



## World Air Quality Report

**For Prelims:** World Air Quality Report, PM 2.5, System of Air Quality and Weather Forecasting and Research (SAFAR) Portal, Air Quality Index, Push for Electric Vehicles (EVs), Commission for Air Quality Management, Turbo HappySeeder (THS) Machine.

**For Mains:** Initiatives taken by India for Controlling Air Pollution, Ways to Enhance Air Quality in India.

### Why in News?

According to the [World Air Quality Report](#) prepared by IQAir, **Delhi ranked 4<sup>th</sup> out of 50 of the world's most polluted cities** in terms of **PM2.5 levels in 2022**.

- Out of 131 countries, India ranked 8<sup>th</sup> with a population weighted average PM2.5 level of **53.3 µg/m<sup>3</sup> in 2022**.

### What are the Key Findings of the Report?

#### ▪ About:

- IQAir, a Swiss air quality technology company, prepares the **annual world air quality reports** based on **data from monitoring stations** operated by governments and other institutions and organisations across the world.
  - The 2022 report is based on PM2.5 data **from 7,323 cities and 131 countries**.

#### ▪ Findings:

- **Chad, Iraq, Pakistan, Bahrain, Bangladesh** are the 5 most polluted countries in 2022.
- **Delhi** had an average **PM2.5 level of 92.6 µg/m<sup>3</sup> in 2022**, a little below the average of **96.4 µg/m<sup>3</sup> in 2021**.
  - The report makes a distinction between New Delhi and Delhi, with New Delhi having an annual average PM2.5 level of 89.1 µg/m<sup>3</sup>.
  - The [WHO guideline](#) for annual PM2.5 levels is **5 µg/m<sup>3</sup>**.
- **Lahore** was the most polluted city in the world, followed by **Hotan in China, and Bhiwadi in Rajasthan**.
- **New Delhi is the second most polluted capital** city in the world, with N'Djamena in **Chad** topping the list.
- A total of **39 Indian cities (including 'Delhi' and 'New Delhi')** are on the list of 50 of the world's most polluted cities based on annual average **PM2.5 levels in 2022**.

### What is PM 2.5?

- PM 2.5 is an **atmospheric particulate matter** of diameter of fewer than **2.5 micrometres**, which is around 3% the diameter of a human hair.
- PM 2.5 particles are small enough to **penetrate deep into the lungs** and even enter the bloodstream, and long-term exposure to PM 2.5 can lead to **lung cancer, heart disease, stroke**, and other chronic health conditions.

## What are Initiatives taken by India for Controlling Air Pollution?

- [System of Air Quality and Weather Forecasting and Research \(SAFAR\) Portal](#)
- [Air Quality Index](#)
- [Push for Electric Vehicles \(EVs\)](#)
- [Commission for Air Quality Management](#)
- [Turbo Happy Seeder \(THS\) Machine](#)

## How Air Quality Can be Enhanced in India?

- **Link Zero Emissions with Human Rights:** Air pollution needs to be **recognized more as a human right issue** rather than merely as an environmental challenge, and should be linked with the mission of **net zero emission** (by 2070).
  - The [UN General Assembly \(UNGA\)](#) has also passed a resolution recognizing the **right to a clean, healthy, and sustainable environment as a human right**.
- **Green-Transition Finance:** There is a need to create a financial architecture that can mobilise private finance for clean-air solutions in India. **Green sectors** such as clean energy and e-mobility offer tangible solutions to improve air quality.
- **Bio Enzyme-PUSA: A bio-enzyme called PUSA** has been developed by the Indian [Agriculture Research Institute](#) as a solution to stubble burning.
  - As soon as it is sprayed, this enzyme starts decomposing the stubble in 20-25 days, turning it into manure, which further improves the soil.
- **Ready-Made Concrete for Construction:** Construction dust is a major contributor to pollutants in air in expanding cities.
  - To deal with this situation, [Niti Aayog](#) has suggested the use of **ready-made concrete** that can minimise environmental impacts of building activities.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### Prelims

**Q. In the cities of our country, which among the following atmospheric gases are normally considered in calculating the value of the Air Quality Index? (2016)**

1. Carbon dioxide
2. Carbon monoxide
3. Nitrogen dioxide
4. Sulphur dioxide
5. Methane

**Select the correct answer using the code given below:**

- (a) 1, 2 and 3 only  
(b) 2, 3 and 4 only  
(c) 1, 4 and 5 only  
(d) 1, 2, 3, 4 and 5

**Ans: (b)**

### Mains

**Q. Describe the key points of the revised Global Air Quality Guidelines (AQGs) recently released by the World Health Organisation (WHO). How are these different from its last update in 2005? What changes in India's National Clean Air Programme are required to achieve revised standards? (2021)**

[Source: IE](#)

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