

# AIR POLLUTION

## CHOKING ASIA'S PROSPECTS

Outdoor and indoor air pollution is a serious issue for the region, increasing inequalities and holding back socioeconomic development.

ADB

### ECONOMIC EFFECTS



Globally, ground level ozone reduces crop yields by **up to 50 million tons a year**.<sup>1</sup>



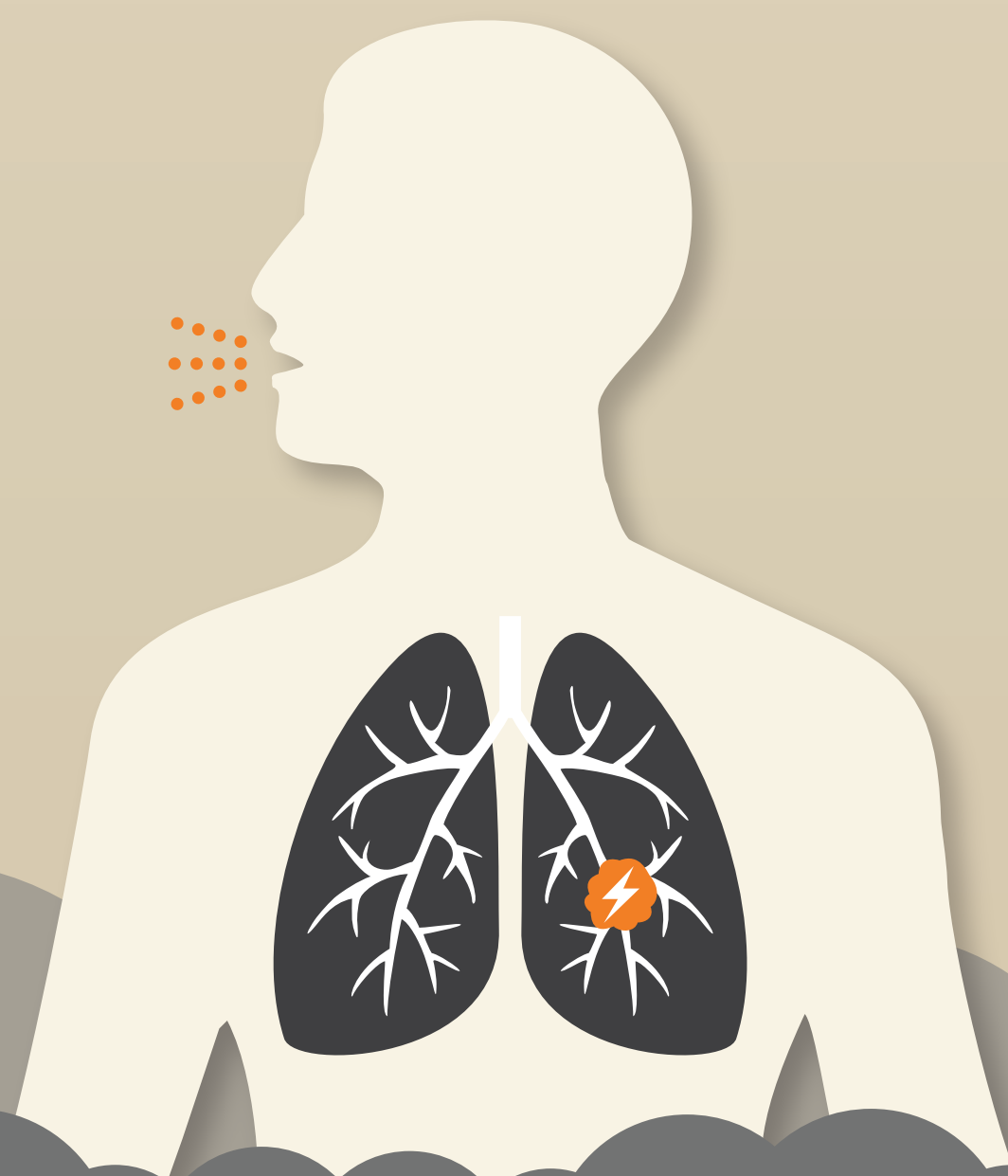
In Asia and the Pacific, the costs of health effects of air pollution are estimated at **\$1.7 trillion in 2016**, equivalent to 10% of the region's gross domestic product.<sup>2</sup>



