

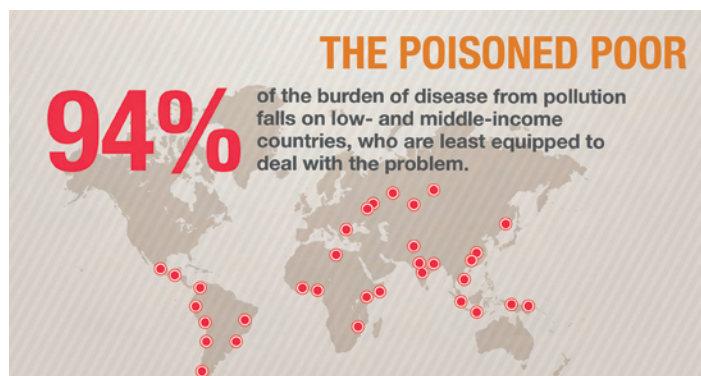
Pollution is the Largest Cause of Death in the World

It has severe implications for sustainable development, exacerbates the poverty cycle, harms the environment and biodiversity, causes lifelong disability and stagnates economic growth.

Health Impact: Disease, Disability and Death

Environmental pollution—contamination of air, water or soil caused by the mismanagement of chemicals and wastes—is the largest cause of disease and death in the developing world.

Particulates from power plants, cars and trucks pollute outdoor air. Cook stoves poison indoor air. Mercury and other heavy metals from industry and mining contaminate soil and water. Sewage pollutes local river systems. Pollution

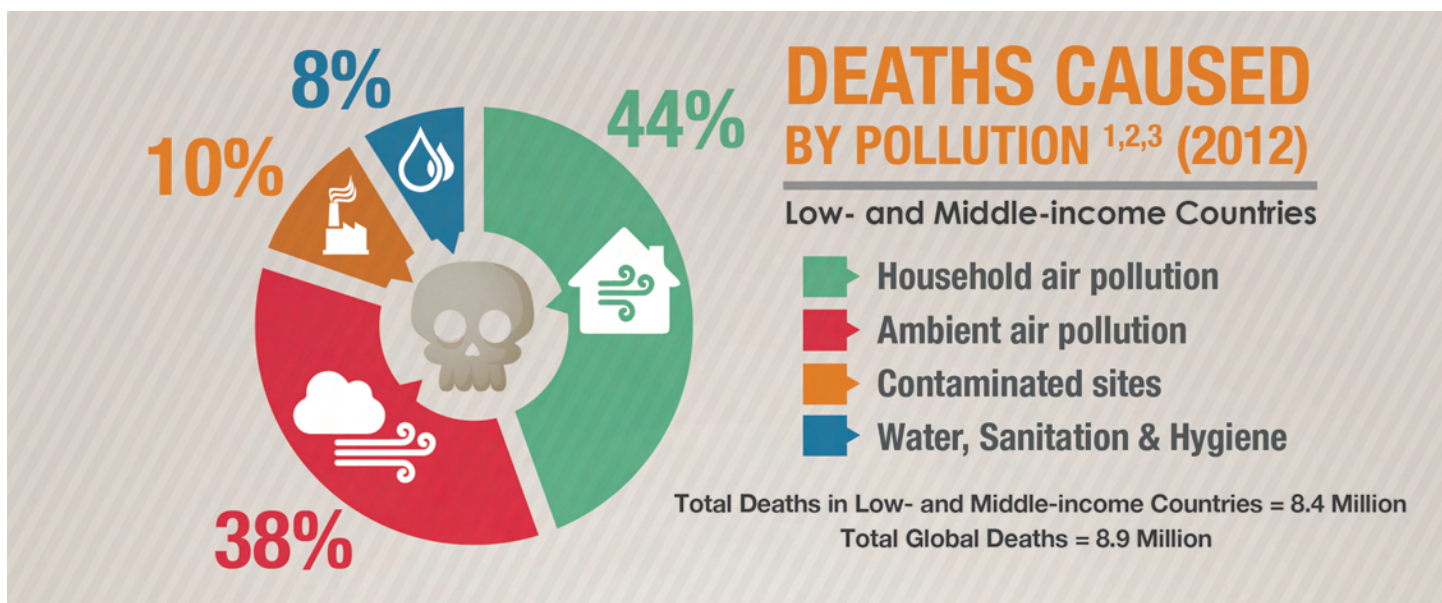


is a risk factor that causes heart disease, stroke, cancers, infections, and developmental and neurological disabilities, among other diseases.

The World Health Organization calculates that in 2012 exposures to polluted soil, water and air resulted in an estimated 8.9 million deaths worldwide —8.4 million of those deaths occurred in low- and middle-income countries (LMICs).^{1,2} By comparison, HIV/AIDS causes 1.5 million deaths per year⁴ and malaria and tuberculosis fewer than 1 million each.^{5,6}

More than one death in seven worldwide is the result of environmental pollution.⁷

Children are especially vulnerable to environmental pollution.^{8,9} Prenatal exposures to pollution can cause birth defects, developmental and neurological disabilities,



damage to the immune system, and reproductive impairment.¹⁰ Moreover, exposures in early life have been shown to increase risk for chronic non-communicable diseases in adult life such as hypertension, heart disease, stroke, diabetes, kidney disease and cancer.^{11–13}

Poverty and the Poisoned Poor

The overwhelming majority—94 percent—of the burden of disease from pollution falls on low- and middle-income countries, those least equipped to deal with the problem. Pollution has for the most part been controlled in wealthy countries, but poor people in developing countries, especially women and children, continue to be poisoned, suffer lifelong disabilities, and die prematurely from pollution.

