi had 91.2% of schools within 5 km of a toxic site; it was followed by Manila (86%), Nairobi (71%), Accra (67%), and Jakarta (51%). This clustering is not inevitable, however: Mr. Crawford's analysis also found that Mexico City, despite its large size and high population density, had almost no toxic-site contamination because its industrial manufacturing zones were successfully regulated and separated from the urban core.

"Lead is an invisible problem that's easy to ignore," Mr. Crawford said. "But badly polluted sites can be regulated, closed down or moved out of city/populated areas. It's something that the Indian government has done and they can do it, with more public pressure."

(Monika Mondal is a freelance science and environment journalist. a.monikamondal@gmail.com)

THE GIST

While lead exists naturally in the deep layers of the earth, no amount of lead exposure is safe for humans

When mixed with blood, it can lead to severe kidney and heart problems. In individuals showing no acute symptoms, it can spike blood pressure and lead to sudden heart attacks

In children, lead can be a powerful neurotoxin that degrades myelin, the protective outer layer of the brain, and hampers brain cell connections

Lead, ingested or inhaled, is a health hazard. After the addition of lead to petrol has been banned, what still are the sources of lead poisoning?

1. Smelting units
2. Pens and pencils
3. Paints
4. Hair oils and cosmetics

Select the correct answer using the codes given below :

- (a) 1, 2 and 3 only
- (b) 1 and 3 only
- (c) 2 and 4 only
- (d) 1, 2, 3 and 4

Consider the following statements :

1. Coal ash contains arsenic, lead and mercury.
2. Coal-fired power plants release sulphur dioxide and oxides of nitrogen into the environment.
3. High ash content is observed in Indian coal.

Which of the statements given above is/are correct ?

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

Context (GS-3: Environment & Ecology, Pollution, Public Health)

A Centre for Global Development (CGD) report found that many schools in low- and middle-income countries, particularly New Delhi, are located near toxic sites containing lead and other hazardous pollutants, posing serious risks to children's health.

I. Lead

A. Lead is a **toxic heavy metal** naturally present in the Earth's crust; no level of exposure is considered safe.

B. **Sources:** Lead-acid battery recycling, e-waste processing, metal smelting, industrial emissions, contaminated soil, air and water.

C. **Impacts:** Brain and nervous system damage, reduced IQ, learning disabilities, behavioural disorders, kidney and cardiovascular diseases.

II. Key Findings

A. Study covered 26 lakh schools and 11,301 toxic sites across 17 countries.

B. About 10% of schools in LMICs are within 5 km of a toxic site.

C. New Delhi recorded the highest exposure, with over 90% of private schools located near contaminated sites.

D. Urban schools in LMICs are 4–28 times more likely than rural schools to be near toxic sites.

III. Way Forward

A. Strengthen hazardous waste and e-waste management.

B. Regulate informal battery recycling.

C. Improve land-use planning and environmental monitoring.

Indian space technology firms raised \$200 mn in 2025 led by Bengaluru'

Shilpa Elizabeth

BENGALURU

As India's space tech funding reached a record \$200 million in 2025 with Bengaluru emerging as the ecosystem leader attracting more than half of the money, as per market research firm Tracxn.

Tracxn said in a report the sector raised about \$871 million as of July. The top 10 most-funded firms alone account for over 60% of this total, led by India's space tech unicorn, Skyroot Aerospace at \$150 million. Skyroot built Vikram-1, India's first privately developed orbital-class rocket, which successfully reached low Earth orbit on



Money state: Vikram-1, India's first privately developed orbital class rocket built by Skyroot Aerospace ahead of maiden launch. ANI

July 18.

Upward trend

The report titled 'Space Tech in India' maps 285 firms in India with 274 being active. Out of these 72

received equity funding.

From \$43 million in 2021 to \$200 million in 2025, the sector has seen a steady rise in funding in the last five years. In 2026 till date, the startups raised

\$113 million in 24 rounds.

Seed-stage funding increased from \$7 million in 2022 to \$62 million in 2025 while late-stage funding emerged for the first time, reaching \$17 million in 2025 and \$53 million in 2026 YTD signalling a subset of firms transitioning from development to pre-commercial operations.

