



UNEA-2 FACT SHEET:

AIR POLLUTION

Why air pollution matters

Millions of people die prematurely every year because of long-term exposure to air pollutants. Sources of air pollution include traffic (especially diesel vehicles), industrial sectors (from brick making to oil and gas production), agriculture, power plants, cooking and heating with solid fuels (e.g. coal, wood, crop waste), forest fires and the open burning of municipal waste and agricultural residues.

By reducing air pollution, countries can lower the burden of disease from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases. Lowering outdoor air pollution also reduces emissions of co-emitted CO₂ and short-lived climate pollutants such as black carbon particles and methane, thus contributing to the fight against climate change.

The state of play

- Each year, about **seven million** people die as a result of indoor and outdoor air pollution, while many more suffer illnesses that damage their health, and reduce their productivity and wellbeing.
- Indoor smoke is a serious health risk for some **three billion** people who cook and heat their homes with solid fuels.
- In Africa, indoor air pollution is responsible for around **600,000** premature deaths every year.
- In Africa, the rapid growth of its cities and megacities will likely trigger a large increase in air pollutant emissions from burning fossil fuels and traditional biomass. This could contribute **50 per cent** of global emissions in 2030, according to some estimates.
- The cost of air pollution in 2010 was estimated at **\$1.4 trillion** in China and **\$0.5 trillion** in India.
- In Europe, exposure to air pollution from road transport costs about **\$137 billion** per year and the harm caused by air pollution from the 10,000 largest polluting facilities – including through lost lives, poor health and crop damage – was about **\$140-230 billion** in 2009.
- Particulate matter (PM) consists of a complex mixture of solid and liquid particles of organic and inorganic substances suspended in the air. PM is considered to be the most damaging air pollutants. Chronic exposure to particles contributes to the risk of developing cardiovascular and respiratory diseases, as well as of lung cancer.
- More than **50 per cent** of premature deaths due to pneumonia among children under the age of five are caused by the PM inhaled from household air pollution.
- The largest contributors to urban outdoor air pollution include motor transport, small-scale manufacturers and other industries, the burning of solid fuel for cooking and heating, and coal-fired power plants.
- Road transport is estimated to be responsible for up to **30 per cent** of particulate emissions in European cities and up to **50 per cent** of PM emissions in the Organisation for Economic Co-operation and Development (OECD) countries – mostly due to diesel traffic.
- Evidence suggests that road transport accounted for **50 per cent** of the cost of the health impacts of air pollution – both death and illness – in OECD countries in 2010 – close to **\$1 trillion**.

- Ground-level ozone is another major air pollutant, which damages human health and crops. It is estimated that global losses to soybean, maize and wheat crops due to ground-level ozone pollution could be **\$17-35 billion** per year by 2030.

The benefits of action

- In Sub-Saharan Africa, using low-sulphur fuels and cleaning up vehicles, including motorcycles, could result in health benefits that add up to **\$43 billion** of savings over a ten-year period.
- In the United States, the direct economic benefits of reducing PM and ground-level ozone pollution under the 1990 Clean Air Act Amendments are estimated to be up to **90 times** the cost of implementing them. About **85 per cent** of the economic benefits would result from fewer premature deaths linked to reducing PM in the outdoor environment, with the early deaths of **230,000** people avoided in 2020 alone.
- Significantly reducing black carbon and methane emissions could potentially cut the rate of climate change in half for the next several decades, as well as reduce air pollution related deaths by as much as **2.4 million** per year while avoiding annual crop losses of **50 to more than 100 million tonnes**.
- Transport: to reduce air pollution the world needs to shift to clean modes of transport; prioritize rapid urban transit, walking and cycling; and shift to cleaner heavy duty diesel vehicles and low emission vehicles and fuels.
- Industry: clean technologies that reduce industrial smokestack emissions and the improved management of urban and agricultural waste, including the use of captured methane from waste sites as biogas, will also reduce air pollution.
- Urban planning: improving the energy efficiency of buildings and making cities more compact will reduce air pollution.
- Power generation: increased use of low-emissions fuels and renewable combustion-free power sources (like solar, wind or hydropower); co-generation of heat and power; and distributed energy generation (e.g. mini-grids and rooftop solar power generation) will lower air pollution.
- Municipal and agricultural waste management: waste reduction, waste separation, recycling and reuse or waste reprocessing; and improved methods of biological waste management such as anaerobic waste digestion to produce biogas will reduce air pollution.

Change across the globe

- In 2014, China announced plans to take up to **six million** vehicles that do not meet emission standards off the roads. A cap was placed on new vehicle sales in 2013. About **31 per cent** of the air pollution in Beijing comes from vehicle exhaust fumes.
- Successful international cooperation to phase out leaded petrol under the UNEP-led Partnership for Clean Fuel and Vehicles (PCFV) suggest that the global fleet is becoming less polluting with respect to heavy metals.
- When the PCFV was launched in 2002, approximately half of the world's countries used leaded petrol. As of October 2013, only **six** countries were still using a small amount. The PCFV phase-out avoids an **estimated 1.3 million** premature deaths per year.
- The Ruiru Youth Community Empowerment Program in Kenya has developed a less polluting firewood-burning stove that is up to **60 per cent** more efficient than the open fires traditionally used in rural areas.
- In several countries, low-cost monitoring devices are being developed to measure air pollution levels and exposures. Smartphone apps, for example, allow users to look at real-time data on outdoor air pollution.