The impact on poverty flows from the fact that most, if not all, toxic sites tend to be in poorer neighborhoods. The WHO estimates that 98% of adults and 99% of children affected by exposure to lead reside in low- and middle-income countries.¹⁴ The people living and working in contaminated areas, such as backyard battery and e-waste recyclers, artisanal gold miners or workers in polluting industries—do so out of necessity, not choice. They often know they are exposing themselves and their families to deadly chemicals, but short-term survival trumps longer-term consequences.

Anything that reduces those exposures means an improvement in the health dimension of poverty. Healthier environments lead to healthier workers, families and children, who can be more productive members of society.

Economic Impact: Stymied Growth and Productivity

The mismanagement of chemicals and waste and pollution are extremely costly. Exposures to chemicals, waste and pollution, such as lead and methyl mercury, can cause significant losses in IQ, and with it a loss in economic productivity. A 2005 study in the U.S.A.¹⁵ found that 600,000 children suffered loss of IQ annually as a result of mercury pollution, leading to economic productivity losses of \$8.7 billion annually.¹⁶

Addressing chemicals, waste, and pollution problems promotes, rather than inhibits, economic growth. Solutions can increase access to valuable resources, such as more efficient recovery of lead from battery recycling, or reclamation of land in urban areas. Technical solutions that offer more profit to small-scale players through improved, clean technology transfer can contribute to poverty reduction. Enacting solutions now can avoid longer-term economic constraints, such as mental disability and cognitive impairment of children and rising health care costs from illnesses associated with toxic exposures.

Environmentally sound management of chemicals and waste is a critical crosscutting issue that impacts all areas of Sustainable Development.

RECOMMENDED ACTIONS

- Ensure that measurable and technically rigorous indicators on chemicals, wastes, and pollution are included in the SDGs monitoring framework
- Integrate the sound management of chemicals, wastes, and pollution as a contributor to sustainable development into the Declaration as part of the Post-2015 Development Agenda

References

1. Air pollution estimates for 2012. Available at http://www.who.int/phe/health_topics/outdoorair/databases/en/
2. Contaminated sites data extrapolated from GAHP database
3. WHO 2012 http://www.who.int/water_sanitation_health/gbd_poor_water/en/
4. WHO. HIV deaths per country 2012. <http://apps.who.int/gho/data/node.main.623>
5. WHO. Malaria deaths 2012. <http://www.who.int/mediacentre/factsheets/fs094/en/>
6. WHO. Number of deaths due to tuberculosis, excluding HIV. 2012. Available at <http://apps.who.int/gho/data/view.main.57016?lang=en>
7. World Health Organization. Environmental burden of disease: Country profiles. WHO, Geneva (2014) [http://www.who.int/quantifying_ehimpacts/national/countryprofile/intro/en/\(accessed July 9, 2014\).](http://www.who.int/quantifying_ehimpacts/national/countryprofile/intro/en/(accessed%20July%209,%202014))
8. Miller RW. How environmental hazards in childhood have been discovered: carcinogens, teratogens, neurotoxicants, and others. *Pediatrics* 2004 Apr;113 (4 Suppl):945-51
9. National Academy of Sciences. Pesticides in the Diets of Infants and Children. Washington, DC: National Academies Press, 1993.
10. Grandjean P, Landrigan PJ. Neurobehavioural effects of developmental toxicity. *Lancet Neurol* 2014; 13:330-338.
11. Barker DJ. 2007. The origins of the developmental origins theory. *J Intern Med* 261:412-417.
12. World Health Organization and United Nations Environment Programme. State of the Science on Endocrine Disrupting Chemicals. WHO: Geneva, 2012. Available at: [http://www.environmentalhealthnews.org/ehs/news/2013/pdflinks/EDC%20summary%20layout%20040213-3.pdf\[accessed 28 November 2014\].](http://www.environmentalhealthnews.org/ehs/news/2013/pdflinks/EDC%20summary%20layout%20040213-3.pdf[accessed%2028%20November%202014])
13. Barouki R, Gluckman PD, Grandjean P, Hanson M, Heindel JJ. Developmental origins of non-communicable disease: implications for research and public health. *Environ Health* 2012; 27:11-42.
14. Global health risks: mortality and burden of disease attributable to selected major risks." World Health Organization. 2009.
15. Trasande L, Landrigan P and Schechter C. Public health and economic consequences of methyl mercury toxicity to the developing brain. *Environmental Health Perspectives* 113:5 (2005): 590
16. This data helped US Government implement more strict standards regarding coal-fired power plant mercury emissions, and eventually contributed to a US Federal Court decision to overturn a proposed Clean Air Mercury Rule.