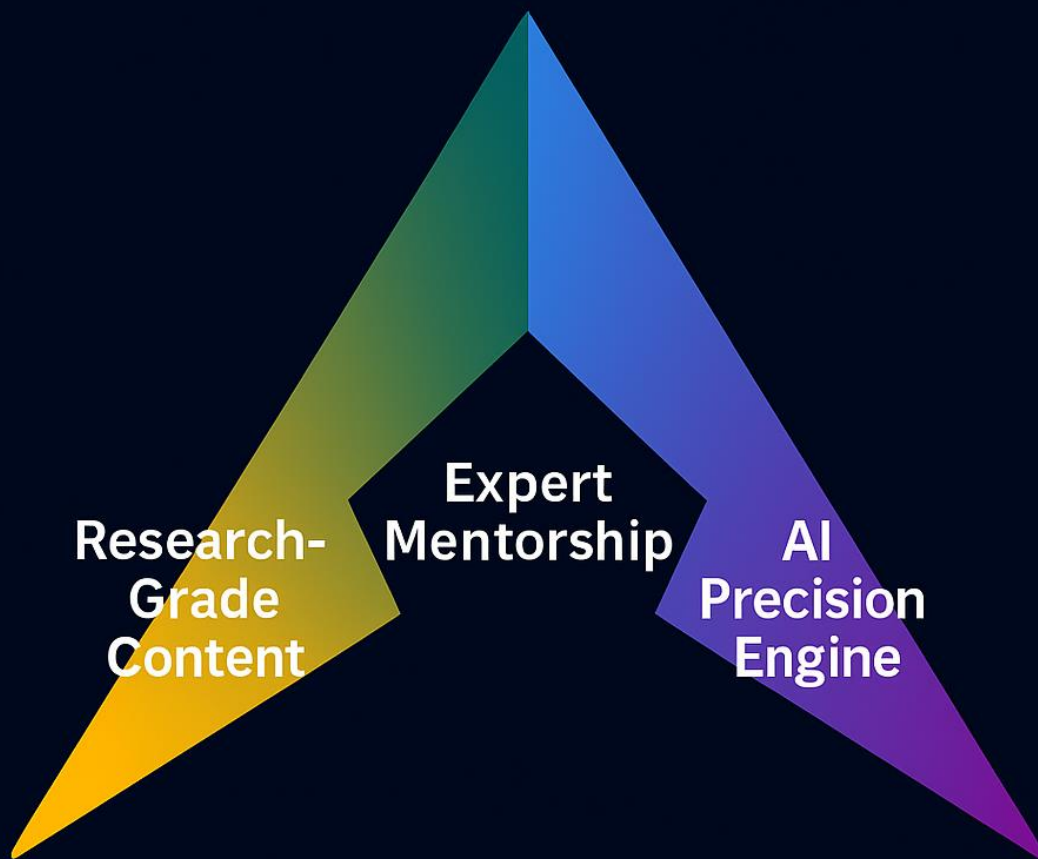


PrepAlpine

The Next-Generation UPSC Institution

Where Research Meets Mentorship & Precision



Preparation Meets Precision

A Next-Generation Learning Institution

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PrepAlpine — Where Research-Grade Content Meets Mentorship, and AI Makes It Personal

PrepAlpine is India's next-generation UPSC institution — built by educationists, retired bureaucrats, IITians, and experienced educators, and powered by a 500+-member technology firm specialising in AI-driven education infrastructure.

We're not another coaching platform — we're a complete preparation ecosystem that unites:

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Every content is crafted and reviewed by civil servants, educators, and scholars, and follows UPSC's Intro–Body–Conclusion format. Content is built from official reports, verified data, and visual pedagogy — flowcharts, frameworks, maps, and comparative tables.

- **Two-Tier Mentorship:**

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We're reimagining UPSC preparation as a research-led, mentor-guided, AI-personalised journey that adapts to every aspirant.

PrepAlpine — From Aspirant to Authority. Lead the State, Not the Struggle.

DAILY CURRENT AFFAIRS DATED 14.11.2025

GS Paper III: Environment

1. Slowing Growth of India's Carbon Dioxide Emissions: Understanding the Emerging Trend

a. Introduction

India is today one of the world's largest energy consumers. For decades, its economic expansion was closely tied to rising carbon dioxide emissions, primarily from coal-based electricity and energy-intensive industries. A notable shift, however, has begun to emerge. While total emissions continue to rise, the rate of increase is slowing. This moderation signals deeper structural changes in India's economy, energy usage, and climate governance.

