

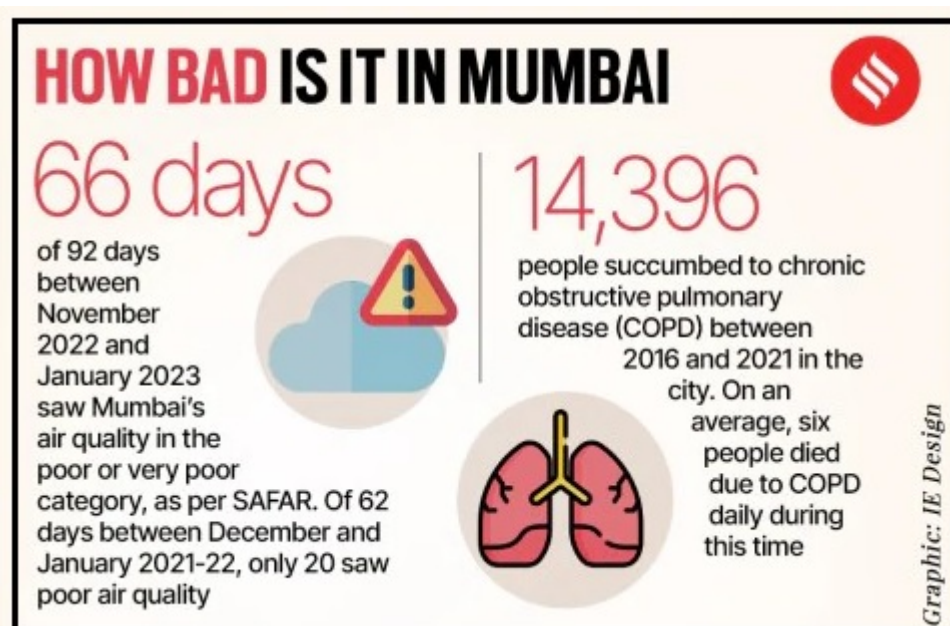
## Poor Air Quality in Mumbai

### Why in news?

Mumbai's air quality has deteriorated with the Air Quality Index (AQI) being above 200 (poor).

### What is the condition of air pollution in Mumbai?

- **Sources-** Vehicular emissions, industrial activities, construction dust, waste burning, and biomass burning.
- *Open waste burning* is the top pollution source identified by the Mumbai Air Pollution Mitigation Plan.
- **Status** - The *AQI Index* indicates that the air pollution level in Mumbai is *unhealthy*.
- Particulate matter level raised 7 times above the recommended level of World Health Organisation (WHO).



### Why air quality is deteriorating in Mumbai?

- **Climate change-** Increased warming in *Middle East* and *Arabian Sea* affects the wind patterns and the temperature, humidity, and rainfall over Mumbai and northwest India in all seasons.
- Increase in pre-monsoon heat waves and heavy rain spells during the summer monsoon in addition to the October heat and pollution caused the poor air quality in Mumbai.
- **Prolonged La Nina-** La Nina is a condition in which the sea surface temperatures in the *eastern Pacific Ocean become cooler than normal*.

- **2022** was part of the longest and strongest La Nina events on record that impacted the wind pattern of the city.
- **Temperature inversion**- The cooling of surface air and warming of upper air create a stable vertical variation in air temperature, which inhibits the mixing of air, making the air quality worse.
- **Lack of civic agencies support**- There was *no biomethanation plants* to process the waste and lack of segregation of wastes in slum clusters and non-gated societies contributed to the poor air quality.
- **Outdated regulations**- There was no significant increase in inspections and penalties for waste burning and the city's regulations remain unaltered for 17 years.
- **Coastal location**- Mumbai was considered largely immune to the issue of air pollution, and the associated problems of haze and smog due to its location near the coast.
- But the last 2 years have shown that this geographical advantage no longer offers reliable protection.

### What are the consequences of poor air quality?

- **Health impact**- It can cause respiratory problems, cardiovascular diseases, cancer, and premature death. It can also affect the mental health and cognitive abilities of people.
- **Children**- High prevalence of particulate matter 2.5 is associated with low birth weight, anaemia, and acute respiratory infections among children.
- **Pregnancy outcomes**- High levels of air pollution leads to low birth weight (LBW), stillbirth, foetal mortality, premature birth, and birth defects.