The investor base also expanded from domestic venture capital firms and angel investors to sovereign wealth funds and global institutional investors.

However, the increase in funding during 2025-26 has been driven by a small number of large rounds rather than a broad-based rise in deal activity.

Consider the following statements with regard to involvement of private entities in India's space programme :

1. The Indian National Space Promotion and Authorisation Centre (IN-SPACe) is an autonomous agency formed to facilitate participation of private entities.
2. Agnikul Cosmos launched the world's first flight using 3D-printed rocket engine.
3. Skyroot Aerospace has developed liquid fuel for GSLV.

Which of the statements given above is/are correct ?

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

Context (GS-3: Science & Technology – Space Technology | Indigenisation | Innovation)

India's private space sector recorded its highest-ever annual funding of US\$200 million in 2025, reflecting the success of space sector reforms and the emergence of private companies as key contributors to satellite manufacturing, launch vehicles, propulsion systems and space-based services.

A. Key Highlights

- * Indian space-tech startups raised US\$200 million in 2025, up from US\$43 million in 2021.
- * India has 285 space-tech startups (274 active).
- * Bengaluru emerged as the country's largest space-tech hub, attracting over 50% of total investments.
- * Funding is increasingly coming from global investors, indicating growing confidence in India's commercial space ecosystem.

B. Major Companies & Their Contributions

- * **Skyroot Aerospace** – Developed the Vikram series launch vehicles and India's first privately developed orbital-class rocket (Vikram-1), strengthening India's commercial launch capability.
- * **Agnikul Cosmos** – Built the Agnibaan launch vehicle and developed the world's first single-piece 3D-printed rocket engine, reducing manufacturing time and cost.
- * **Pixxel** – Developing a constellation of hyperspectral imaging satellites for agriculture, climate monitoring, mining, defence and disaster management.
- * **Digantara** – Provides Space Situational Awareness (SSA) by tracking satellites and space debris, improving space safety.
- * **Bellatrix Aerospace** – Develops advanced green propulsion systems and orbital transfer vehicles for satellites.
- * **Dhruva Space** – Offers end-to-end satellite solutions including satellite design, manufacturing, integration and mission operations.
- * **SatSure** – Uses satellite imagery and AI for agriculture, insurance, infrastructure and climate-risk assessment.
- * **GalaxEye** – Developing multi-sensor Earth Observation satellites capable of imaging in all weather and day-night conditions.



C. Significance

- * **Strengthens Atmanirbhar Bharat in the space sector.**
- * **Expands India's commercial presence in the global space economy.**
- * **Promotes innovation, high-skilled employment and technology exports.**
- * **Complements ISRO by enabling private participation in launch services, satellite manufacturing and downstream applications.**

D. Government Support

- * **Space sector reforms (2020) opened the sector to private participation.**
- * **IN-SPACe acts as the nodal agency for authorisation and promotion of private players.**
- * **ISRO provides technical support, testing facilities and launch infrastructure to startups.**

E. Challenges

- * **Funding remains concentrated among a few large startups.**
- * **High capital requirements and long development cycles.**
- * **Need for greater manufacturing capacity and commercial launch infrastructure.**
- * **Stronger policy support and global competitiveness are required.**

Centre declares 56,825 sq km of Western Ghats as eco-sensitive area

Nikhil Ghanekar

New Delhi, July 28

THE CENTRE has issued a seventh iteration of a draft notification declaring 56,825.7 square kilometre of Western Ghats, the biodiversity hotspot spread across Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu, as an ecologically sensitive area (ESA).

The fresh draft was issued on Monday — the day sixth iteration lapsed due to a continuing deadlock between the Ministry of Environment, Forest and Climate Change (MoEFCC) and the states concerned over demarcation of ESA areas.

The ESAs proposed across these states are spread over 449 sq km in Gujarat, 17,340 sq km in Maharashtra, 1,461 sq km in Goa, 20,668 sq km in Karnataka, 6,914 sq km in Tamil Nadu, and 9,993.7 sq km in Kerala.

While Gujarat and Goa have largely agreed upon an area to be finalised as ESA, Maharashtra's fresh revised proposal is under appraisal. Karnataka continues to oppose the draft notification, while the Centre is still resolving sticking points and information discrepancies with Kerala and Tamil Nadu, respectively.

