

Global Environmental Health and Sustainable Development

How does environmental health affect economic development?

A healthy population is essential for economic development. The poorest people on the planet tend to suffer most from the health effects from exposures to environmental hazards like air pollution and impure water. In turn, disease and disability related to polluted environments slows and blocks economic development. In addition to its toll on human suffering, illness carries a significant financial burden in the form of healthcare expenditures and lost productivity. For example, unhealthy children often cannot attend or perform well in school, and unhealthy adults cannot work or care for their families.



How does economic development affect environmental health?

Economic development has led to tremendous improvements in people's well-being, but often at the expense of the environment. Industrialization has contributed to pollution of air and water, changing dietary patterns, and shifting patterns of transportation and land use. Exposures to air and water pollutants directly increase disease. Similarly, dietary changes and decreased levels of physical activity, resulting from transportation and other work and lifestyle changes, are contributing to global epidemics of obesity, diabetes, and associated diseases. Globalization and the large geographic scale over which rapid industrialization is occurring make these environmental health problems global health problems.

What is sustainable development?

Sustainable development is frequently defined as development that meets the needs of present generations without compromising the ability of future generations to meet their own needs. As evidence of the harm to health and well-being from widespread environmental degradation and global climate change grows, communities and governments are placing greater emphasis on assuring that economic development is achieved in a sustainable way.

How can environmental health be integrated into sustainable development?

Protecting and creating healthy environments is a critical component of sustainable development. Environmental health can be integrated into sustainable development by:

- Improving environmental quality for the poorest populations with the greatest burden of environmental diseases, by reducing exposures to air pollution in homes and villages from biomass burning, and providing clean water and sanitation.
- Identifying efforts to address environmental problems that can also provide health benefits. For example, creating environments that encourage biking and walking for transportation reduces greenhouse gas and toxic air pollution emissions (environmental benefit) and increases physical activity (health benefit).

- Recognizing that some policies, practices, and technologies designed to promote sustainability and economic development may have unintended adverse environmental health effects, and attempting to prevent or mitigate these before they are implemented.



How is NIEHS integrating environmental health and sustainable development?

- Participation in the Global Alliance for Clean Cookstoves
<http://www.niehs.nih.gov/about/od/programs/cookstoves/index.cfm>
- Development of a Global Environmental Health Program
<http://www.niehs.nih.gov/about/od/programs/geh/index.cfm>
- Development of a Climate Change and Human Health Program
<http://www.niehs.nih.gov/about/od/programs/climatechange/index.cfm>
- Participation in the United States Global Change Research Program's Interagency Crosscutting Group on Climate Change and Human Health
<http://www.globalchange.gov/what-we-do/climate-change-health>
- Sponsorship of studies on health, climate change, and sustainable development
<http://www.niehs.nih.gov/research/supported/programs/climate/index.cfm>
<http://www.thelancet.com/series/health-and-climate-change>

Environmental Factors and the Burden of Disease in Developing Countries

Many of the diseases that are most closely associated with poverty are related to the environment.

- The World Health Organization estimates that roughly 25 percent of the disease burden in the developing world is due to environmental factors.¹
- 1.9 million people, primarily children, died in 2004 from inadequate access to clean water and sanitation.²
- 2 million people, mostly women and children, die each year from exposure to indoor air pollution from cooking with solid fuels such as wood, dung, and charcoal.³

Non-communicable diseases (NCDs), such as heart disease, stroke, diabetes, cancer, and chronic respiratory conditions, are of growing importance in low- and middle-income countries. Many NCDs can be caused or worsened by environmental hazards, such as air pollution, toxic chemicals, and built environments that discourage physical activity. NCDs can impair economic development by pushing people into poverty, due to lost productivity and the costs of long-term therapy. In low- and middle-income countries, where people frequently pay out-of-pocket for healthcare and where healthcare systems have limited resources and capacity, NCDs take a large human and economic toll.

- 80 percent of all deaths due to NCDs occur in the developing world.⁴
- People in the developing world die from NCDs at a younger age than people in the developed world. -29 percent of all deaths from NCDs occur in individuals under the age of 60 in low- and middle-income countries.⁵

¹ Pruss-Ustun A, Corvalan C. 2006. Preventing disease through healthy environments: Towards an estimate of the environmental burden of disease. World Health Organization, Geneva. Available: http://www.who.int/quantifying_ehimpacts/publications/preventingdisease.pdf.

² WHO (World Health Organization). 2011. Mortality and burden of disease from water and sanitation. Available: http://www.who.int/gho/phe/water_sanitation/burden/en/index.html.

³ WHO (World Health Organization). 2011. Public Health and Environment. Available: <http://www.who.int/gho/phe/en/index.html>.

^{4,5} World Health Organization (WHO). 2011. Global status report on noncommunicable diseases 2010: Description of the global burden of NCDs, their risk factors and determinants. World Health Organization, Geneva. Available: http://www.who.int/nmh/publications/ncd_report2010/en/.