# Mitigating air pollution: planetary health awaits a cosmopolitan moment

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We live in a so-called risk society. The renowned sociologist and social thinker Ulrich Beck defines a risk society as an inescapable structural condition of advanced industrialisation.[1] No doubt, industrialisation has transformed economies across the world, but it has also altered the balance of the ecosystem.[2] Air pollution, an outcome of industrialisation as well as urbanisation has emerged as an important risk factor for human health and beyond. Air pollution is a leading contributor to non-communicable diseases and accounts for 22% of all deaths from cardiovascular disease, 26% of deaths from ischaemic heart disease, 25% of deaths from stroke, 53% of deaths from chronic obstructive pulmonary disease, and 40% of deaths from lung cancer.[3] WHO estimates that more than 90% of the world's population is at risk of air pollution exposure, resulting in 7 million deaths annually worldwide.[4] Most of these deaths occur in low-income and middle-income countries, particularly India. In 2017 alone, air pollution caused 8% of the total disease burden and 11% of premature deaths in people younger than 70 years in India.[5]

Exposure to air pollution and the associated disease burden is heterogeneous among and within countries. This heterogeneity can be explained by sociocultural, demographic, and economic factors. Understanding this heterogeneity is necessary for formulating strategies and interventions to minimise morbidity and mortality in countries with a high burden of air pollution, such as India. Exploring this heterogeneity, in *The Lancet Planetary Health*, the India State-Level Disease Burden Initiative Air Pollution Collaborators,[5] present a comprehensive analysis of exposure to air pollution, covering 31 geographical units of India, as part of the Global Burden of Disease, Injuries, and Risk Factors Study 2017. They show that ambient air pollution and ambient ozone air pollution concentrations have escalated, whereas household air pollution has declined in most but not all states. Furthermore, death and disability-adjusted life-years (DALYs) attributable to air pollution and the potential gain in life expectancy if global and national limits were adhered to were estimated. Most states, particularly those in the north of India, and 77% of the population of India were exposed to an annual population-weighted mean $PM_{2·5}$ greater than the 40 μg/m³ stipulated limits set by the Central Pollution Control Board of India.

In addition to providing evidence on the state-level variation of exposure to air pollution, the study reports that if the air pollution exposure levels were lower than the minimum threshold associated with health loss, average life expectancy would increase by 1·7 years (95% uncertainty interval [UI] 1·6–1·9) at the country level, with the smallest increase of 1·0 (0·9–1·1) in Kerala and Goa and the largest increase of 2·5 years (2·0–2·8) in Rajasthan. These estimates give cause for optimism but also urgency for crafting the policies mitigating air pollution by the central and state Governments in India. However, the authors found no single state in India that complied to either WHO-stipulated guidelines (ie, $PM_{2·5}$ ≤10 μg/m³), or the guideline of India's top pollution regulator, the Central Pollution Control Board (≤40 μg/m³). The state-specific findings of the study help to develop state-specific policies, plans, and interventions to address the challenges of air pollution, particularly in the northern states of India where the exposure and risks of air pollution are much higher.

Rapid urbanisation,[6] policies promoting basic manufacturing, and conventional agricultural practices continue to fuel air pollution in India. For example, stubble burning from Punjab and Haryana contributes to nearly 30% of pollution in Delhi. To mitigate air pollution in India, the authors recommended multisectoral engagement across the states and in the country as a whole. However, such engagement tends to be in silos within and outside of the Governments. Health is a state-level matter in India—ie, the primary responsibility of public health decision making lies with the state Governments that are often run by different political parties. This limits the central Government's ability to develop and implement national action plans such as the National Clean Air Programme.[7] Critics argue that "*in India's chaotic democracy, where poverty and unemployment are often seen as bigger concerns, different branches of government run by competing political parties sometimes have little incentive to collaborate on pollution*".[8] Besides multisectoral engagement, advocacy for

stopping stubble burning, reducing numbers of vehicles, adoption of new air-purifying technologies and building air-purifying towers in highly polluted cities, optimising the country's strength in satellite technology for monitoring air pollution, and making national ambient air quality standards legally binding in all regions of the country[9] could be some of the vital strategies to help reduce exposure to air pollution and related mortalities. Also, provision for local evidence and credible data on public health effects of air pollution, which policy makers seek for informed decision making,[10] help the policy process.

The World Bank estimates that costs associated with health care and productivity losses due to air pollution in India are about 8·5% of GDP in 2013[8] and an estimated $5·11 trillion in welfare losses globally.[4] The alarming exposure levels, productivity losses, and notably, the gains achieved from controlling air pollution in India and globally indicate that yet another cosmopolitan moment is beginning. Cosmopolitan moments are short points in time in which the global community join and act together to create new institutions and mechanisms that they have individually not been willing to introduce. At such a point, there is a brief window of opportunity that supports the collective management of global public goods in new ways. Air pollution is a global health crisis and a response to this crisis is needed.[11,12]

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We declare no competing interests.



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