The Centre has also given a year's extension to an expert

committee, formed in April 2022, which continues to examine the views of the six stakeholder state governments, keeping in view the conservation aspects of the disaster-prone ecosystem, as well as rights, privileges, needs and developmental aspirations of the region. The tenure of the expert committee, headed by Sanjay Kumar, ex-Director General of Forest, MoEFCC, was extended till July 2027 late last month.

As in the previous one, the latest draft notification also recommended a complete ban on mining, quarrying and sand mining in ESAs as well as phasing out of all existing mines within five years from the date of the final notification or expiry of the lease, whichever is earlier.

It also recommends prohibition of new thermal power plants and expansion of existing ones in ESAs. Further, 'red' category or the most polluting industries and their expansion is also proposed to be banned in ESAs. New and expansion projects of building and construction with built-up area of 20,000 sq metres and above, and all new and expansion township projects with area over 50 hectares and above, shall also be prohibited, the draft notification stated.

'Gadgil Committee Report' and 'Kasturirangan Committee Report', sometimes seen in the news, are related to

- (a) constitutional reforms
- (b) Ganga Action Plan
- (c) linking of rivers
- (d) protection of Western Ghats

Consider the following statements :

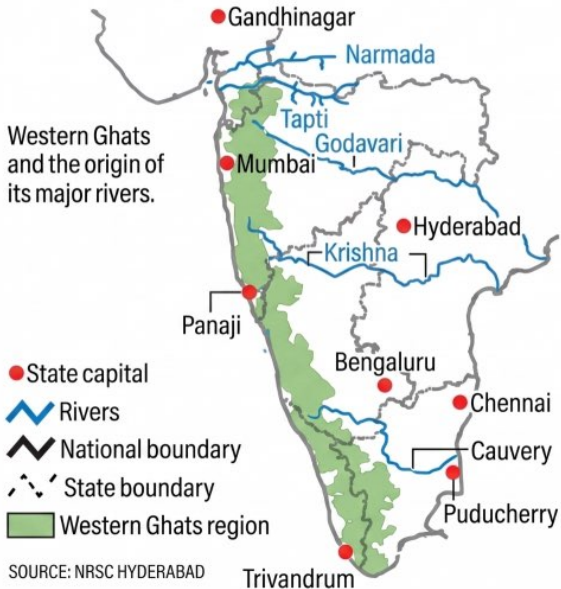
1. In India, the Himalayas are spread over five States only.
2. Western Ghats are spread over five States only.
3. Pulicat Lake is spread over two States only.

Which of the statements given above is/are correct ?

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

• THE EXTENT OF DEMARCATION

The Western Ghats Region

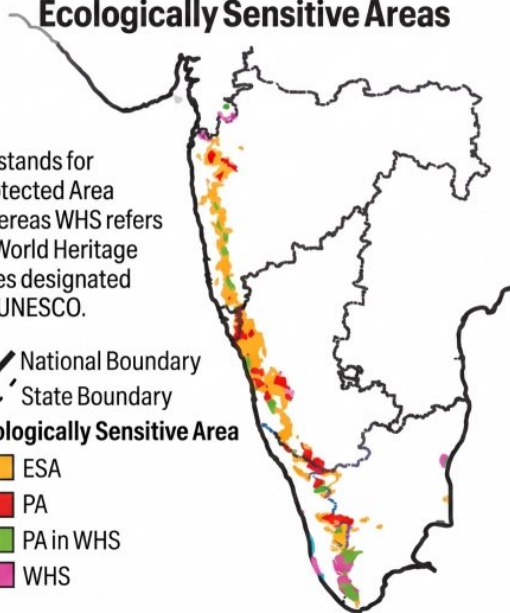


Ecologically Sensitive Areas

PA stands for Protected Area whereas WHS refers to World Heritage Sites designated by UNESCO.

— National Boundary
- - - State Boundary

Ecologically Sensitive Area



Context (GS-3: Environment & Biodiversity)

The Union Government has issued the 7th draft notification declaring 56,825.7 sq km of the Western Ghats across six States as an Eco-Sensitive Area (ESA). The draft seeks to protect the fragile ecosystem while balancing conservation with the developmental concerns of the States.

