

Filthy India air cutting 660 million lives short by three years

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India's filthy air is cutting 660 million lives short by about three years, while nearly all of the country's 1.2 billion citizens are breathing in harmful pollution levels, according to research published Saturday.

The new study by a team of [environmental economists](#) at U.S. universities highlights just how extensive India's air problems have become after years of pursuing an all-growth agenda with little regard for the environment. While New Delhi last year earned the dubious title of being the world's most polluted city, the problem extends nationwide, with 13 Indian cities now on the World Health Organization's list of the 20 most polluted.

That pollution burden is estimated to be costing more than half the population at least 3.2 years of their lives, according to the study led by Michael Greenstone of the University of Chicago and involving economists from Harvard and Yale universities. The most polluted regions, falling generally in northern India, are also among India's most populous.

"The extent of the problem is actually much larger than what we normally understand," said one of the study's co-authors, Anant Sudarshan, the India director of the Energy Policy Institute of Chicago. "We think of it as an urban problem, but the rural dimension has been ignored."

Added up, those lost years come to a staggering 2.1 billion for the entire

nation.

While "the conventional definition of growth has ignored the health consequences of air pollution," Greenstone said in a statement, "this study demonstrates that air pollution retards growth by causing people to die prematurely."

For the study, published in *Economic & Political Weekly*, the authors borrowed from their previous work in China, where they determined life expectancy dropped by three years for every 100 micrograms of fine particulate matter, called PM2.5, above safe levels. PM2.5 is of especially great health concern because, with the particles having diameters no greater than 2.5 micrometers, they are small enough to penetrate deep into the lungs.

The authors note, however, that their estimations may be too conservative because they're based in part on 2012 satellite data that tend to underestimate PM2.5 levels.

India has a sparse system for monitoring [air quality](#), with sensors installed in only a few cities and almost unheard of in the countryside. Yet rural air pollution remains high thanks to industrial plants, poor fuel standards, extensive garbage burning and a heavy reliance on diesel for electricity generation in areas not connected with the grid. Wind patterns also push the pollution onto the plains below the Himalayan mountain range.

India sets permissible PM2.5 levels at 40 micrograms per cubic meter, twice the WHO's safe level. Still, the study says, 99.5 percent of the population is living with air pollution levels above the WHO's limit.

India had developed extreme [air pollution](#) while relying on burning fossil fuels to grow its economy and pull hundreds of millions of people up

from poverty. More than 300 million Indians still have no access to electricity, with at least twice that number living on less than \$2 a day.

While India has pledged to grow its clean energy sector, with huge boosts for solar and wind power, it has also committed to tripling its coal-fired electricity capacity to 450 gigawatts by 2030. Yet there are still no regulations for pollutants like sulfur dioxide or mercury emissions, while fuel standards remain far below Western norms and existing regulations are often ignored.

To meet its goal for coal-fired electricity, the Power Ministry says the country will double coal production to 1 billion tons within five years, after already approving dozens of new coal plants. That will have predictable consequences for the country's already-filthy air, experts say.

The coal expansion plans through 2030 will at least double sulphur dioxide levels, along with those of nitrogen oxide and lung-clogging particulate matter, according to a study published in December by independent air quality research group Urban Emissions and the Mumbai-based nonprofit Conservation Action Trust.

Sarath Guttikunda of Urban Emissions, who was not involved in the study published Saturday, called it a solid effort to quantify some of the economic costs of pollution given "what information is available."

"Everything comes down to a lack of monitoring data in India," he said. "If you don't have enough monitoring information, you don't know how much is coming out in the first place."

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