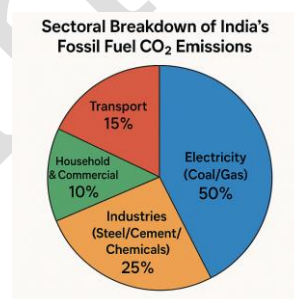
A key source for understanding this shift is the Global Carbon Project, which provides the most authoritative annual assessment of global and national emission patterns.

b. What the Latest Global Carbon Project Data Shows

Recent data points to a clear deceleration in India's emissions growth. For 2025, emissions are expected to rise by roughly 1.5%, a significant decline from the 4% rise recorded the previous year.

Looking at longer trends:

- Between 2015 and 2024, annual emissions grew at an average rate of 3.5%.
- During 2004 to 2014, the average rise was above 6%.



This means India is expanding its economy while gradually flattening the emissions curve, an important marker of the early stages of low-carbon transition.

c. Reasons Behind the Slowing Growth

i. Influence of the Monsoon

A good monsoon lowers summer temperatures, reduces demand for cooling, and lessens pressure on the power grid.

- Lower electricity demand directly cuts coal consumption.
- Hydropower benefits from higher rainfall, further displacing thermal power.

ii. Rapid Expansion of Renewable Energy

India's solar and wind capacity has grown across states, expanding clean power availability.

- Renewables increasingly substitute coal in electricity generation.
- Grid emissions reduce during periods of high renewable output.

iii. Improvements in Energy Efficiency

Industrial processes, appliances, and buildings now use less energy for the same output.

- This reduces carbon intensity, meaning fewer emissions per unit of GDP.
- Efficiency gains accumulate over time, producing steady emission savings.

iv. Gradual Flattening of Coal Consumption

Coal remains dominant, but its consumption is no longer rising at past exponential rates.

- Better plant efficiency and higher renewable share moderate coal demand.
- New coal additions have slowed relative to earlier decades.

d. India in the Global Context

Globally, fossil fuel emissions continue to rise, but unevenly. China is witnessing marginal increases, while the United States oscillates with economic cycles. Against this backdrop, India's more pronounced slowdown stands out.

It indicates that a major emerging economy is managing growth without proportional spikes in emissions—a trend closely watched by climate analysts.

e. Understanding Fossil Fuel Emissions

Fossil fuel emissions arise mainly from:

i. Electricity Generation

Coal and natural gas used in power plants.

ii. Transport

Petrol and diesel-powered vehicles.

iii. Industry

Energy-intensive sectors like steel, cement, and chemicals.

iv. Household and Commercial Use

Cooking, heating, diesel generators, and other fuel-based activities.

Together, these account for around 90% of global CO₂ emissions. The remaining share comes from land-use change, such as deforestation and conversion of natural landscapes.

f. Key Observations from the Global Carbon Project

The 2024 global assessment notes that:

i. Global Fossil Fuel Emissions Reached a New High

Overall emissions crossed 38 billion tonnes in 2024.

ii. Land-Use Change Emissions Are Moderating

Deforestation-led emissions show a slight decline globally.

iii. India's Electricity Sector Emissions Fell in Early 2024

- Strong renewable generation contributed significantly.
- A supportive monsoon reduced thermal demand.

Despite overall emissions still rising, the pace of increase is clearly moderating for India.

g. Why India's Slowing Emissions Growth Matters

i. Early Signs of Decoupling

Economic growth is rising faster than emissions.