A. Key Highlights

- * Covers 56,825.7 sq km across Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu.
- * Issued after the previous draft lapsed due to the absence of consensus with States.
- * An expert committee continues consultations to resolve boundary and implementation issues.

B. Proposed Restrictions

- * Ban on new mining, quarrying and sand mining.
- * Existing mines to be closed within five years of the final notification or lease expiry.
- * No new thermal power plants or expansion of existing ones.
- * Ban on Red Category (highly polluting) industries.
- * Restrictions on large construction and township projects.

C. Why is ESA Needed?

- * Protects the Western Ghats, one of the world's eight hottest biodiversity hotspots and a UNESCO World Heritage Site.
- * Conserves forests, wildlife habitats and river catchments.
- * Reduces ecological degradation, landslides and flood risks while promoting sustainable development.

D. Why is it Controversial?

- * States fear restrictions on development projects, mining, infrastructure and local livelihoods.
- * The Centre and States continue to differ on the extent and demarcation of ESA boundaries.

E. Background

- * The proposal originates from the recommendations of the Madhav Gadgil (WGEEP) and K. Kasturirangan Committees, which suggested different models for conserving the Western Ghats.

Co-existing with tigers outside reserves

India's tiger conservation story is widely regarded as one of the world's most extraordinary wildlife recoveries – a species brought back from near extinction through sustained political commitment, scientific management, and decades of on-ground protection. Since the launch of Project Tiger in 1973, the country's network of protected areas has expanded from nine reserves covering 18,278 sq km to 58 reserves spanning 84,488 sq km, accounting for nearly 2.6% of India's landmass. India's tiger population has risen from 1,411 in 2006 to 3,682 in 2022, firmly establishing the country as home to over 70% of the world's wild tigers. This success has now created a new conservation frontier – the growing proportion of tigers living outside protected areas.

Although national datasets do not conclusively link rising tiger numbers with increasing human-tiger conflict, forest departments across several landscapes report a steady escalation in such incidents. As territorial carnivores require extensive home ranges, tigers disperse naturally when core habitats reach saturation. Consequently, more tigers are moving beyond protected boundaries into human-dominated fringes. According to the National Tiger Conservation Authority, 35-40% of India's tiger population now lives outside designated Tiger Reserves. This reality has prompted the Ministry of Environment, Forest and Climate Change to launch the Tigers Outside Tiger Reserves (TOTR) initiative.

Beyond protected boundaries

The growing tiger population reflects healthy breeding groups, functional habitats, and well-connected forest corridors. However, when tigers move beyond protected areas into landscapes interwoven with villages, farms, roads and other human infrastructure, interactions



Supriya Sahu

is a senior administrator currently serving in the Government of Tamil Nadu. She has worked extensively on environmental policy, ecosystem restoration, wildlife and biodiversity conservation, climate action and human-wildlife coexistence. She is the recipient of the UNEP Champions of the Earth Award 2025

The objective of the Tigers Outside Tiger Reserves initiative is to establish a scientifically grounded, landscape-based framework for conserving tigers outside protected areas while safeguarding human lives

with people become inevitable, leading to human fatalities, livestock depredation, accidental encounters, prolonged rescue operations, and heightened public anxiety. Each incident carries ecological, social, and political consequences, placing enormous pressure on forest departments and district administrations.

The objective of the TOTR is to establish a scientifically grounded, landscape-based framework for conserving tigers outside protected areas while safeguarding human lives and livelihoods. Rather than responding to conflict only after it occurs, the initiative seeks to shift the approach from reactive crisis management to proactive, science-driven governance built on technology, preparedness, and community participation.

The TOTR is being launched as a targeted pilot rather than a nationwide rollout, recognising that long-term policy must be anchored in evidence generated under real field conditions.

The All-India Tiger Estimation (2022) recorded tiger presence across 212 forest divisions. Based on this assessment, 40 forest divisions across nine States have been selected for the first phase of the TOTR implementation. The participating States include Uttarakhand, Uttar Pradesh, Rajasthan, Madhya Pradesh, Maharashtra, Karnataka, Tamil Nadu, Telangana and Assam.

