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Very soon Bengaluru may need an 'Air' lift

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The Central Pollution Control Board guidelines permit us to install the equipment at a height of anywhere between 3 metres and 10 metres. (Representational Image)

By Anirudh Kumar

An analysis of the annual ambient air quality report of the Karnataka State Pollution Control Board (KSPCB) shows a decrease in air pollution levels in Bengaluru during the past two years. While the KSPCB data only reflects ambient air quality, the air we breathe could be more polluted than the data would have us believe, writes **Anirudh Kumar**

Would you believe this? Bengaluru's air quality has improved in the last two years, says Karnataka State Pollution Board (KSPCB). Its data indicates the ambient air quality index (AQI) of Bengaluru (measured across 15 stations) decreased from 96.2 in 2016 to 87.5 currently. Coarse Particulate Matter (PM 10) levels fell from 97.1 to 87.1 µg/m3 and fine particulate matter (PM 2.5) from 46.68 to 43.91 µg/m3 in the period.

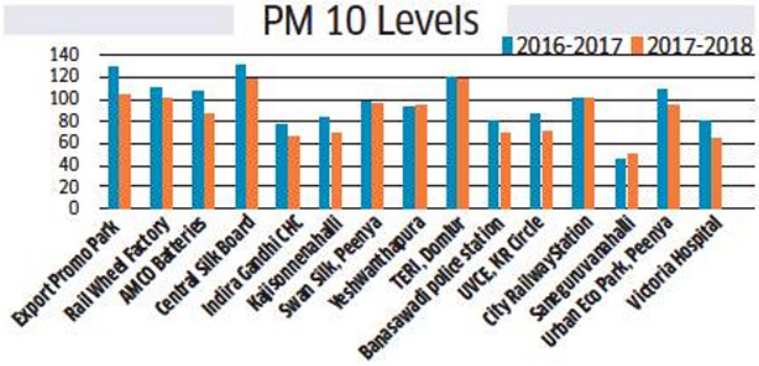
The greatest decrease in AQI and PM 10 levels was recorded at ITPL Whitefield, an area surrounded by industries, followed by stations at AMCO Batteries, Banaswadi police station and University Visvesvaraya College of Engineering. But, the KSPCB data may not reflect the entire picture. "The Pollution Control Board monitors air quality at an atmospheric level. What you are exposed to on the road, at the breathing level, is different from what is being monitored by the pollution control board," said independent environment researcher Aishwarya Sudhir.

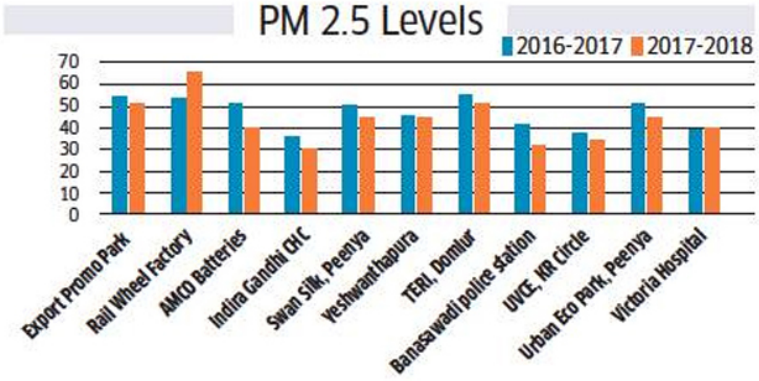
Sudhir argues that since traffic and road dust are major contributors to air pollution, the level of pollution on the road or in highly congested areas would be much higher. To prove the point, she carried out a study, 'Bengaluru's Rising Air Quality Crisis', in association with Climate Trends and Co Media Lab earlier this year. Her data proved that particulate matter value is much higher.

