

India's Path to Blue Skies

From Awareness to Action for Cleaner Air

Why in News?

- The **International Day of Clean Air for Blue Skies** is observed every year on **7 September**.
- The United Nations General Assembly designated the day in **2019** to create awareness about air pollution and encourage global action.
- India observes the day as **Swachh Vayu Diwas**.
- India has adopted a multi-sectoral approach to tackle air pollution through monitoring, emission control, cleaner mobility, and city-specific action plans.

The **National Clean Air Programme (NCAP)** covers **130 cities**.

In **FY 2025-26**, **108 cities recorded lower PM10 levels** compared with 2017-18. Of these, **72 cities achieved more than 20% reduction**, while **26 cities achieved more than 40% reduction**.

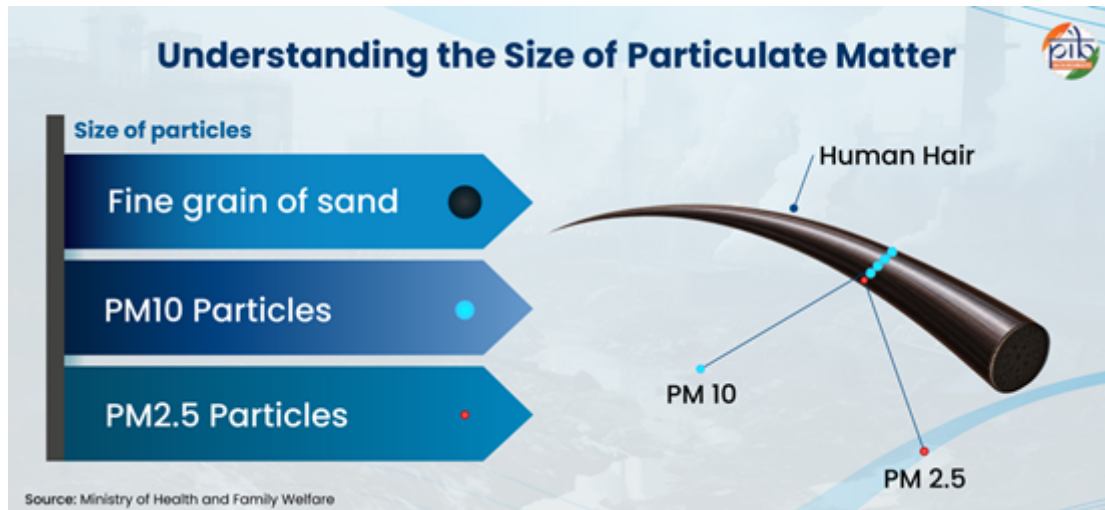
Air Pollution?

- Air pollution occurs when harmful gases and particles accumulate in the atmosphere at levels that can affect human health and the environment.

Major Sources

- Vehicular emissions
- Industrial activities
- Construction activities
- Road dust
- Waste burning
- Crop-residue burning
- Biomass combustion

Particulate Matter



Particulate Matter (PM) is one of the most important air pollutants.

- **PM10** refers to particles of 10 micrometres or less.
- **PM2.5** refers to particles of 2.5 micrometres or less.
- PM2.5 is finer and can penetrate deep into the lungs.
- Some fine particles can enter the bloodstream and cause serious health effects.

Air pollution can lead to **respiratory and cardiovascular diseases**.

It can also affect children, elderly people and other vulnerable groups.

It damages ecosystems and can reduce productivity and economic well-being.

India's Approach to Clean Air

- India follows a **multi-sectoral and coordinated approach** to control air pollution.
- The Central Government provides policies, regulations and financial support.
- State Governments and district administrations implement these measures on the ground.
- Urban Local Bodies play an important role in waste management, road-dust control and implementation of city-level action plans.

The overall approach focuses on:

Monitoring → Identifying pollution sources → Controlling emissions → City-specific action → Continuous assessment

Air Quality Monitoring in India

National Air Quality Monitoring Programme (NAMP) was initiated by the CPCB to assess the status and trends of ambient air quality.

Its objectives include:

- Monitoring air pollution levels.
- Identifying pollution trends.
- Checking compliance with air-quality standards.

- Assessing future changes in air quality.
- Understanding possible health hazards.

As of **March 2026**, India has **1,646 monitoring stations across 603 cities in 28 States and 7 UTs**.

The network includes both **manual and real-time monitoring stations**.

SAMEER

The **SAMEER mobile application and web portal** provide near-real-time AQI information for more than **292 cities**. It improves public awareness and transparency.