The TOTR rests on two complementary pillars. The first focuses on reducing human-tiger conflict and strengthening field protection. This includes upgrading communication systems, deploying rapid response teams, improving rescue infrastructure, and ensuring coordinated action during emergencies. The second pillar emphasises long-term coexistence. Conservation outside protected areas cannot succeed without the trust and participation of local communities. Awareness programmes, community engagement, timely compensation

and treating villagers as partners are central to the initiative. Tigers and people now co-occur across vast shared landscapes, making structured coexistence essential for long-term stability.

Among these, streamlined and timely compensation mechanisms are critical. Although States have their own frameworks, delays often erode public trust and fuel resentment. States must simplify procedures and invest in sustained outreach to build confidence among rural families living alongside tigers.

The role of States

Participating States will also need to invest strategically in both technology and institutional capacity. The programme rightly emphasises the use of modern conservation tools such as camera traps, GPS-enabled monitoring systems, drones and AI to strengthen surveillance, improve early warning systems and enable evidence-based decision-making. However, technology alone cannot resolve human-tiger conflict. Its effectiveness will ultimately depend on the strength of the institutions that support it. Building public confidence requires well-trained forest staff, veterinarians, and rescue teams capable of responding rapidly in conflict situations.

The TOTR underscores a broader national imperative: strengthening the governance of shared landscapes where ecological processes and human livelihoods intersect daily. The initiative signals a shift from viewing tiger conservation solely through the lens of protected areas to recognising the wider mosaic of reserve forests and other lands that now support dispersing tigers.

If executed with the same determination that made Project Tiger a global benchmark, the TOTR could become India's defining conservation initiative of the century proving that people and large carnivores can share space safely.

Among the following Tiger Reserves, which one has the largest area under "Critical Tiger Habitat" ?

- (a) Corbett
- (b) Ranthambore
- (c) Nagarjunsagar-Srisailam
- (d) Sunderbans

Context (GS III – Environment & Biodiversity)

The Ministry of Environment, Forest and Climate Change (MoEFCC) has launched the Tigers Outside Tiger Reserves (TOTR) initiative as nearly 35–40% of India's tigers are now found outside notified Tiger Reserves, necessitating a scientific, landscape-based approach to conservation and conflict mitigation.

I. What is TOTR?

Tigers Outside Tiger Reserves (TOTR) is a MoEFCC initiative aimed at conserving tigers beyond protected areas by integrating wildlife conservation with human livelihoods. It shifts the focus from reserve-centric protection to landscape-level conservation, recognising that tigers frequently use reserve forests, territorial forests, wildlife corridors and human-dominated landscapes.

II. Why was TOTR introduced?

A. Increasing tiger population

- * India's tiger population increased from 1,411 (2006) to 3,682 (2022).
- * India is home to over 70% of the world's wild tigers.

B. Expansion beyond Tiger Reserves

- * Around 35–40% of India's tigers now live outside notified Tiger Reserves.
- * Natural dispersal due to increasing populations has led tigers into forests, agricultural areas and village landscapes.

C. Rising human–tiger conflict

- * More incidents of human fatalities and livestock depredation.
- * Increased crop damage and frequent rescue operations.
- * Greater burden on forest departments and local administrations.

III. Key Features of TOTR

A. Scientific conservation

- * Uses AI, camera traps, drones, GPS-enabled monitoring and early-warning systems for evidence-based wildlife management.

B. Conflict mitigation

- * Establishes rapid response teams, strengthens rescue infrastructure, adopts Standard Operating Procedures (SOPs), and ensures timely compensation for affected communities.

C. Community participation

- * Treats local communities as conservation partners through awareness programmes, community engagement and participatory monitoring.

D. Institutional strengthening

- * Enhances the capacity of forest departments through better training, improved veterinary support, technological integration and inter-agency coordination.

IV. Pilot Implementation

The programme is being implemented in 40 forest divisions across nine States:

Uttarakhand, Uttar Pradesh, Rajasthan, Madhya Pradesh, Maharashtra, Karnataka, Tamil Nadu, Telangana and Assam.