- Helps meet the target of reducing emissions intensity by 45% by 2030.
- Supports India's goal of 50% non-fossil power capacity by 2030.
- Strengthens the long-term pathway towards Net Zero by 2070.

ii. Structural Challenges Remain

- Total emissions are still rising.
- Coal continues to dominate India's energy mix.
- Energy-intensive sectors (steel, cement, transport) remain hard to decarbonise.
- Monsoon-dependent gains are uncertain in an era of climate variability.

h. Way Forward

i. Accelerating Renewable Energy Deployment

- Rapid solar and wind expansion, supported by grid modernisation.
- Strengthening storage technologies to manage intermittency.

ii. Greening Transport

- Wider adoption of electric mobility.
- Stronger public transport networks to reduce private vehicle dependence.

iii. Decarbonising Industry

- Promotion of green hydrogen for steel and fertiliser sectors.
- Adoption of low-carbon technologies and energy-efficient systems.

iv. Enhancing Energy Efficiency

- More efficient buildings, appliances, and industrial processes.
- Strengthened compliance under national and state efficiency programmes.

v. Strengthening Carbon Sinks

- Forest restoration and protection.
- Urban green spaces and ecological restoration initiatives.

vi. Empowering States in Climate Action

- Stronger State Action Plans with measurable targets.
- Local implementation aligned with national climate missions.

Conclusion

India's slowing emissions growth marks a significant and encouraging trend. It reflects early structural changes in energy use, efficiency, and technology, even as development continues. The challenge ahead lies in sustaining this momentum through rapid expansion of clean energy, deeper industrial reforms, better urban mobility, and robust ecosystem conservation. With consistent policy support and technological innovation, India can reinforce its path toward a resilient, low-carbon future—balancing growth with climate responsibility in a manner that sets an example for the developing world.

GS Paper III: Environment

2. Air Pollution and the Missing Political Will in India

a. Introduction

Air pollution in India has become a daily lived crisis—burning eyes, breathlessness, and seasonal smog forming a familiar pattern across major cities. Many urban centres frequently rank among the most polluted worldwide, yet a striking paradox persists: despite widespread suffering, air pollution has not evolved into a sustained political issue. Public frustration is real, but it has not translated into consistent political demand or electoral pressure.

This gap between lived experience and political mobilisation explains why the crisis continues with only limited, incremental improvements.

b. Why Air Pollution Remains Unresolved

i. The Comfort of Complexity

Air pollution is often portrayed as a technical challenge involving many sectors—transport, industry, waste, construction, and agriculture.

- While complexity exists, it is frequently used to justify slow progress.
- Countries with fewer resources have made significant gains by treating pollution as a priority rather than a puzzle.
- In India, the “too complex to solve” narrative becomes a convenient shield that softens political responsibility.

ii. Fragmented Governance and Weak Accountability

Control over air quality is scattered across central ministries, state governments, municipal bodies, and pollution boards.

- When authority is dispersed, accountability becomes unclear.
- Many agencies lack staff, expertise, and autonomy.
- Failures are framed as systemic rather than attributable to any single institution.

iii. Muted Public Pressure and Elite Discomfort

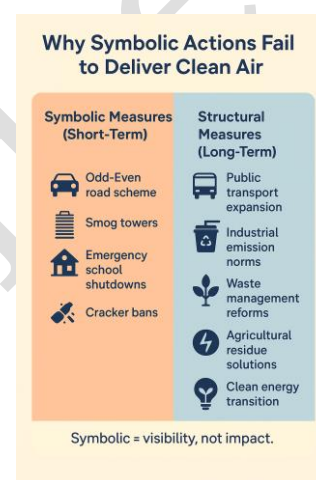
Public anger exists but remains inconsistent and shallow.

- Media coverage is episodic—strong during winter smog, weak afterward.
- Environmental activism is sometimes viewed with suspicion.
- Urban elites want clean air but hesitate to support behavioural changes like reducing car use or accepting stricter construction norms.
This weakens the social push that typically compels political action.

iv. Symbolic Measures in Place of Structural Reform

Governments often choose visible actions rather than impactful ones.

- Road-rationing schemes or smog towers signal activity but have negligible effect.
- Such steps create an illusion of responsiveness.
- The deeper drivers—industrial norms, waste systems, transport design—remain largely unchanged.



c. An Emerging Public Mood

A gradual change is visible in how citizens perceive air pollution.

- Health impacts are being felt across age groups and income classes.
- People increasingly view polluted air as a governance failure rather than a seasonal phenomenon.
- Dissatisfaction is broadening beyond environmental groups to ordinary residents.

Whether this growing discontent will translate into sustained political mobilisation remains the crucial question.

d. What Needs to Change

i. Clarity of Responsibility

Effective action begins with clear institutional responsibility.

