



## Delhi Air Pollution

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### Why in News

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Recently, the Union Minister for Environment, Forest and Climate Change has highlighted that the **air pollution is not a problem of Delhi and its corporations alone** but that of a big **airshed** around it that includes the National Capital Region (NCR).

### Key Points

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- **Airshed:**
  - In geography, an airshed is defined as a **region in which the atmosphere shares common features with respect to the dispersion of pollutants**; in other words, a **region sharing a common flow of air**.
  - With reference to the air pollution in and around Delhi, the airshed includes **Gurgaon, Faridabad, Ghaziabad, Noida, areas of Uttar Pradesh, Haryana and even Alwar in Rajasthan**.
- **Current Air Quality:**
  - The **Air Quality Index (AQI)** of Delhi has improved within the 'poor' category.
  - As per a forecast from the Central government's **System of Air Quality and Weather Forecasting And Research (SAFAR)** the AQI is expected to stay in the higher end of 'poor' to the lower end of 'very poor' category for the following days.
  - During the **lockdowns, Delhi saw among the cleanest air** since comprehensive records have been kept since 2015.

### Air Pollution in Delhi

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- Air pollution in Delhi-NCR and the **Indo Gangetic Plains** is a complex phenomenon that is dependent on a variety of factors.

- **Change in Wind Direction:**
  - October usually marks the withdrawal of **monsoons** in Northwest India and during this time, the **predominant direction of winds is northwesterly**.
  - The direction of the wind is northwesterly in summers as well, which **brings the dust** from northern Pakistan and Afghanistan.
- **Reduced Wind Speed:**
  - High-speed winds are very effective at dispersing pollutants, but **winters bring a dip in wind speed** overall as compared to in summers which makes the region **prone to pollution**.
  - Also, Delhi lies in a **landlocked region** which does not have a geographical advantage that eastern, western or southern parts of the country enjoy where the **sea breeze disperses the concentrated pollutants**.
- **Stubble Burning:**
  - **Stubble burning** in Punjab, Rajasthan and Haryana is blamed for causing a thick blanket of smog in Delhi during winters.
    - It **emits large amounts of toxic pollutants in the atmosphere which contain harmful gases** like methane (CH<sub>4</sub>), carbon monoxide (CO), volatile organic compounds (VOC) and carcinogenic polycyclic aromatic hydrocarbons.
  - Farm fires have been an **easy way to get rid of paddy stubble quickly and at low cost** for several years.
- **Vehicular Pollution:**
  - It is **one of the biggest causes** of dipping air quality in Delhi in winters and around 20% of **PM<sub>2.5</sub>** in winters comes from it.
- **Dust Storms:**
  - **Dust storms from Gulf countries** enhance the already worse condition. Dry cold weather means **dust is prevalent in the entire region, which does not see many rainy days** between October and June.
  - Dust pollution contributes to around 56% of **PM<sub>10</sub>** and the PM<sub>2.5</sub> load.
- **Dip in Temperatures:**
  - As temperature dips, the **inversion height is lowered and the concentration of pollutants in the air increases** when this happens.
    - Inversion height** is the layer beyond which pollutants cannot disperse into the upper layer of the atmosphere.
- **Firecrackers:**
  - Despite the **ban on cracker sales**, **firecrackers are a common sight on Diwali**. It may not be the top reason for air pollution, but it definitely contributed to its build-up.

- **Construction Activities and Open Waste Burning:**

**Large-scale construction** in Delhi-NCR is another culprit that is increasing dust and pollution in the air. Delhi also has **landfill sites for the dumping of waste and burning of waste** in these sites also contributes to air pollution.

## Major Measures Taken

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- **Subsidy to farmers for buying Turbo Happy Seeder (THS)** which is a machine mounted on a tractor that cuts and uproots the stubble, in order to reduce stubble burning.
- The **introduction of BS-VI vehicles**, push for **electric vehicles** (EVs), **Odd-Even** as an emergency measure and **construction of the Eastern and Western Peripheral Expressways** to reduce vehicular pollution.
- **Implementation of the Graded Response Action Plan** (GRAP) to tackle the rising pollution in the Capital. It includes measures like shutting down thermal power plants and a **ban on construction activities**.
- **Development of the National AQI** for public information under the aegis of the **Central Pollution Control Board** (CPCB). AQI has been **developed for eight pollutants** viz. PM<sub>2.5</sub>, PM<sub>10</sub>, Ammonia, Lead, nitrogen oxides, sulfur dioxide, ozone, and carbon monoxide.

## Way Forward

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- Appropriate political will and aware citizenry is a prerequisite to tackle the menace, otherwise, all the measures will remain on paper only and greater public transparency is essential to the success of winning the war on air pollution.
- There is no better watchdog than active citizens, which is why the pollution targets must be made public every year for their perusal and to be evaluated at the end of the year.
- Breathing clean air is a fundamental right of every Indian citizen. Therefore, human health must become a priority when it comes to tackling air pollution.

**Source: IE**