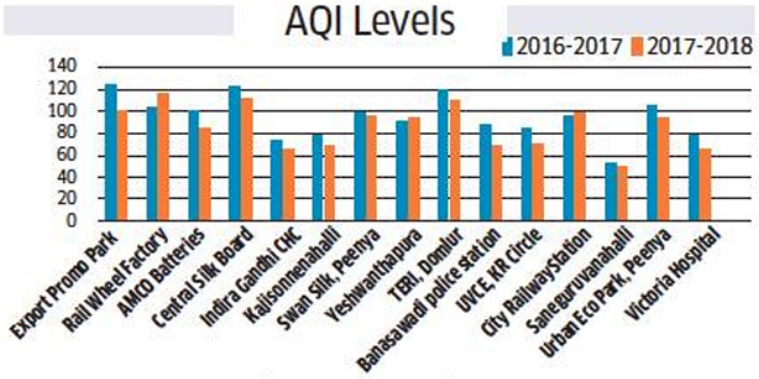
Data for her study was collected on a long stretch of road between Banashankari in south Bengaluru and Marathahalli in the east. The data, collected with low-cost air quality monitoring devices, measured people's exposure to air pollution in moving vehicles during peak hours.

Her report said the average PM 10 levels across 10 areas on the stretch was a whopping 307.8 µg/m3 in February. The average PM 2.5 value was 102.5 µg/m3. The figures were

far higher than the averages indicated by KSPCB data. Even on the stretch of road studied by Sudhir, there was wide disparity in the pollution levels.







PM 2.5 values only available for 11 stations. Average values were not available for four stations, including the one at Silk Board

INVALID DATA?

The KSPCB, however, does not acknowledge this independent study at the road level. Reason: The low-cost monitoring equipment used is not as per standards set by the Central Pollution Control Board.

KSPCB officials maintain the Board's air quality monitoring is accurate as far as ambient air quality is concerned. "Our study is only limited to ambient air quality and does not measure the exposure to pollution at the breathing level. The Central Pollution Control Board guidelines permit us to install the equipment at a height of anywhere between 3 metres and 10 metres. We follow CPCB norms," a senior officer said. Asked why the Board is not monitoring pollution at the breathing level, he passed the buck. "The health department can buy equipment and study people's exposure to pollution. It should be a collaborative effort," he said.

To get accurate data, the location of the monitors is important, said Ankit Bhargava, founder of environmental think-tank Sensing Local. "KPSCB's monitoring station at BTM Layout is located in a garden, away from the traffic and, therefore, does not show the entire picture," he pointed out.

DECREASE IN GREEN COVER

Secondary sources that support independent studies on air pollution, such as the one carried out by Sudhir, clearly indicate that pollution levels in the city are anything but falling.

For instance, the city's green cover has reduced from 68.2% in 1973 to 6.46% in 2017, according to the 'Frequent Floods in Bangalore: Causes and Remedial Measures,' a study carried out by IISc professor TV Ramachandra. Prof Ramachandra, who is certain that air pollution in Bengaluru has not decreased, pointed out that tree-cover fell from 7.81% to 6.46% just in a short period between 2016 and 2017.

"Trees are important in curbing air pollution, as they act as barriers for particulate matter and take in carbon dioxide," he said, stating that areas with a lower vegetation cover are bound to have more air pollutants.

The percentage of tree-cover for 2018 is not available, yet the decline from 2016-2017 shows an inverse correlation with KSPCB's air pollution data and number of trees. The KSPCB, however, would have us believe that reduction in road dust is the reason for better air quality.

"About 20% of the air pollution in Bengaluru is due to road dust. Over the years, with better road infrastructure, there has been a reduction in road dust, resulting in better air quality," the KSPCB officer said.

CARBON MONOXIDE

Carbon monoxide (CO) is a colourless, odourless and tasteless gas that can bind to haemoglobin in red blood cells and reduce a person's oxygen carrying capacity. It is one of the parameters for measuring air pollution, as per CPCB guidelines.

But the KSPCB has not measured CO at its manual monitoring stations (14 in number) in the last two years, making the AQI data incomplete. .

According to annual report by the transport department, the number of vehicles in Bengaluru increased by 21% between 2016 and 2018. Combustion of fuel in vehicles is one of the primary sources of CO. Logically, CO levels would be higher, but we do not know it because the KSPCB does not measure it.

Combating pollution is possible only after understanding it. In Bengaluru, it appears, there is no understanding of pollution at the level where people breathe. Hi-tech equipment are stationed at places that do not capture the real picture. Unless this is remedied, it can be said that we have not taken even our first step to fight air pollution. "There is a need for additional continuous monitoring stations, on-street monitoring to check pollution exposure at the breathing level, and exposure mapping studies to get a better representation of pollution levels across the city," said Ankit Bhargava.