- Every major contributor—transport, industry, construction, agriculture, waste—must be assigned to a specific authority.
- Roles must be transparent and measurable.
- Without clear ownership, accountability diffuses and progress stalls.

ii. Strengthening Regulatory Institutions

Pollution Control Boards and the Commission for Air Quality Management require deep institutional reform.

- Greater autonomy can insulate them from political interference.
- Better staffing and technical capacity improve monitoring.
- Strong enforcement powers allow timely corrective action.

iii. Moving Beyond Short-term Measures

Long-lasting change requires structural reforms:

- Modernising brick kilns and regulating construction dust.
 - Strengthening public transport and reducing dependence on private vehicles.
 - Improving waste management and eliminating open burning.
 - Coordinated solutions for stubble burning across states.
- These steps are slower but deliver durable improvements.

iv. Political Leadership and Ownership

Ultimately, clean air is not achieved by technology alone.

- Leaders must clearly articulate pollution as a priority issue.
- Regular monitoring and transparent reporting must be institutionalised.
- Officials must be held accountable for both progress and failure.

Without political ownership, technical interventions cannot overcome deep systemic inertia.

Conclusion

Air pollution in India represents a major environmental and governance challenge. Despite its severe health impacts, decisive action has been limited because political will has been weak and public pressure uneven. Yet a shift is underway: as more people personally experience the health consequences, dissatisfaction is becoming broader and more vocal. Clean air is fully achievable, but it requires moving from symbolic gestures to structural reforms—supported by strong institutions, clear accountability, and committed political leadership. Only when public frustration becomes a sustained political demand will governments respond with the urgency the crisis demands.

GS Paper III: Environment

3. Delhi–NCR’s Toxic Air Crisis: Why It Persists and What Can Be Done

a. Introduction

Delhi and the wider NCR enter a severe air-pollution emergency every winter. Dense smog disrupts schooling, fills hospital wards, and makes everyday movement difficult. Despite multiple action plans, court interventions, and annual public debate, the crisis returns with predictable regularity. This is because Delhi’s pollution is not a seasonal accident, but the outcome of structural weaknesses accumulated over decades. Temporary winter responses offer brief relief, but the challenge demands deep governance, infrastructural, and economic reform.

b. Sources of Delhi’s Toxic Air

i. Vehicular Emissions

Delhi–NCR has among the highest private-vehicle densities in India.

- Diesel cars and ageing commercial vehicles release nitrogen oxides and particulate matter.
- Public transport expansion has not matched population growth.
- Weak last-mile connectivity pushes people toward private vehicles, increasing emissions.

ii. Industrial Pollution

Numerous small industries use low-grade fuels and operate with limited regulation.

- Fuel norms are often violated.
- Emission monitoring remains inconsistent.
- Industrial clusters in neighbouring states add to the regional load.

iii. Imported Pollution from Power Plants

Though Delhi has no coal plants, much of its electricity is sourced from coal-fired stations in Haryana and Uttar Pradesh.

- Pollutants drift into the NCR.
- Coal’s dominance in the regional grid worsens winter air quality.

iv. Construction and Road Dust

Continuous construction generates dust through uncovered debris, unpaved stretches, and poor handling of materials.



- This dust becomes airborne in dry months.
- Enforcement of dust-control rules remains weak.

v. Waste Burning

Inadequate waste collection and processing lead to scattered burning across Delhi and peri-urban areas.

- Unsegregated waste is difficult to process.
- Open burning releases toxic emissions.

vi. Crop-Residue Burning

Punjab and Haryana contribute heavily to the seasonal spike.

- Rice straw production is enormous and expensive to handle.
- Burning is the cheapest and fastest disposal method.
- Winds transport smoke directly to NCR during October–November.

c. Why Existing Measures Fail

i. Dependence on Short-Term Responses

Measures like road-rationing, halting construction, smog towers, and banning older vehicles are designed to tackle peak episodes.

- They create visibility but have limited impact.
- Once winter passes, urgency fades.
- Structural issues remain unaddressed.

ii. Fragmented Governance

Delhi's air is shaped by decisions across Delhi, Haryana, Uttar Pradesh, and parts of Punjab.

- Multiple governments and agencies share responsibility.
- Coordination is weak, and mandates overlap.
- No single institution feels fully accountable for outcomes.

iii. Misplaced Urban Priorities

Urban spending still favours car-centric infrastructure.