Major Air-Quality Monitoring Systems

CAAQMS -

Continuous Ambient Air Quality Monitoring System (CAAQMS) provides automated and real-time information about ambient air quality.

It monitors pollutants such as:

- PM_{2.5}
- PM₁₀
- SO₂
- NO_x
- CO
- O₃
- NH₃

AAQMS

Ambient Air Quality Monitoring System (AAQMS) includes both manual and automated monitoring. Manual monitoring involves collecting air samples and analysing them in laboratories.

OCEMS

Online Continuous Emission Monitoring System (OCEMS) monitors emissions directly from industrial units. It continuously sends data to regulatory authorities and helps check compliance with emission standards.

Air Quality Index

The **Air Quality Index (AQI)** converts complex pollution data into a simple number that citizens can understand.

It considers eight major pollutants:

PM₁₀, PM_{2.5}, NO₂, SO₂, CO, O₃, NH₃ and Lead.

AQI	Category
0-50	Good
51-100	Satisfactory
101-200	Moderate
201-300	Poor
301-400	Very Poor
401-500	Severe

The overall AQI reflects the pollutant showing the worst level of pollution.

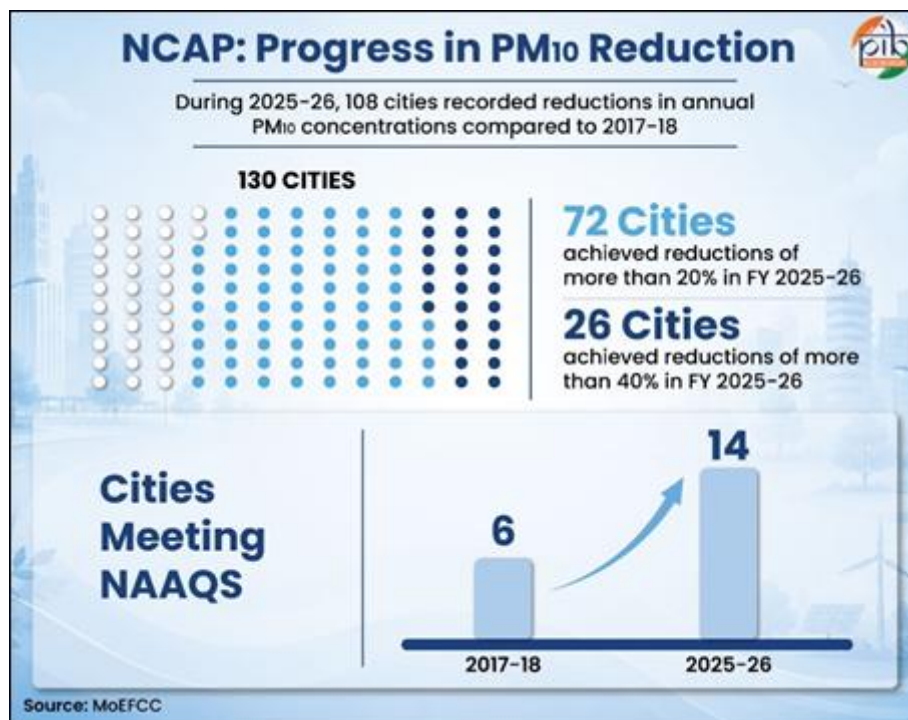
National Clean Air Programme

The **National Clean Air Programme (NCAP)** was launched in **2019** to address urban air pollution in mission mode.

It covers **130 cities** and promotes city-specific and source-specific clean-air action plans.

Key Achievements

- **24 States/UTs and 130 cities** have prepared clean-air action plans.
- **₹16,423.55 crore** was provided between FY 2019-20 and FY 2025-26.
- Around **₹11,575.54 crore**, or 70.5%, has been utilised.
- In FY 2025-26, **108 cities reduced annual PM₁₀ levels** compared with 2017-18.
- **72 cities** achieved more than 20% reduction.
- **26 cities** achieved more than 40% reduction.
- **14 cities** met National Ambient Air Quality Standards.



Digital Tracking and City Performance

PRANA Portal

PRANA tracks the physical and financial progress of NCAP. It improves transparency and helps governments monitor city-level clean-air action plans.

Swachh Vayu Survekshan

It is an annual assessment of NCAP cities. It encourages cities to compete, innovate and improve their air-quality management.

In **2025**, Indore, Amravati and Dewas topped the three city categories.

