



Air Pollution and its Causes

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Every year, an estimated seven million people die as a result of air pollution around the world. According to WHO data, nine out of ten people breathe air that exceeds WHO guideline limits and contains high levels of pollutants, with low- and middle-income nations bearing the brunt of the burden. The World Health Organization (WHO) is assisting countries in combating air pollution.

Air pollution is a huge hazard to health and the environment, from haze hanging over cities to smoke within the home. Every year, the combined impacts of ambient (outside) and domestic air pollution result in approximately seven million premature deaths, primarily due to increased mortality from stroke, heart disease, chronic obstructive pulmonary disease, lung cancer, and acute respiratory infections.

Air Pollution in the Environment

Approximately 91 percent of the world's population lives in areas where air quality exceeds WHO standards. While both developed and developing countries are affected by ambient air pollution, low- and middle-income countries bear the brunt of the burden, with the highest toll in the WHO Western Pacific and South-East Asia regions.

Air pollution comes from a variety of places, each with its own set of problems. Residential energy for cooking and heating, cars, electricity generation, agriculture/waste incineration, and industry are all major sources of outdoor pollution. Integrated policies supporting sustainable land use, cleaner household energy and transportation, energy-efficient housing, power generation, industry, and better municipal waste management can effectively reduce significant sources of ambient air pollution.

Globally, air quality is inextricably tied to the earth's climate and ecosystems. Many of the factors that con-

tribute to air pollution (such as the burning of fossil fuels) also contribute to greenhouse gas emissions. As a result, policies to reduce air pollution are a "win-win" strategy for both climate and health, lowering the burden of disease caused by air pollution while also contributing to climate change mitigation in the short and long term.

Pollution in the Home

In the developing world, household air pollution is one of the primary causes of sickness and early mortality. Cooking fire smoke causes 3.8 million premature deaths per year, the majority of which occur in low- and middle-income nations. Particulate matter (PM), methane, carbon monoxide, polyaromatic hydrocarbons (PAH), and volatile organic compounds are all produced when dung, wood, and coal are burned in inefficient stoves or open hearths (VOC). Kerosene combustion in simple wick lamps emits a substantial amount of fine particles and other pollutants.

Particulate matter is a particularly dangerous contaminant. Numerous research have found a direct link between PM exposure and harmful health effects. Ultrafine particles (one micron in diameter or less) can permeate tissues and organs, posing a much larger risk of systemic health effects.

Indoor air pollutants can cause a variety of health problems in both children and adults, ranging from respiratory ailments to cancer to vision impairments. Burns, poisonings, musculoskeletal injuries, and accidents are all more likely in families that use polluting fuels and equipment.

Environmental Justice and Air Pollution

Nobody wants to live near an incinerator, an oil refinery, a port, a toxic waste dump, or any other pollut-

ing facility. Millions of people do, putting them at an increased risk of respiratory disease, cardiovascular disease, neurological damage, cancer, and death. According to the American Lung Association, people of colour are 1.5 times more likely than whites to live in locations with poor air quality in the United States.

Historically, racist zoning policies and discriminatory lending practises known as redlining have worked together to keep polluting industries and congested highways out of white neighbourhoods, turning communities of colour, particularly poor and working-class communities of colour, into sacrifice zones where residents are forced to breathe dirty air and suffer from a variety of health problems. Members of these areas suffer economic hardship as a result of missed workdays, greater medical costs, and local underinvestment, in addition to the heightened health risks that come with living in such places.

Racism towards the environment isn't restricted to cities and industrial areas. Outdoor workers, such as the estimated three million migrant and seasonal farmworkers in the United States, are among the most exposed to air pollution—and also among the least politically equipped to force employers and legislators to recognise their right to breathe clean air.

Many environmental justice communities have been arguing for decades that land-use and public health reforms are needed to ensure that vulnerable areas are not overburdened and that the people who need resources the most are receiving them. Tools like the Environmental Justice Screening Method and the EPA's EJSCREEN provide evidence of what many environmental justice communities have been arguing

for decades: that we need land-use and public health reforms to ensure that vulnerable areas are not overburdened and that the people who need resources the most are receiving them.

Pollution Control in the Air

Since its passage in 1970, the Clean Air Act has been a critical tool for decreasing air pollution in the United States, despite attempts by fossil-fuel interests backed by industry-friendly lawmakers to reduce its many protections. It will always be critical to ensure that this foundational environmental law is preserved and adequately implemented in order to sustain and improve our air quality.

However, the most efficient and effective strategy to reduce air pollution is to hasten the transition to cleaner fuels and industrial processes. By shifting to renewable energy sources (such as wind and solar power), improving vehicle fuel efficiency, and replacing more and more gasoline-powered cars and trucks with electric versions, we'll be limiting air pollution at its source while also reducing the global warming that exacerbates many of its worst health effects.

What are the financial expenses of air pollution control? The annual benefits of cleaner air are up to 32 times more than the cost of clean-air laws, according to an analysis commissioned by NRDC on the Clean Air Act. Those benefits include up to 370,000 avoided premature deaths, 189,000 fewer hospital admissions for cardiac and respiratory illnesses, and net economic benefits of up to \$3.8 trillion for the U.S. economy every year.