- Flyovers and road widening encourage private vehicle use.
- Public transport has not kept pace with population pressures.
- Weak last-mile systems dilute metro benefits.

iv. Weak Enforcement

Pollution-control norms exist on paper but lack consistent implementation.

- Fuel norms for industries are poorly enforced.
- Construction-dust rules are frequently violated.
- Waste burning persists due to gaps in local management.

d. Why Stubble Burning Persists

i. High Cost of Straw Management

Punjab generates over twenty million tonnes of rice straw annually.

- Proper disposal costs around two thousand rupees per tonne.
- Annual management requires thousands of crores.
- Farmers and state governments are unwilling to bear these costs alone.

ii. Burning Is the Cheapest Option

- Burning is quick, free, and fits short harvesting windows.
- Alternative technologies remain expensive.
- Policy incentives have not bridged the cost gap effectively.

In this vacuum, unconventional proposals have surfaced to address residue disposal.

e. An Unusual Proposal: Citizen Contribution

Some analysts suggest voluntary citizen contributions to support air-quality initiatives.

- Households already pay privately for water filtration, schooling, medical care, and home security.
- A modest annual contribution could help finance residue collection in Punjab.
- This reflects a Coasean idea—where affected parties negotiate directly when government action is slow.

While not a perfect solution, it may offer a temporary bridge until sustainable government systems take shape.

f. Long-Term Solutions

i. Transforming Transport

- Expand electric-bus fleets and improve metro feeder services.
- Create safe walking and cycling corridors.
- Introduce parking management and congestion fees to discourage excessive car use.

ii. Cleaner Industrial Practices

- Shift industries toward cleaner fuels and electrified processes.
- Strengthen inspections and monitoring.
- Support small units in transitioning to cleaner technologies.

iii. Reforming the Power Sector

- Shift regional electricity consumption toward renewables.
- Retire ageing coal plants in Haryana and UP in a phased manner.
- Strengthen grid integration to support non-fossil power.

iv. Effective Waste Management

- Ensure full waste collection and household-level segregation.
- Expand decentralised composting and recycling systems.
- Eliminate open burning through reliable processing infrastructure.

v. Controlling Construction and Road Dust

- Enforce dust-control rules strictly.
- Mandate covering of debris and safe transport of materials.
- Pave unpaved stretches and use recycled construction waste in public works.

vi. Managing Crop Residue

- Promote village-level balers, storage yards, and biogas plants.
- Support modern harvester technologies with government subsidies.
- Establish a fair cost-sharing model across centre, states, and private partners.

Conclusion

Delhi–NCR’s toxic air is not an unavoidable environmental fate. It is the result of fragmented governance, misplaced priorities, inadequate enforcement, and incomplete reforms. The technologies and policy pathways needed for cleaner air already exist. What remains missing is sustained political will, strong regional cooperation, and consistent administrative commitment. Emergency actions can manage extreme episodes, but only long-term structural reforms—clean transport, regulated industries, renewable energy adoption, scientific waste management, and viable alternatives for farmers—can permanently resolve the crisis. Delhi will breathe cleaner air when these reforms move from paper to consistent, accountable implementation.

Reader's Note — About This Current Affairs Compilation

Dear Aspirant,

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While every effort has been made to balance depth with brevity, please keep the following in mind:

1. Orientation & Purpose

This compilation is curated primarily from the UPSC Mains perspective — with emphasis on conceptual clarity, analytical depth, and interlinkages across GS papers.

However, the PrepAlpine team is simultaneously developing a dedicated Prelims-focused Current Affairs Series, designed for:

- factual coverage
- data recall
- Prelims-style MCQs
- objective pattern analysis

This Prelims Edition will be released separately as a standalone publication.

2. Content Length

Some sections may feel shorter or longer depending on topic relevance and news density. To fit your personal preference, you may freely resize or summarize sections using any LLM tool (ChatGPT, Gemini, Claude, etc.) at your convenience.

3. Format Flexibility

The formatting combines:

- paragraphs
- lists
- tables
- visual cues

—all optimised for retention.

If you prefer a specific style (lists → paras, paras → tables, etc.), feel free to convert using any free LLM.

4. Monthly Current Affairs Release

The complete Monthly Current Affairs Module will be released soon, optimized to a compact 100–150 pages — comprehensive yet concise, exam-ready, and revision-efficient.

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