In **2026**, Lucknow, Rourkela and Kalinganagar topped the three categories.

Ward-level assessments have also been introduced to promote a **bottom-up approach**.

Sector-Wise Measures

A. Vehicular Pollution

India introduced **BS-VI emission standards** from April 2020.

Other measures include:

- Promotion of electric vehicles through **PM E-DRIVE**.
- Promotion of electric buses through **PM-eBus Sewa**.
- Expansion of EV charging infrastructure.
- Traffic decongestion and junction improvement.
- Vehicle scrapping facilities.
- Automated vehicle testing.
- Strengthening of the PUC system.
- Promotion of BS-VI, CNG and electric buses in Delhi-NCR.

These measures aim to reduce emissions and promote cleaner mobility.

B. Industrial Pollution

The Government has prescribed emission standards for industrial sectors.

CPCB has classified **419 industrial sectors and sub-sectors** based on their pollution potential.

Highly polluting industries are required to install **OCEMS**. Industries are also being encouraged to use cleaner fuels and pollution-control devices.

State Pollution Control Boards are responsible for monitoring and enforcing environmental standards.

C. Road Dust and Construction

Road and construction dust is an important source of PM10 pollution.

Measures include:

- Mechanised road sweeping.
- Dust-control measures at construction sites.
- Anti-smog guns.
- Dust Control and Management Cells.
- Online monitoring of construction sites.
- Better C&D waste management.
- Road improvement and greening of open spaces.

D. Waste Burning

The Government is strengthening waste-management rules to reduce open burning.

Extended Producer Responsibility (EPR) encourages producers to manage post-consumer waste. Recycling and scientific waste processing can reduce landfill pressure and pollution.

E. Crop-Residue Burning

The Government is promoting alternatives to stubble burning.

Measures include:

- Paddy-straw pelletisation.
- Torrefaction.
- Biomass co-firing in power plants.
- Crop-residue management machinery.
- Custom Hiring Centres.

Between 2018-19 and 2025-26, **₹4,233.84 crore** was provided for crop-residue management.

In 2025, stubble-burning incidents declined by **93% in Punjab and 91% in Haryana** compared with 2021.

Afforestation and Green Cover

Green spaces can improve environmental quality and strengthen ecological resilience.

Major Initiatives

- **Green India Mission** improves forest quality and carbon sequestration.
- **CAMPA** supports compensatory afforestation.
- **Nagar Van Yojana** aims to develop 1,000 urban forests and green spaces by 2026-27.
- **Aravalli Green Wall** promotes ecological restoration across Rajasthan, Gujarat, Haryana and Delhi.
- **Ek Ped Maa Ke Naam** promotes mass public participation in tree planting.

Institutions for Clean Air

CPCB

The **Central Pollution Control Board** is the main national pollution-control body. It monitors pollution and supports the implementation of environmental standards.

CAQM

The **Commission for Air Quality Management (CAQM)** coordinates air-pollution control in Delhi-NCR and coordinates GRAP implementation.

SPCBs

State Pollution Control Boards monitor industries, enforce environmental regulations and control pollution at the State level.

Graded Response Action Plan

GRAP is an emergency response mechanism for worsening air quality in Delhi-NCR.

It uses AQI levels, forecasts and scientific assessments to introduce progressively stronger measures.

Stage	AQI
Stage I - Poor	201-300
Stage II - Very Poor	301-400
Stage III - Severe	401-450
Stage IV - Severe+	Above 450

Measures can include restrictions on construction, industries and certain vehicles.

Key Challenges

Despite progress, several challenges remain:

- Pollution varies across cities and seasons.
- Pollution can cross administrative boundaries.
- Vehicular emissions remain a major urban problem.
- Road dust and construction continue to contribute significantly.
- Waste burning and crop-residue burning remain concerns.
- Industrial compliance requires continuous enforcement.
- Local bodies often have different levels of technical and financial capacity.
- Better source-apportionment and forecasting are needed.

Way Forward

India needs to move from **reactive pollution control to preventive and science-based management**.

Key priorities should include:

- Expanding real-time monitoring.

- Improving pollution forecasting and modelling.
- Strengthening source-apportionment studies.
- Promoting public transport and electric mobility.
- Improving waste and dust management.
- Strengthening industrial emission controls.
- Expanding urban forests and ecological restoration.
- Promoting cleaner technologies and fuels.
- Strengthening cooperation between Centre, States and Urban Local Bodies.
- Increasing citizen participation and environmental awareness.

Reference

[PIB](#)

