A New Study on Air Pollution

The education minister of Rajasthan recently made the absurd assertion that cows exhale oxygen. In truth, cows exhale carbon dioxide like other mammals. Bovine species also contribute to global warming by emitting methane.

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What is the threat of Particulate pollution?

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- Methane (CH4) is one of the multitude of gases that can be harmful. A cow's methane emissions generate the equivalent of four tonnes of atmospheric carbon dioxide a year.
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- But **particulate pollution is more immediately lethal.** A new study in a journal estimates that particulate pollution contributed to at least 80,665 premature deaths of adults in Mumbai and Delhi in 2015. This is over twice as high as the total number of premature deaths (39,007) attributed to similar particulate matter in 1995.
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- Mortalities in Delhi rose from 19,716 in 1995 to 48,651 in 2015, while Mumbai saw deaths rise from 19,291 (1995) to 32,014.
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What is the economic cost of air pollution?

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- Air pollution is estimated to have cost the two cities around Rs 70,000 crore in 2015, or about **one per cent of India's gross domestic product.**
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- The estimated total cost increased from $2.680 billion to $4.269 billion for Mumbai and from $2.7 billion to $6.394 billion for Delhi, from 1995 to 2015.
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What does the new study tells us?

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- The study focused on two specific sizes of particles, **the PM10** (particulate matter of 10 microns) and **the PM2.5** (particulate matter of 2.5 microns).
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- The major causes of death were premature cerebro-vascular disease, ischemic heart disease, and chronic obstructive pulmonary disease, which contributed about 35.3 per cent, 33.3 per cent, and 22.9 per cent, respectively to attributable mortalities.
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- Air pollution was responsible for 23 million cases of restricted activity days (RAD), when productivity declined in Mumbai in 2015 and led to 64,037 emergency room visits in 2015. Delhi was worse, with 29 million cases of RAD and 120,000 emergency room visits in 2015.
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- Disability-adjusted life years (DALY) - Is **an estimate of years lost due to various illnesses**. This measure for illnesses caused by air pollution doubled in Delhi between 1995 and 2015. Chronic bronchitis and mortality shared about 95 per cent of the total DALYs.
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What is the most threatening picture?

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- The researchers hope that the results would help policymakers undertake cost-benefit analyses of air pollution management programmes in Mumbai and Delhi.
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- One of the more depressing conclusions is that **PM10 levels would have to decline by 44 per cent in Mumbai and 67 per cent in Delhi in order to simply ensure that the health situation does not get worse**.
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What did the policymakers do?

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- Policymakers are close to desperation. Delhi tried **the “odd-even” formula** but that didn’t help much.
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- Mumbai has started experimenting with **outdoor air-purification units** placed at busy traffic junctions. This is called the Wind Augmentation and Purifying Units. It is hoped that this will reduce local pollution considerably, by 40 to 60 per cent.
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- Delhi is setting up an experiment involving **decommissioned jet engines**. Researchers hope that jet engines placed strategically near thermal power plants can blast PM straight up, by creating a sort of virtual chimney.
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- The emissions from a 1,000-megawatt coal-thermal plant are equivalent to emissions from roughly 500,000 cars. If this experiment works, it could be used to reduce smog from thermal plants.
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Conclusion:

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- Instead of making absurd assertions about cow-breath, **policymakers need to focus on the real and present dangers of atmospheric pollution.**
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- That study is frightening in what it reveals about the damage caused by pollution in India’s two largest, most polluted cities. There are plenty of other, highly polluted Indian cities as well. The mind boggles about the scale of damage across the entire country.
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