V. Significance

- * Promotes landscape-based conservation beyond protected areas.
- * Strengthens wildlife corridors and habitat connectivity.
- * Reduces human–wildlife conflict through proactive management.
- * Integrates technology, scientific monitoring and community participation.
- * Represents the next phase of India’s tiger conservation strategy by balancing biodiversity protection with local livelihoods.

The urban nightmare — a fire with no escape

On June 22, 2026, 15 people gasped to death in a burning building in Aliganj, Lucknow. Trapped behind smoke-filled corridors and sealed exits, they never had a chance. The commercial establishment operating from a residential neighbourhood was a veritable death trap – pigeonhole-sized workstations crammed into an unauthorised structure with no viable fire escape.

It was not merely a building that caught fire, but a system that failed. A tragedy waiting to happen, aided by those whose job it was to prevent it.

All this happened, while the TV channels discussed animatedly U.S.-Iran parleys, where India played no role, and analysts dissected the number of Members of Parliament defecting to the Eknath Shinde-led Shiv Sena. Not aware if there was ever a mention of a collapse of political ethics and morality. But then, do ethics, morality and professionalism figure in urban governance today? Major fires have erupted in cities across India in 2026 on account of failures of urban regulation – signifying abject greed and mismanagement.

On June 3, a fire in a bed and breakfast facility, Malviya Nagar, Delhi, was also caused by illegal construction with no emergency exit. In February, a Bhiwadi garment plant, Rajasthan, which caught fire was an illegal firecracker-manufacturing unit behind closed doors; the fire in a cracker manufacturing unit in Virudhunagar, Tamil Nadu, took place when the factory was running illegally on a Sunday.

Yet, amidst the horror, emerged stories of extraordinary courage. In Delhi's Malviya Nagar fire, a mattress shop owner reportedly emptied his entire stock onto the street to cushion those jumping from the burning building. Young residents rushed forward without waiting for instructions, while police personnel administered CPR, evacuated victims and continued rescue efforts despite injuries to themselves. Such acts of humanity stand in sharp contrast to the institutional failures.

Historical data trends suggest that India sees approximately 13,000-15,000 fire deaths annually, with the summer of 2026 projected to be one of the worst due to extreme heatwaves triggering electrical fires. In the first quarter of 2026, 39 people have died in fires in Delhi alone, even before the summer peak began.

Violations without consequences

The problem extends far beyond Aliganj and Malviya Nagar. Death traps of varying forms exist in countless urban settlements across India. They may differ in appearance but share a common characteristic: everyone knows the violations exist, yet they continue.

This is what makes the present crisis particularly troubling when India today possesses technological capabilities unimaginable even a decade ago. Satellite imagery can identify encroachments. Drones can map illegal



Yashovardhan Azad

Retired Indian Police Service officer, who has served as the Central Information Commissioner, Secretary – Security, Government of India, and Special Director, Intelligence Bureau

constructions. Geographic Information Systems can track land use changes. Digital property databases can identify violations. Artificial intelligence can flag anomalies and real-time dashboards can monitor compliance.

Is it really difficult for a municipal commissioner, a development authority official, a State government functionary or the Lieutenant Governor to call for a list of establishments operating without licences, fire clearances or in myriad violations of building norms?

The difficulty lies elsewhere. It lies in political pressure and vote-bank calculations and in the thriving informal economies that governments are reluctant to confront and where urban laws and regulations are routinely violated. But, most importantly, it lies in corruption.

Could the fire in Lucknow have been averted? Yes. In 2016, a notice for demolition was given but within two months was withdrawn. It was clearly a political decision. The property stood out as a symbol of political patronage under benign oversight of officials, right in the midst of a prominent locality of the capital. This sends out a message to the lower officials, the enforcers, who then entrench a system of their own beneficiaries, overlooking various violations for monetary benefits.

The Special Investigation Team (SIT) formed to investigate the fire comprised two senior officers, from the IAS and the IPS from the State of Uttar Pradesh, with the report to be submitted to another IAS officer of the government. The head of Lucknow land development Authority is also an IAS officer. In such a situation, can the inquiry yield anything purposeful. If a calamity of this kind results only in a conversation between a closed loop of bureaucrats, can there ever be any meaningful reform? No. But it was certainly possible if the Minister of Urban Development and the head of the capital land development authority were indicted for this tragedy.

