

# Air quality to remain a problem in India despite pollution control policies

March 29 2019

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According to an independent study released today by the International Institute for Applied Systems Analysis (IIASA) and the Council on Energy, Environment, and Water (CEEW), more than 674 million Indian

citizens are likely to breathe air with high concentrations of PM<sub>2.5</sub> in 2030, even if India were to comply with its existing pollution control policies and regulations.

The study shows that only about 833 million citizens would be living in areas that meet India's National Ambient Air Quality Standards (NAAQS) in 2030 and that implementation failure could increase these numbers significantly. However, aligning sustainable development policies to the implementation of advanced emission control technologies could provide NAAQS-compliant air quality to about 85% of the Indian population. The study was released at a CEEW dialogue, *On Air: Pathways to Achieving India's Ambient Air Quality Standards*, held in New Delhi today (Friday, 29 March).

In 2015, more than half the Indian population—about 670 million citizens—were exposed to PM<sub>2.5</sub> concentrations that did not comply with India's NAAQS for PM<sub>2.5</sub> (40  $\mu\text{g}/\text{m}^3$ ). Further, less than 1% enjoyed air quality that met the World Health Organisation (WHO) benchmark limit of 10  $\mu\text{g}/\text{m}^3$ .

"A significant share of emissions still originates from sources associated with poverty and underdevelopment such as solid fuel use in households and waste management practices," explains Markus Amann, Air Quality and Greenhouse Gases Program director at IIASA.

In January 2019, the Indian government launched the National Clean Air Program (NCAP), a five-year action plan to curb air [pollution](#), build a pan-India air quality monitoring network, and improve citizen awareness. The program focuses on 102 polluted Indian cities and aims to reduce PM<sub>2.5</sub> levels by 20-30% over the next five years. The analysis conducted by researchers from IIASA and CEEW however suggests that NCAP needs to be backed by a legal mandate to ensure successful ground-level implementation of emission control measures. In the long-

term, NCAP also needs to be scaled-up significantly to ensure that rapid economic growth and meeting NAAQs are aligned.

Pallav Purohit, an IIASA researcher and lead author of the study said, "While current ambient PM<sub>2.5</sub> monitoring in India reveals high levels in urban areas, remote sensing, comprehensive air quality modeling, and emission inventories, suggest large-scale exceedances of the NAAQS, also in rural areas. Pollution from rural areas is transported into the cities (and vice versa), where it constitutes a significant share of pollution making the coordination of urban-rural and inter-state responses critical."

Hem Dholakia, a senior research associate at CEEW, and one of the authors of the study added, "The health burden of air pollution is significant in India. Limited control of air pollution will aggravate this burden in the future. The IIASA-CEEW study clearly shows that the policy choices of today will impact future air quality and its aftermaths. The central and state governments must do more to align air quality, climate change, and sustainable development goals in a resource efficient manner."

The study also found that the Indo-Gangetic plain, covering parts of states such as Punjab, Haryana, Uttar Pradesh, Bihar, and West Bengal, has the highest population exposure to significant PM<sub>2.5</sub> concentrations. This is mainly due to the high density of polluting sources and reduced ventilation by the obstructing presence of the Himalayas. Citizens living in parts of Bihar, West Bengal, Chhattisgarh, and Odisha are also exposed to high levels of PM<sub>2.5</sub>. The governments in these regions must design state-specific policies to comply with NAAQS and embrace a low-carbon growth model to ensure better air quality for its citizens.

Further, the study highlighted a stark variance in factors contributing to air pollution across the states. Solid fuel, including biomass combustion

for residential cooking, is the largest contributor in the major states of the Indo-Gangetic Plain. However, in Delhi and Goa, it contributes only a small amount due to enhanced access to clean fuels in these states. Instead, NO<sub>x</sub> emissions from transportation are major contributors to air pollution in these two states. Similarly, SO<sub>2</sub> emissions from power plants are dominant contributors to air pollution in Haryana and Maharashtra. In coming years, every state government must commission detailed scientific studies to better understand the sources contributing to air pollution in their cities.

Another challenge for many states is that emission sources that are outside their immediate jurisdiction contribute significantly to ambient pollution levels of PM<sub>2.5</sub>. For example, transboundary transport or crop burning are sources of secondary pollution in some states. Such states could achieve significant improvements in air quality only with a region-wide coordinated approach to reduce air pollution and strict on-ground enforcement to ensure compliance with emissions control measures.

The IIASA-CEEW study also recommends focusing on energy efficiency, enhanced public transport, increased use of cleaner fuels, improved agricultural production practices, and replacement of coal with natural gas and renewables in the power and industrial sector to achieve better air quality and meet multiple Sustainable Development Goals (SDGs).

Provided by International Institute for Applied Systems Analysis

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