

COMMENTARY

Environmental degradation is a public health emergency: time for planetary health action

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Introduction

The accelerating degradation of Earth's natural systems has become one of the most profound threats to global public health in the 21st century. Climate change, air and water pollution, chemical contamination, biodiversity loss, and unsustainable food and energy systems are no longer distant environmental concerns; they are now central drivers of morbidity, mortality, and widening health inequities worldwide. The evidence is unequivocal: protecting human health is inseparable from protecting planetary systems on which life depends.

An estimated 24% of global deaths are attributable to environmental risk factors, much of which is preventable through proven interventions.¹ These risks are increasing in magnitude and complexity, threatening to reverse decades of progress in life expectancy and disease control. For The Lancet Planetary Health community, the imperative is clear: environmental action must be reframed and operationalised as core public health action.

Environmental determinants of disease burden

Air pollution: a persistent and expanding killer

Air pollution remains among the largest environmental risk factors globally, responsible for millions of premature deaths annually.² Fine particulate matter (PM_{2.5}), nitrogen dioxide, and ozone are strongly associated with cardiovascular disease, stroke, chronic respiratory illness, adverse pregnancy outcomes, and emerging neurological harms.^{3,5}

Recent analyses from the Global Burden of Disease (GBD) Study show that ambient and household air pollution together account for a substantial share of disability-adjusted life years (DALYs), particularly in low- and middle-income countries (LMICs).² These burdens are compounded by rapid urbanisation, fossil-fuel dependence, and weak regulatory enforcement.

New epidemiological evidence suggests air pollution may also accelerate neurodegenerative processes, including dementia, further expanding the scope of pollution-related disease beyond traditional cardiopulmonary outcomes.⁶ This growing evidence base strengthens the case for aggressive air quality standards and clean energy transitions as public health priorities.

Climate change as a health threat multiplier

Climate change operates as a threat multiplier, intensifying existing health risks and generating new ones. Rising global temperatures have increased heat-related mortality, reduced labour productivity, and exacerbated food and water insecurity.⁷ Extreme weather events — including floods, cyclones, droughts, and wildfires — increasingly disrupt health systems and essential services.

The Lancet Countdown on Health and Climate Change has documented year-on-year worsening of climate-related health indicators, including increased population exposure to heatwaves, expanding geographic suitability for vector-borne diseases, and escalating economic losses affecting health determinants.⁷ Without rapid mitigation, these trends will accelerate, overwhelming adaptive capacity in vulnerable regions.

Wildfire smoke, intensified by climate-driven droughts and heat extremes, has emerged as a major transboundary health hazard. Recent estimates attribute tens of thousands of premature deaths annually to wildfire-related PM_{2.5} exposure, illustrating the globalised nature of climate-related health risks.^{8,9}

Chemical pollution and the invisible exposome

The global proliferation of synthetic chemicals represents a largely under-recognised public health crisis. Chemical production has increased more than fifty-fold since 1950, yet regulatory frameworks and health surveillance systems have failed to keep pace.¹⁰

Mounting evidence links exposure to endocrine-disrupting chemicals, pesticides, heavy metals, and per- and polyfluoroalkyl substances (PFAS) with cancer, metabolic disease, neurodevelopmental disorders, infertility, and adverse birth outcomes.^{11,12} Recent studies associate PFAS contamination in drinking water with significantly increased risks of infant mortality and preterm birth, underscoring the urgency of regulatory action.¹³

The economic and health costs of chemical pollution are staggering. Conservative estimates suggest global health damages from chemical exposure exceed US\$2 trillion annually, costs largely externalised from producers to populations and health systems.¹⁰

Environmental injustice and health inequities

Environmental health risks are deeply inequitable. The greatest burdens fall on populations least responsible for environmental degradation — including LMICs, marginalised urban communities, indigenous populations, children, older adults, and informal workers.¹⁴

Household air pollution from solid fuels disproportionately affects women and children. Climate-related disasters strike hardest where infrastructure, health systems, and social safety nets are weakest. Chemical exposures often cluster in low-income communities near industrial zones or unsafe waste disposal sites.

Environmental degradation thus acts as a force multiplier for social injustice, reinforcing cycles of poverty, ill-health, and vulnerability. Addressing planetary health without centring equity risks entrenching — rather than alleviating — global health disparities.

Health co-benefits of environmental action

A defining insight of planetary health research is that many environmental interventions deliver immediate and substantial health co-benefits. Transitioning from fossil fuels to clean energy reduces greenhouse gas emissions while simultaneously lowering air pollution, cardiovascular disease, and respiratory illness.¹⁵

Urban planning that prioritises active transport, green space, and reduced car dependency improves air quality, physical activity, mental health, and social cohesion. Dietary shifts toward plant-rich, sustainable food systems can reduce non-communicable disease burden while lowering land use, water stress, and emissions.

These co-benefits transform environmental policy from a perceived economic burden into a health investment with near-term returns — a framing essential for political and public support.

The role of health systems and the health sector

Health systems are both victims and contributors to environmental degradation. They are increasingly disrupted by climate extremes while simultaneously generating substantial carbon emissions and waste. Decarbonising health systems, strengthening climate resilience, and embedding environmental sustainability into procurement and service delivery are therefore ethical and operational imperatives.

The World Health Organization's Health and Environment Scorecards and compendium of environmental health interventions provide practical tools for countries to assess progress and implement evidence-based solutions.^{1,16} However, uptake remains uneven, reflecting governance gaps and underinvestment.

Health professionals also play a critical role as trusted communicators. Framing environmental threats in health terms — lives saved, diseases prevented, systems protected — can mobilise public demand and counter misinformation.

Research and policy priorities

To meet the scale of the planetary health challenge, several priorities require urgent attention:

First, environmental health surveillance must be strengthened, particularly in LMICs. Integrated monitoring of air, water, chemical exposures, and climate hazards linked with health outcomes is essential for timely action.

Second, research must move beyond single-exposure paradigms toward cumulative and mixture-based approaches reflecting real-world exposomes. Mechanistic studies are needed to inform precautionary regulation.

Third, health impact assessments should be embedded in climate, energy, agricultural, and urban policy decisions, ensuring health considerations shape upstream determinants.

Finally, financing and governance must align with planetary health goals. Removing fossil-fuel subsidies, internalising environmental externalities, and directing climate finance toward health-protective investments are essential steps.

Conclusion

Environmental degradation constitutes a public health emergency of unprecedented scale. Climate change, pollution, chemical contamination, and biodiversity loss are already shaping disease patterns, straining health systems, and deepening inequities. Yet the solutions are known, evidence-based, and rich in health co-benefits.

For the planetary health community, the task ahead is not merely to document harm but to drive transformative action. Environmental protection must be recognised as foundational to public health practice, policy, and ethics. The health of future generations depends on whether environmental action is treated not as optional, but as essential.

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