This pattern is visible across the country. In Noida, a young professional lost his life after falling into a waterlogged, poorly protected urban hazard. In Indore, celebrated nationally for cleanliness, deaths linked to contaminated water supply raise disturbing questions about basic civic safeguards. Bengaluru, India's technology capital, repeatedly grinds to a halt after heavy rains. Mumbai, India's financial capital, continues to struggle with flooding despite decades of investment and repeated expert recommendations.

A common thread

Different cities. Different governments. Different political parties, but the same outcome. The real concern is the absence of accountability and governance deficit. What happened after Delhi's basement coaching centre tragedy? Arrests were made. Committees were constituted. Headlines were generated. Yet, illegal and unsafe business operations continue to flourish in many cities.

How many inquiry reports have fundamentally

altered urban governance? How many officials have faced meaningful consequences years after disasters? How many systemic reforms have followed repeated tragedies? India has actually become adept at managing outrage and far less effective in preventing a recurrence of man-made tragedies.

At the heart of the problem lies a governance structure that nobody wishes to discuss honestly. For over three decades, since the 74th Constitutional Amendment, India has spoken of empowering urban local bodies. Yet, most city governments remain weak. Every Chief Minister is the de facto mayor for all cities in his/her State and municipal corporations have responsibility without authority. Elected representatives have visibility without power. Important functions remain scattered across development authorities, municipal corporations, public works departments, water boards, transport agencies and numerous specialised bodies.

A flooded road belongs to one agency, a drain to another, land to a third and enforcement to a fourth. Citizens, meanwhile, simply see government. This fragmentation has created a dangerous accountability vacuum.

Fix governance first

The answer therefore is not another scheme. Indian cities are already overflowing with schemes, missions, projects and programmes. Every few years a new initiative comes up with a new acronym and fresh funding. The problem is not the absence of schemes, but the absence of governance. A number of well-meaning schemes lie buried under corruption and mismanagement. Cities require empowered local institutions, professional urban management, clear accountability and fearless enforcement. Technology must become an instrument of compliance rather than a showcase of modernisation. Most importantly, governments must find the political courage to dismantle entrenched systems of tolerated inequality. Officers, the enforcers, look away fearing a clash with political vested interests.

The victims of Lucknow and Delhi fires did not die because India lacks fire safety laws. They died despite those laws. That is the distinction policymakers must understand. Urban governance is ultimately measured not by the number of projects inaugurated, smart-city dashboards installed or schemes announced, but by the number of tragedies prevented. The real test of governance is whether an ordinary citizen can work, live, study, shop or sleep in a building without fear of dying because somebody chose to ignore the rules.

Will this tragedy become yet another file, another enquiry and another forgotten headline? Or will it finally compel us to confront the uncomfortable truth that India's cities are not merely growing beyond their capacity but are increasingly failing the very citizens they were meant to serve?

Urban neglect, political apathy, and corruption continue to claim lives across India

Context (GS II – Urban Governance & Local Government | GS III – Disaster Management)

Following a series of fatal urban fire incidents, the article argues that the real problem is not the absence of fire safety laws but systemic failures in urban governance. Illegal constructions, weak enforcement, fragmented institutional responsibilities, political interference and lack of accountability have made many Indian cities vulnerable to preventable disasters.

I. Why do such urban disasters recur?

A. Illegal urban development

- * Unauthorized commercial use of residential buildings.
- * Violations of building bye-laws and fire safety norms.
- * Blocked emergency exits and unsafe building designs.

B. Weak enforcement

- * Inadequate inspections and compliance monitoring.
- * Political interference and corruption.
- * Poor accountability of enforcement agencies.

C. Fragmented urban governance

- * Multiple agencies with overlapping responsibilities.
- * Weak coordination among municipal bodies, development authorities and utility agencies.
- * Urban Local Bodies often lack adequate powers and resources.

II. Governance Challenges

- * Poor implementation despite adequate legal provisions.
- * Delayed action against illegal constructions.
- * Inquiry committees rarely result in structural reforms.
- * Greater emphasis on post-disaster relief than disaster prevention.

