

# Science for Environment Policy

## How to control and mitigate the effects of pollution on public health: Six *Lancet* Commission recommendations

**Pollution is the world's largest environmental cause of disease and premature death.** The Lancet Commission on pollution and health brought together leaders, researchers and practitioners from the fields of pollution management, environmental health and sustainable development to elucidate the full health and economic costs of air, water, chemical and soil pollution worldwide. By analysing existing and emerging data, the Commission reveals that pollution makes a significant and underreported contribution to the global burden of disease, particularly in low- and middle-income countries. The Commission also provides six recommendations to policymakers and other stakeholders looking for efficient, cost-effective and actionable approaches to pollution mitigation and prevention.

**It is estimated that pollution is responsible for 16% of all deaths worldwide. In the most severely affected countries, pollution-related disease is responsible for more than 25% of deaths. It is important to note that pollution disproportionately kills the poor and the vulnerable.** Nearly 92% of pollution-related deaths occur in low- and middle-income countries, and pollution-related disease is most prevalent among minority and marginalised communities in countries of every income level. Children are also especially vulnerable to the health effects of pollution.

Despite all this, the Lancet Commission notes that pollution<sup>1</sup> has often been neglected in public-health discourse and policy, especially in low- and middle-income countries. In addition, the health effects of pollution have been underestimated in calculations of global disease burden. Pollution in low- and middle-income countries caused by industrial emissions, vehicular exhaust and toxic chemicals has been particularly overlooked in both international development and global health agendas<sup>2</sup>.

The researchers note that pollution has significant negative effects on human health (e.g. pollution-related morbidity and mortality), the economy (e.g. productivity losses and healthcare spending) and the environment (e.g. climate change and ecosystem disruption). These effects are likely to increase as world pollution continues to rise. At present, ambient air pollution, chemical pollution and soil pollution are all increasing, with the most marked rises occurring in rapidly developing and industrialising low- and middle-income countries.

The Commission has published six recommendations aimed at raising global awareness of pollution, ending neglect of pollution-related disease and mobilising to confront pollution. These include:

1. **Make pollution prevention a high priority nationally and internationally and integrate it into country and city planning processes.** Governments at all levels should establish short-term and long-term targets and timetables. Useful policy tools include legally mandated regulation, the polluter-pays principle (when the party responsible for producing pollution is responsible for paying for the damage it causes) and an end to subsidies and tax breaks for polluting industries.
2. **Mobilise, increase and focus the funding and international technical support dedicated to pollution control.** Climate change and non-communicable disease (NCD) control programmes could be expanded to include pollution control, and new funding mechanisms developed. Financing and technical assistance programmes should be tracked and measured to assess cost-effectiveness and enhance accountability.

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1. This study focuses strictly on pollution-related disease, as opposed to the World Health Organization's broader definition of 'environment', which includes risk factors — such as road accidents, noise and ecosystem changes — not included in the Lancet Commission's analysis.

2. Due to regional differences, it is worth emphasising that this global study is not necessarily applicable to EU Member States, being some of the most environmentally conscious areas in the world.

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(continued)

3. **Establish systems to monitor pollution and its effects on health.** Even limited data, collected at national and local levels, can help document pollution and track progress towards short- and long-term targets. Pollution control metrics should be integrated into [Sustainable Development Goals \(SDG\) dashboards](#) and other monitoring platforms to facilitate sharing. The Commission recommended formation of a new Global Pollution Observatory that will aggregate, analyse and archive data on pollution and pollution-related disease worldwide and disseminate its findings widely to leaders of governments, the media and the global public.
4. **Build multi-sectoral partnerships for pollution control.** Broad-based partnerships across several government agencies and between governments and the private sector can advance pollution prevention and accelerate the development of clean energy sources and technologies. Cross-ministerial collaborations that bring together health, environment, finance, energy, agriculture, development and transport ministries are also advisable.
5. **Integrate pollution mitigation into planning processes for NCDs.** Although more than 70% of the diseases caused by pollution are non-communicable diseases, interventions against pollution are barely mentioned in the World Health Organization's (WHO) [Global Action Plan for the Prevention and Control of Non-Communicable Diseases](#). According to the researchers, these interventions should comprise a core component of the NCD action plan. The contribution of pollution to NCDs is especially great in low- and middle-income countries, where it is larger than the contributions of alcohol, tobacco or diet.
6. **Research pollution and pollution control.** Additional research is required that explores emerging causal links between pollution and disease; quantifies the global burden of disease associated with chemical pollutants of known toxicity (e.g. lead, mercury, chromium, arsenic, asbestos, benzene); identifies and characterises the adverse health outcomes caused by new and emerging chemical pollutants (e.g. developmental neurotoxicants, endocrine disruptors, novel insecticides, chemical herbicides, pharmaceutical wastes); identifies and maps pollution exposures, particularly in low- and middle-income countries; improves estimates of the economic costs of pollution and pollution-related disease; and quantifies the health and economic benefits and cost-effectiveness of interventions against pollution.

Importantly, the Commission highlights that reducing pollution is both feasible and cost-effective. Many high- and middle-income countries have successfully reduced pollution while still increasing their gross domestic product (GDP), which demonstrates that it is possible to control pollution without stifling economic growth. Moreover, pollution mitigation and prevention can also yield significant economic benefits — for example, in the USA, for every dollar invested in air pollution control since 1970, an estimated \$30 (€25.87) has been returned to the economy in benefits.

In addition to benefits to human health and the economy, pollution control will advance attainment of many of the WHO's [SDGs](#), including: improving health ([SDG 3](#)), improving access to clean water and improving sanitation ([SDG 6](#)), promoting social justice ([SDG 10](#)), building sustainable cities and communities ([SDG 11](#)), slowing the pace of climate change ([SDG 13](#)) and protecting water and land ([SDGs 14](#) and [15](#)).



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