

# Curbing Air Pollution in India

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**Abstract:** Air pollution is an invisible killer that is prevalent all around us, preying on all age groups. From smog hanging over cities to smoke inside homes, air pollution poses a major threat to health and climate. The combined effects of outdoor and household air pollution cause about 7 million premature deaths every year, largely as a result of increased mortality from stroke, heart disease, COPD, Lung Cancer and acute respiratory infections.

**Keywords:** Air pollution, Delhi, COPD, Cancer

## 1. Introduction

Air pollution is an invisible killer that is prevalent all around us, preying on all age groups. From smog hanging over cities to smoke inside homes, air pollution poses a major threat to health and climate. The combined effects of outdoor and household air pollution cause about 7 million premature deaths every year, largely as a result of increased mortality from stroke, heart disease, COPD, Lung Cancer and acute respiratory infections.

The Global conference on Air Pollution and Health by WHO was the first ever Global event held on 30<sup>th</sup> October till 1<sup>st</sup> November 2018 to focus on both air pollution and health because of the following reasons-

- Air pollution claims 7 million lives a year
- Air pollution is a major driver of the NCD (Non Communicable Disease) Epidemic
- Air pollution accelerates climate change which directly or indirectly affects the health.

## 2. Burden of Pollution

Many different air pollutants can impact health- nitrogen oxide, carbon monoxide and ozone, among them. But the database classifies air pollution in two ways: By PM 2.5- particles smaller than 2.5 microns in diameter, By PM 10- particles less than 10 microns in diameter. The smaller particles i.e. 2.5 microns from sources like open flames and diesel exhausts can linger in the air longer and penetrate deeper into the lungs than larger particles, which is why they are the bigger concern for health officials.

WHO highlighted that air pollution is mainly responsible for Non Communicable Diseases causing an estimated 24% of all adult deaths from heart disease, 25% from stroke, 43% from COPD and 29% from Lung Cancer. Mumbai was ranked as the 4<sup>th</sup> most polluted megacity in the World, also being ranked the 63<sup>rd</sup> most polluted city among 859 cities considered by WHO around the world.

According to WHO Global Air Pollution database released in Geneva, India has 14 out of 15 most polluted cities in the world in terms of PM 2.5 concentrations- the worst being Kanpur with a PM 2.5 concentration of 173 micrograms per cubic meter followed by Faridabad, Varanasi and Gaya.

## 3. Facts about Air Pollution

A majority i.e. 91% of the world's population lives in places where air quality exceeds WHO guideline limits. India is home to 22 of the World's 50 most polluted cities. In 2015, WHO ranked Delhi as the most polluted city with no Chinese city in the list. In Delhi during the lead up to Diwali the particulate matter in the air tends to double from already foul levels.

- Children suffer the most- Almost 44% of school children in Delhi have reduced lung function as compared to 25.7%
- Pollution is responsible for premature deaths- In India, around 6,27,000 deaths are caused by outdoor pollutants every year.
- Over a 730 day period between 2012 and 2013 Delhi's air standards were "healthy" only for 8 days.
- Ozone at the ground level is a major contributor of smog.
- Household Air Pollution is an even worse public health emergency associated with over 1 million deaths a year.
- There have been 4.2 million deaths reported every year as a result of exposure to ambient (outdoor) air pollution.

## Clinical Symptoms

Air pollution affects health in the following ways-

- Breathing polluted air puts a person at a higher risk for asthma and other respiratory diseases
- When exposed to ground ozone for 6 to 7 hours, scientific evidence shows that healthy people's lung function decreased and they suffered from respiratory inflammation.
- Air pollutants are mostly carcinogens and they can put a person at risk of getting Cancer.
- Coughing and wheezing are the common symptoms observed among city inhabitants.
- Air pollutants damage the immune system, endocrine system and reproductive systems
- High levels of particle pollution have been associated with higher incidents of heart problems.

## 4. Prevention and Control

Delhi and India require more policies that target all the major sources of emissions—but these policies should also

provide alternatives. Sumit Sharma, director of Earth Science and Climate Change at The Energy and Resources Institute, warns that the bans and restrictions on fuels will work only if the use of cleaner fuels is incentivized and as new vehicular norms become effective, monitoring older vehicles should remain on the radar for action. Public transport options that are not based on fossil fuels should be increased.

## 5. Methods to Curb Air Pollution

One innovator and MIT graduate in India came up with the way to harvest black smoke. The pigmentation of the blackened smoke is actually unburned carbon released in complete combustion. So, according to Anirudh Sharma if that carbon is treated in a simple chemical process then high quality raw material to printing and ink industries can be made.

Methods taken by the authorities to tackle air pollution in the city-

- 1) Odd Even policy on vehicles to make a comeback from 13<sup>th</sup> November 2018
- 2) Delhi authorities enhance parking fees by 4 times
- 3) Health and Family welfare Ministry directs all hospitals to be prepared for the patient overload.
- 4) Ban on entry of trucks
- 5) Ban on civil construction and strict compliance of graded response action plan
- 6) Metro announces more trips, public transport buses to increase in number
- 7) Schools to be closed till the second week of November
- 8) The National Green Tribunal restricts industrial activities and bans burning of waste in Delhi.