III. Way Forward

- A. Empower Urban Local Bodies (ULBs) with adequate finances, functions and functionaries.
- B. Ensure strict enforcement through regular audits, inspections and accountability of officials.
- C. Use technology such as GIS mapping, digital property records and AI-based compliance monitoring to detect violations.
- D. Improve institutional coordination by clearly defining responsibilities among urban agencies.
- E. Promote citizen-centric governance through transparency, public participation and a prevention-first approach.

India curtailed 8,133 GWh solar power to maintain grid security

As on June 30, India's installed solar power capacity stood at 162.15 GW, which included 30.11 GW of rooftop projects, 6.43 GW of off-grid project

The Hindu Bureau
NEW DELHI

India curtailed 8,133 gigawatt-hour (GWh) of solar power during the April-June quarter this year, according to Minister of State for New and Renewable Energy Shripad Yesso Naik.

The curtailment and restriction were instituted to "maintain grid security" and "due to mismatch between commissioning of transmission lines and renewable energy projects, he informed Parliament, quoting figures from the Grid Controller of India.

Curtailment is when power-grid operators limit the power output from generating sources to maintain grid stability.

A total of 2,417 GWh of solar energy curtailment was carried out in April this year, 3,235 GWh in

Wasted energy

Restriction due to mismatch between commissioning of transmission lines and renewable energy projects, MoS tells House



■ Curtailment is when power-grid operators limit output from generating sources

■ 2,417 GWh of solar energy curtailment was carried out in April this year

■ 3,235 GWh of solar energy was restricted in May and 2,481 GWh in June

May and 2,481 GWh in June. As on June 30, India has installed solar capacity of up to 162.15 GW, which is inclusive of 125.6 GW of utility scale projects, 30.11 GW of rooftop projects and 6.43 GW of off-grid projects.

PM Surya Ghar

Separately, Mr. Naik also told the upper house that since its implementation in February 2024, the PM Su-

rya Ghar scheme has received more than 75 lakh applications, as on July 22.

More than 39.7 lakh rooftop solar (RTS) systems with a cumulative installed capacity of 14,180.90 MW have been installed, he added. Mr. Naik also said the scheme has reached out to more than 48 lakh households having released ₹27,343.9 crore as Central Financial Assistance (CFA) until June 27.

Context (GS III – Energy & Infrastructure)

The Government informed Parliament that 8,133 GWh of solar power was curtailed during April–June 2026 to maintain grid security, highlighting the challenge of integrating rapidly growing renewable energy capacity with inadequate transmission infrastructure.

I. What is Solar Curtailment?

- * Solar curtailment refers to the deliberate reduction of electricity generated by solar plants despite available sunshine, when the grid cannot safely absorb the power.
- * It is undertaken by grid operators to maintain grid stability, frequency and reliability.

II. Why did India curtail solar power?

- A. **Transmission bottlenecks:** Renewable projects were commissioned faster than transmission lines.
- B. **Grid security:** Excess generation without matching transmission can destabilise the grid and increase blackout risks.
- C. **Renewable intermittency:** Solar generation peaks during daytime, while electricity demand may not always coincide.

III. Key Data

- * Total curtailed (Apr–Jun 2026): 8,133 GWh
- * April: 2,417 GWh | May: 3,235 GWh | June: 2,481 GWh
- * **Installed Solar Capacity** (30 June 2026): 162.15 GW
 - * Utility-scale: 125.6 GW
 - * Rooftop: 30.11 GW
 - * Off-grid: 6.43 GW



IV. Why does it matter?

- * Wastes clean, low-carbon electricity.**
- * Reduces revenues for renewable energy developers.**
- * Slows India's renewable energy transition.**
- * Reflects the need to synchronise generation capacity with grid expansion.**

V. Way Forward

- * Expand Green Energy Corridors and transmission infrastructure.**
- * Deploy Battery Energy Storage Systems (BESS) and pumped-storage projects.**
- * Strengthen smart grids, forecasting and demand-response mechanisms.**
- * Plan renewable generation and transmission infrastructure simultaneously.**