*Mumbai has witnessed a gradual rise in lung cancer fatalities from 621 in 2009 to 923 in 2021, reflecting a 48.6% increase over 12 years.*

### What measures were implemented for curbing Mumbai air pollution?

- The Brihanmumbai Municipal Corporation (BMC) issued a set of **guidelines** for the mitigation of air pollution in Mumbai and gave builders and contractors 1 month to acquire sprinklers and fogging machines at construction sites.
- The BMC has imposed a penalty of Rs 20,000 on vehicles like trucks found without proper tonneau covering, having dirty tyres, and spreading dust while carrying *construction debris*.
- Recycled water or water from local sources like lakes, ponds, wells and borewells is to be used for **road washing**.
- The BMC is also in the process of setting up a **command and control centre** to collect data using sensor-based air quality index monitoring devices.
- Many buses will be fitted with **vehicle-mounted filters** for removal of impurities from dust and other particles.
- The Maharashtra Pollution Control Board has issued notices to major companies in Mumbai to **reduce production by 50%** to control rising air pollution.

## What lies ahead?

- The need of the hour is decentralised waste management and bio-methanation plants to process the wastes.
- Mumbai also needs a holistic waste management policy and strict penalties to tackle the pollution problem.
- Long term strategies such as implementing emission standards, promoting public transport, enhancing green cover would be the potential solution.

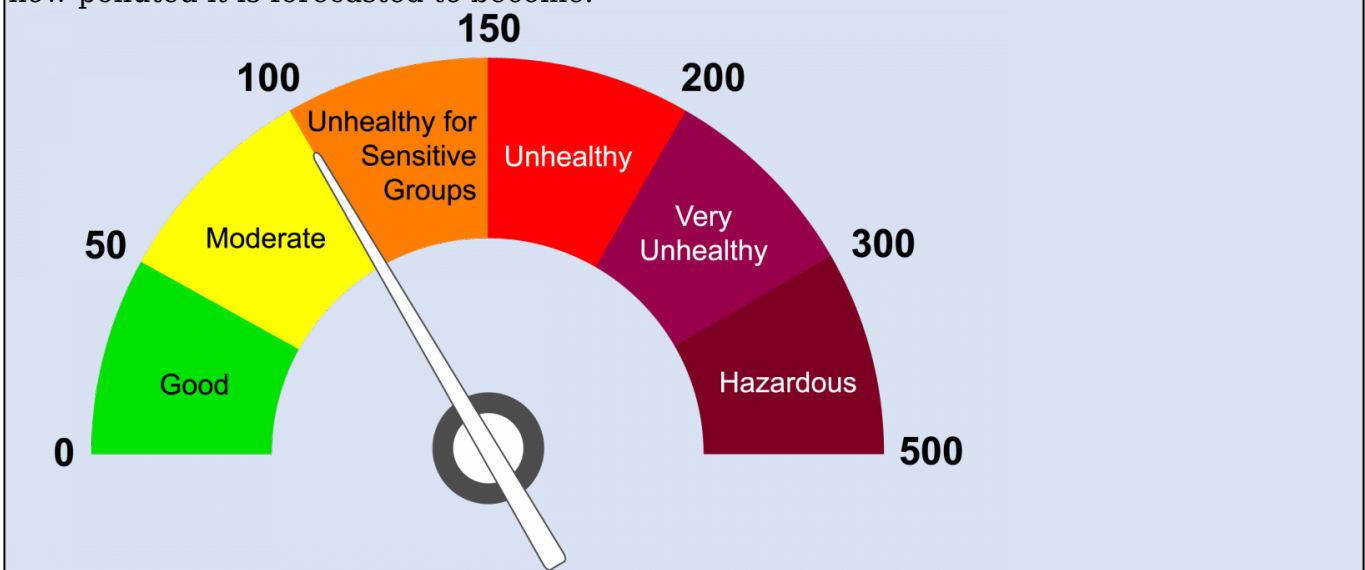
## Quick Facts

### System of Air Quality and Weather Forecasting (SAFAR)

- A dedicated Air Quality Information Service for Indian Metropolitan Cities to make India self-sufficient in providing frontier research based scientific accredited robust Air Quality Forecasting system.
- **Launched by-** Ministry of Earth Sciences
- **Implementation-** Indian Institute of Tropical Metrology, Pune and Indian Meteorological Department.
- **Aim-** To provide location specific information on air quality in near real time and its forecast 1-3 days in advance for the first time in India.
- **Coverage-** Delhi, Pune, Mumbai, Ahmedabad.

### Air Quality Index (AQI)

- AQI is a number used to communicate to the public how polluted the air currently is or how polluted it is forecasted to become.



## References

1. [Indian Express- Mumbai is witnessing poor air quality](#)
2. [The Hindu- October heat pollution](#)
3. [SAFAR- About SAFAR](#)



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