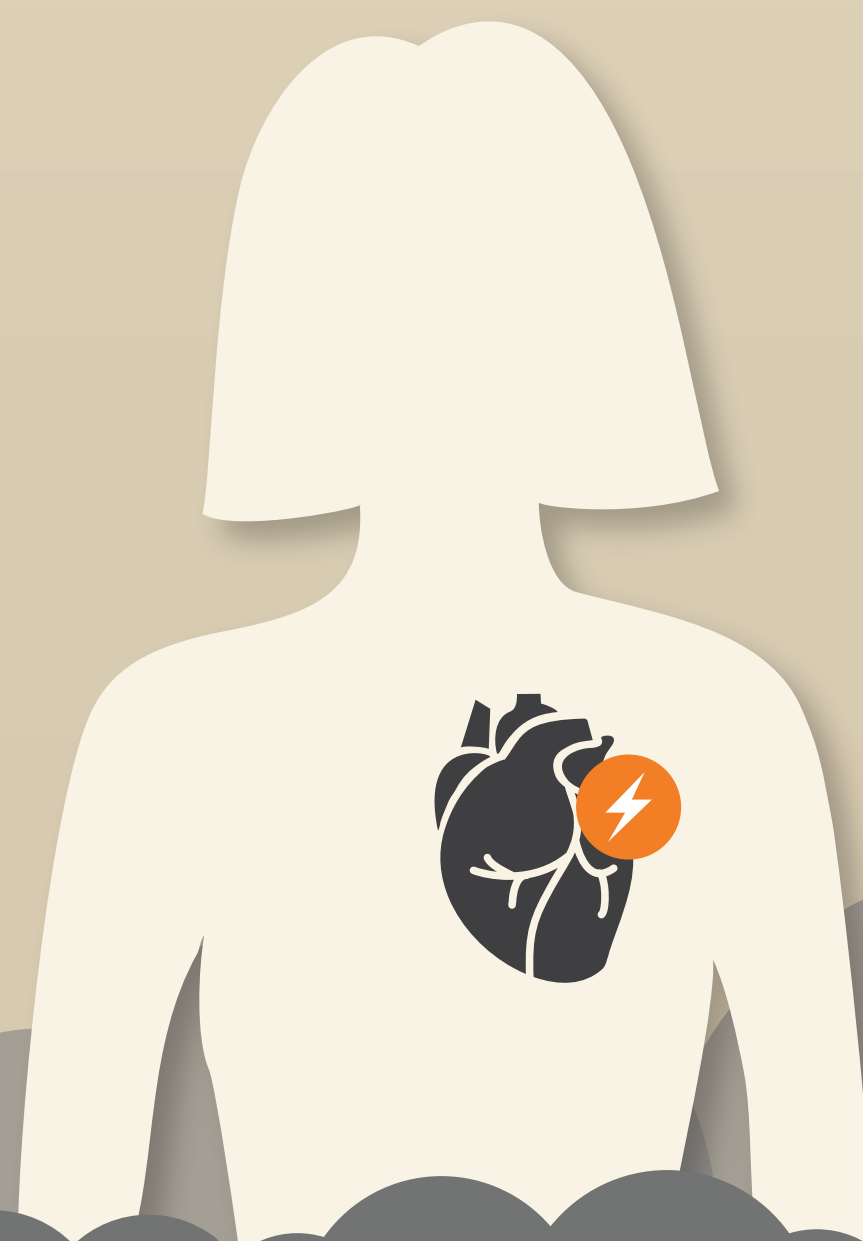
By 2060, outdoor air pollution could be responsible for a reduction in global economic output of **\$330 per person**.<sup>3</sup>

### HEALTH EFFECTS

The combined effects of outdoor and indoor air pollution are a critical determinant of health, causing both mortality and morbidity.<sup>4</sup>



Lung cancer, chronic obstructive pulmonary disease, pneumonia, asthma, other respiratory infections



Stroke, heart disease, impaired immune response, diabetes



Miscarriage, premature birth, fetal growth, low birth weight



Children's neurological development, autism, dementia



**More than 80%** of people living in cities are exposed to air quality levels that pose a risk to their health.<sup>1</sup>



Globally, there are **7 million premature deaths a year** from air pollution-related diseases, with **4 million** coming from Asia.<sup>1</sup>



Indoor air pollution is responsible for **45% of pneumonia deaths** in children under 5 years old, and women are also vulnerable.<sup>5</sup>



In 2010–2015, **29 countries in Asia** saw an upward trend in the number of deaths caused by outdoor particulate matter pollution.<sup>6</sup>



Under a “business-as-usual scenario” the number of deaths due to air pollution will rise by **over 50% in the next 3 decades**; the sharpest increases will be in the cities of Asia.<sup>7</sup>

In this material, “\$” refers to United States dollars.

<sup>1</sup> UN Environment. 2018. Air Pollution: Know Your Enemy. 10 September. <https://www.unenvironment.org/news-and-stories/story/air-pollution-know-your-enemy>.

<sup>2</sup> Asian Development Bank. 2017. *Air Pollution in Asia and the Pacific: Health effects and costs of PM 2.5 exposure in 2016*. Manila. October.

<sup>3</sup> OECD. 2016. Air pollution to cause 6–9 million premature deaths and cost 1% GDP by 2060. 9 June. <https://www.oecd.org/environment/air-pollution-to-cause-6-9-million-premature-deaths-and-cost-1-gdp-by-2060.htm>.

<sup>4</sup> World Health Organization. 2018. Household Air Pollution and Health. 8 May. <https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>; UN Environment. 2018. Air Pollution and Health: Know Your Enemy. 10 September. <https://www.unenvironment.org/news-and-stories/story/air-pollution-know-your-enemy>.

<sup>5</sup> World Health Organization. 2018. Household Air Pollution and Health. [www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health](https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health)

<sup>6</sup> ADB Health Sector Group.

<sup>7</sup> J. Lelieveld et al. 2015. The contribution of outdoor air pollution sources to premature mortality on a global scale. *Nature*. 525. pp. 367–371.; C. A. Pope III et al. 2011.

Lung Cancer and Cardiovascular Disease Mortality Associated with Ambient Air Pollution and Cigarette Smoke: Shape of the Exposure-Response Relationships. *Environmental Health Perspectives*. 119. pp. 1616–1621.