

Air pollution costs trillions and holds back poor countries, says World Bank

Study finds dirty air takes huge economic toll on poor countries and costs the world more than \$5tn annually in lost work days and welfare costs

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Air pollution costs the world trillions of dollars a year and severely impedes development in many countries, according to the World Bank.

In a major study (pdf) of the economic costs of indoor and outdoor pollution, the bank found that in 2013 - the year from which the latest available estimates date - China lost nearly 10% of its GDP, India 7.69% and Sri Lanka and Cambodia roughly 8%.

Rich countries are also losing tens of billions of dollars a year through lost work days and welfare costs from premature deaths. Dirty air was found to cost the UK \$7.6bn (£5.6bn) a year, the US \$45bn and Germany \$18bn.

Zimbabwe, Malawi and Central African Republic were among the world's least polluted countries, but Liberia had the lowest lost labour costs among developing countries (\$25m).

Uruguay lost just 0.03% of its GDP, costing it \$17m, but Iceland - with only 400,000 people, little industry and costs of just \$3m - emerged as the cleanest country in the world overall.

Drawing on data from the Institute for Health Metrics and Evaluation, the bank said that air pollution now kills 5.5m people a year prematurely, or one in 10 people worldwide.

It is the fourth leading cause of premature deaths worldwide behind smoking, diet and obesity, and is known to lead to cancers and heart, lung and respiratory diseases. Air pollution is responsible for more than six times the number of deaths caused by malaria.

Without including the costs of treating illnesses linked to pollution, the bank calculated that in 2013 premature deaths alone cost the global economy about \$225bn in lost work days.

But the cost to the world economy rose to more than \$5tn when welfare costs, which are based on what people were prepared to pay to avoid dying from air pollution, were calculated.

Even these figures may not reflect the full cost of air pollution, said the bank.

“The figure could be very much more if it included health costs. We did not include the costs of [morbidity] illnesses caused by pollution,” said lead author Urvashi Narain, a senior environmental economist for the institution. “The scale of the problem is truly daunting. The poor are more likely to live in polluted areas and are less able to access healthcare.”

The report, entitled *The Cost of Air Pollution: Strengthening the Economic Case for Action*, stressed the toll on poor countries. “The health risk posed by air pollution is the greatest in developing countries,” said the authors. “In 2013 about 93% of deaths and non-fatal illnesses attributed to air pollution worldwide occurred in these countries, where 90% of the population was exposed to dangerous levels of air pollution.”

Outdoor air pollution was growing in many countries, said the report, reflecting the massive rise in car numbers. But it said billions of people in developing countries continue to depend on burning solid fuels such as wood, charcoal, coal and dung in their homes for cooking and heating.

“Air pollution is not just a health risk but also a drag on development. By causing illness and premature death, [it] reduces the quality of life. By causing a loss of productive labor, it also reduces incomes in these countries,” said the authors.

The study drew a link between economic development and air pollution. From 1990 to 2013, welfare losses nearly doubled and labour income losses increased by 40%, despite countries having made great gains in economic development and health outcomes.

In low-income countries, declining death rates were more than offset by population growth and greater total exposure to polluted air.

“Ambient air pollution is becoming a greater challenge,” said the report. “Since the 1990s, exposure to [it] has grown in most countries with some of the greatest increases in the heavily populated, fastest-growing regions, including south Asia and east Asia and the Pacific.”

By 2013, about 87% of the world’s population was living in areas that exceeded safe levels recommended by the World Health Organisation, added the authors, who warned that the poorest were most affected.

“Apart from the sheer magnitude of the costs, the disproportionate impacts on the poorest segments of the population make air pollution a threat to shared and inclusive prosperity. The poor are more likely to live and work in polluted environments, but they are less able to avoid exposure or self-protect,” said the report.

“In the US, research dating back to the 1970s has documented how toxic facilities and sources of air pollution have tended to be sited near poor minority communities.”

While pollution-related deaths mainly strike young children and the elderly, premature deaths also result in lost income for working-age men and women. The report found that annual work income losses cost the equivalent of almost 1% of GDP in south Asia. In east Asia and the Pacific, where the population is ageing, labour income losses represent 0.25% of GDP, while in sub-Saharan Africa, where air pollution impairs the earning potential of younger populations, such losses represent the equivalent of 0.61% of GDP.

When looking at fatalities across all age groups through the lens of “welfare losses” - an approach commonly used to evaluate the costs and benefits of environmental regulations in a given country context - the aggregate worldwide cost of premature deaths in 2013 was more than \$5tn. In east and south Asia, welfare losses related to air pollution were the equivalent of about 7.5% of GDP.

“Air pollution is a challenge that threatens basic human welfare, damages natural and physical capital, and constrains economic growth,” said Laura Tuck, vice-president for sustainable development at the World Bank.

. This article was amended on 9 September 2016. An earlier version said incorrectly that the report drew on World Health Organisation data; it was IHME data.

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