

## Opinion

# Air quality in Bengaluru improves significantly post the lockdown

VP Lavanyaa/R Srikanth | Updated on May 06, 2020 | Published on May 06, 2020

f t in ✉ 🗨 0



This is a result of the much reduced vehicular traffic and closure of all construction and industrial activities

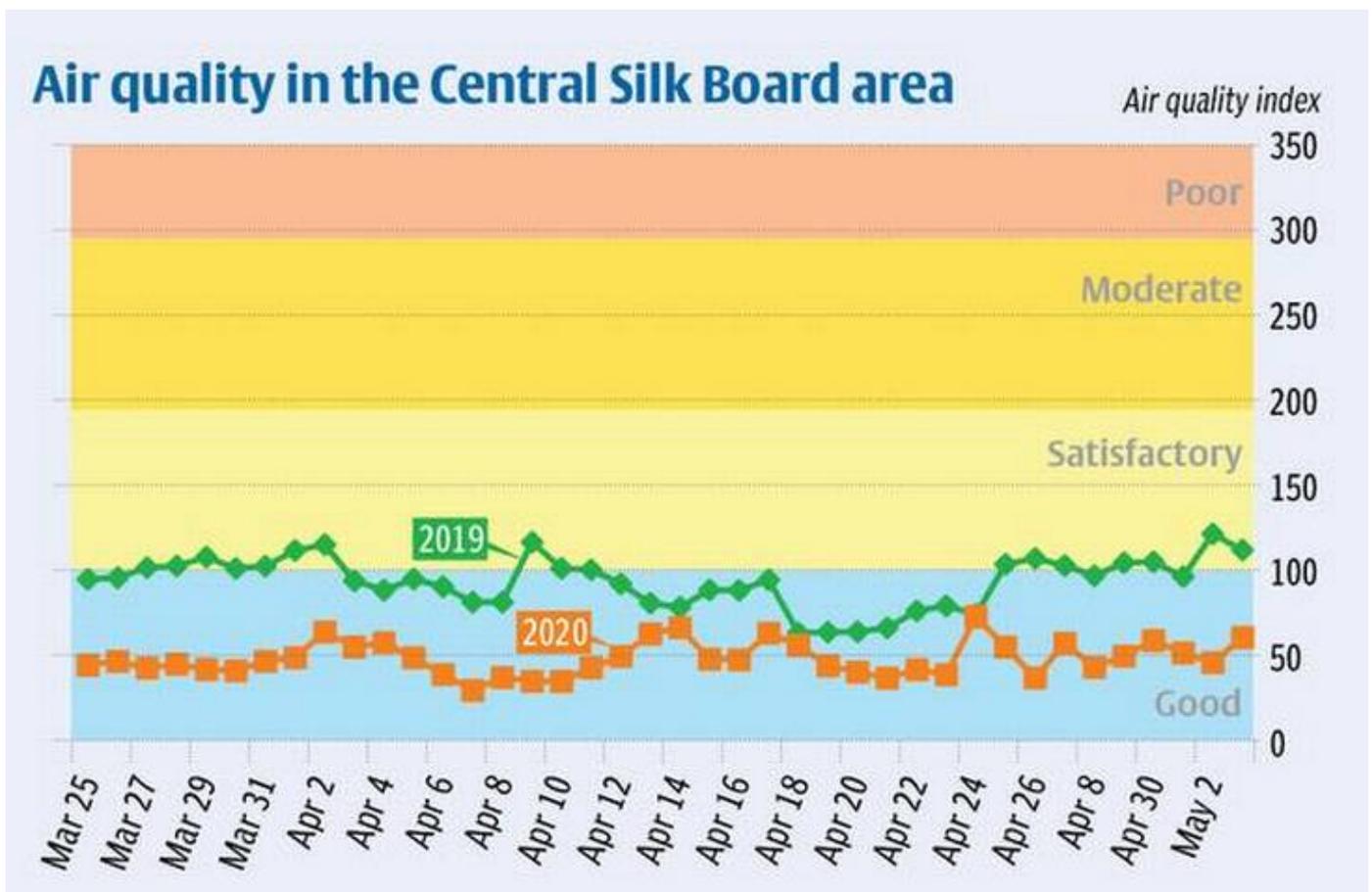
Bengaluru is the economic growth engine of Karnataka and contributes 35 per cent of the State GDP. The growth of Bengaluru has created job opportunities for thousands of Indians over the past two decades, resulting in the city witnessing a 47 per cent increase in population between 2001 and 2011. The city's growth has continued unabated from 2011 up to the present time.

Bengaluru has also seen an unprecedented increase in the number of motor vehicle registrations over the last 10 years with the number crossing 8.5 million as of January 2020. However, 82 per cent of the 1,763 km road network in the city is unable to accommodate the growing vehicular population.

The data collected from the Central and Karnataka State Pollution Control Boards through 22 Air Quality Monitoring (AQM) stations before the lockdown indicate that the monthly average PM-2.5 concentrations recorded in Bengaluru are generally less than the National Ambient Air Quality (NAAQ) standard.

While there is an urgent need for the Government of India to work with reputed institutions to estimate the incidence of death/disease exclusively due to air pollution in India there is no doubt that long term exposure to high concentrations of PM-2.5 causes human respiratory diseases and associated diseases.

One of the co-benefits of the ongoing lockdown (besides the opportunity to flatten the rising curve of infections) is the dramatic improvement in the air quality of various cities, including Bengaluru. For example, as shown in the Chart, the Air Quality Index (AQI), which is a composite measure of air quality (calculated using the values of both particulate matter pollutants as well as gaseous pollutants), in the Central Silk Board area has reduced to 50 (good category) during the lockdown period (March 25 to May 3) compared to a level just over 100 (satisfactory category) during the corresponding period in 2019.



The improvement in the air quality in the Peenya Industrial area is particularly sharp since almost all industries were inoperative during this period. Consequently, the AQI which used to exceed 150 (crossing over into the ‘moderately polluted’ category) on several days during 2019 was consistently around 50.

Further, the levels of NO<sub>x</sub> pollution in the Central Silk Board area (generated primarily by vehicular exhaust) reduced by 70-90 per cent during the lockdown period compared to the corresponding period in 2019. However, ground-level ozone (which is a secondary pollutant) has emerged as a significant pollutant on a few days between March 25 and May 3 in residential/mixed areas like BTM Layout and Hombegowda Nagar (near NIMHANS). This needs further investigation since ground-level ozone poses a health risk to children, the elderly, people with a pre-existing illness like asthma, and outdoor workers.

PM-2.5 more harmful

In Bengaluru, the AQI levels have been primarily driven by PM-10 concentrations. However, PM-2.5 particles have a longer lifetime suspended in the air and have a prolonged effect on human health. Unlike PM-10 particles, PM-2.5 particles retain their ability to penetrate deeper into the lungs and affect the pulmonary micro-circulation by even entering the blood capillaries.

Several studies conducted in the US and other countries have proved that PM-2.5 pollution is associated with diseases such as acute myocardial infarction, ischemic heart disease, arrhythmia, chronic obstructive pulmonary disorder (COPD), acute lower respiratory disease (ALRI) and lung cancer.

Therefore, the government must implement existing laws more effectively to restrict exposure to high PM pollution levels even during periods of rapid growth. This is relatively easy in a city like Bengaluru (compared to cities with multiple major sources of air pollution like Delhi) since vehicular exhaust and road dust are the major contributors to ambient PM concentrations in Bengaluru.

## Road ahead

The spatial distribution of PM-2.5 pollutant concentrations in Bengaluru during the ongoing lockdown (March 25 to May 3) and the corresponding period in 2019 fell by an average of over 50 per cent during the lockdown period. The primary reason for the steep reduction in air pollution during the lockdown is obviously the lean vehicular traffic movement and closure of all construction and industrial activities during the ongoing lockdown which is purely a necessary shock event driven by the unprecedented Covid-19 crisis.

Therefore, the Karnataka Government must ensure the use of more environment-friendly construction techniques, improve vehicle emission testing systems, incentivise people to scrap vehicles that are

over 15 years old, and expedite the construction of mass transit systems (including, ring railway and metro systems).

This has to be accompanied with a more user-friendly first mile-last mile connectivity systems using mini-buses and vans to increase usage of public transport in all areas of the city. This will not only reduce pollution but will also improve the quality of life of the urban poor who are forced to commute long distances to earn their daily wages. Expediting investments in public transport promotes public health as well as inclusive growth.

Lavanyaa is a Ph.D. Scholar, and Srikanth is Professor & Dean at National Institute of Advanced Studies, Bengaluru. The writers acknowledge their fellow-researcher, Aaron Christy's data inputs for this article

Published on May 06, 2020

coronavirus Bengaluru air pollution



COMMENTS

**Term Life Insurance - 1 Cr Life Cover @ 490/month\*. Get Free Quote!**

Term Plans -Compare & Buy Now! | Sponsored

**2 BHK Apartments starting from ₹64.22\* Lakhs in East Bangalore**

Sumadhura Group | Sponsored

**Getting Bored ? Play Rummy Now !**

Rummy Passion | Sponsored

**1 Crore Term Life Insurance @ 490/month. Get Free Quote!**

Term Plans -Compare & Buy Now! | Sponsored

**Paatal Lok actor Jaideep Ahlawat on life after coronavirus: The stupid will remain stupid**