EDITORIAL

Climate crisis paralysis: Accelerating global action for health resilience in a changing world

1 | CALLS FOR IMMEDIATE ACTION ARE GETTING LOUDER, BUT THEY ARE NOT HAVING A LASTING IMPACT ON SOCIETY AND POLITICAL INSTITUTIONS AS A WHOLE

The global action on climate change is out of sync. The world is rapidly moving deeper into a dangerous climate crisis; science is providing ample warnings of an imminent planetary emergency; while policy and the global economy moves, at best, in incremental steps. The recently finalised COP28 in Dubai is no exception. Even though the agreement, signed by all countries in the world, provides a workable plan for the transition away from fossil fuels—the dominant cause of global warming—there are no convincing signs of world action at the speed and scale required to align with the scientific consensus.

The results of an analysis by the World Economic Forum (WEF) show that even if global warming is limited to 1.5°C, the cumulative financial loss due to climate change alone is likely to reach 2.4 trillion dollars by 2030. Overall, the financial burden of the global health costs, ignited with the climate crisis, exceed already 10% of the GDP of each and every country making health sector the leading driving force of the world's economy. By 2050, the WEF expects 14.5 million additional deaths and 12.5 trillion dollars in economic losses worldwide due to extreme weather events such as heatwaves, drought or floods. The WEF recommends fortifying healthcare systems and decisively limiting global warming in order to prevent such scenarios.[1]

Not acting now will lead to irreversible damage and will increasingly be at the expense of health, as the 2023 report of the Lancet Countdown on health and climate change emphasizes.[2] And in October 2023, Scientists and medical experts worldwide called for immediate action in more than 200 scientific journals. The United Nations and political leaders are urged to treat the climate crisis and the biodiversity crisis as "one indivisible" major crisis—a global health emergency. It is important, according to the call, that science across disciplines speak with one voice.[3]

A loud voice is needed and probably many more such calls and initiatives,[4] because still parts of society and politics are not reached, and even if reached, the overwhelming evidence of rising global risks is not sinking in. For example, it is truly frustrating and worrying, that so few decision makers understand the importance of limiting global warming to 1.5°C. That 1.5°C is not a goal, or target, as often portrayed, but (scientifically speaking) a physical limit, beyond which tipping points likely are crossed, massive health impacts incurred, and where adaptation measure become increasingly costly and difficult as the WEF analysis shows.

2 | MULTIPLE CRISES JEOPARDISE HUMAN HEALTH

Global warming caused by the use of fossil fuels has become synonymous with a series of crises that are affecting humanity and planet Earth. But we are facing an era of multiple crises. Crises that interact and trigger each other. In addition to the climate crisis, the pollution crisis stands for a number of extremely problematic developments. Still 9 million people die prematurely each year due to pollution, a rate of death in the same magnitude as during the COVID-19 pandemic.[5] Alongside the climate crisis, pollution is one of the strongest drivers of the biodiversity crisis.

Climate change and the environment crises occur in parallel to a health crisis currently affecting 2 billion humans and many domestic animals. Exposure to harmful substances disrupts the epithelial barriers of the skin, upper and lower airways and gut mucosa and causes microbial dysbiosis and loss of biodiversity triggering an inflammatory immune response that can initiate or aggravate many chronic inflammatory diseases.[6,7] These diseases are caused by chronic microinflammation in response to daily exposed harmful material such as cleaners, packaged food additives, even without any visible pollution.[8] But most people in the world are exposed to far too high doses of chemicals that are responsible for cancer, cardiovascular diseases, lung diseases, metabolic diseases, neurological diseases and allergies. The rising tide of industrial chemicals is likely to replace air pollution as the main driver of pollution-related diseases and premature death.[9] The decrease of air pollution is a sliver of positive news surfaces from the Lancet Report. The paradox is that if we clean up all our cities of air pollution, we will immediately push global temperatures up—probably over 1.5°C.[10] It is a "Faustian bargain" to quote Jim Hansen—as air pollution overall cools the planet, with up to 0.5°C (today), which means that one major environmental problem and killer (air pollution) is camouflaging another major global problem (climate change). It is time to tackle the pollution crisis too.

Not only does it massively restrict people's health and quality of life[11] but also the effects have been visible for years in the form of massive insect mortality and the consequences for the food chain.

Whereas climate change is responsible to the spread of infectious diseases such as dengue or West Nile fever, malaria or vibriosis from tropical areas to more temperate regions—beside the high number of heat-related illnesses and thousands of heat related deaths each year. It also contributes to the strong intensification of the pollen load. The vegetation phases of the plants and thus the pollen flight times are extended, with severe consequences for those affected. Simultaneous exposure to pollen in the air increases susceptibility to respiratory viral infections, regardless of allergy status.[12]

And third, the loss of biodiversity—the alarming rate at which species are becoming extinct. Besides pollution and climate change other human activities such as habitat destruction, the spread of invasive species and the over-exploitation of resources have accelerated the decline of many plant and animal species, leading to genetic erosion. Although there are solutions for and with agriculture, it is still one of the main drivers of biodiversity loss and one of the biggest contributors to greenhouse gas emissions. Industrial food production is one of the biggest stress factors for air, soil and water due to land and water consumption and pollution from pesticides and mineral fertilisers, which leads to a loss of species and soil fertility. Instead, transforming food systems could bring huge economic benefits and food security by reversing biodiversity loss and acting as a sink for greenhouse gases as stated by the Food System Economics Commission.[13]

3 | EARTH SYSTEMS ARE COMING UNDER PRESSURE TO THE DETRIMENT OF THE WEAK

Earth systems are coming under increasing pressure and planetary boundaries have largely been crossed.[14] Humanity's form of economic activity is not only driving the Earth systems into new, undesirable conditions that may last for many generations—it is also extremely unjust.[15] We are already witnessing how global warming is increasing the pressure on water—through increased evaporation and more water vapor in the air. As a result, there will be more frequent extreme weather events and longer periods of drought and flooding with consequences on freshwater resources. The extreme weather will not only affect the poorest people in the world but will also affect them disproportionately. The world's poorest countries are suffering from the loss of living space due to rising sea levels, infertile land and dwindling water resources—leading to an exacerbation of drinking water shortages and food insecurity, combined with inadequate healthcare provision. In addition, they have the fewest resources and often have unfavourable geological conditions in floodplains or coastal regions and poor infrastructure to adapt to increasingly frequent droughts and floods. Even a change in precipitation patterns can alternate farming conditions and the subsequent need of irrigation can further enforce water scarcity. Poor communities but also indigenous communities rely on natural resources. They are most affected by the loss of ecosystem services such as clean water, fertile soil and pollination. This means a loss of livelihoods and income from fishing, agriculture and forestry, which ultimately leads to a loss of habitat and thus to displacement and migration. Urbanisation and neo-colonialism follow, as people are then forced to work under poor working conditions and weak environmental standards, such as in mining, the textile industry or electronics recycling. Pollution then keeps the wheel turning. Urbanisation and informal settlements pollute the waters and poison the population, as do toxic compounds from the aforementioned industries. Summarised, these risks multiply for vulnerable people, affecting human health, forcing people to flee and destabilising entire societies.[16]

The Lancet Countdown Report lists a large number of these burdens. For example, global warming on the African continent already led to a 4.1% loss of income in 2022. Low- and medium-developed countries are exposed to significantly higher, even extreme heat stress. The report shows the enormous pressure that crises and the transgression of planetary boundaries exert on human (and planetary) health. In the period 2013–2022, heat-related mortality increased by 85% compared to the reference period (1991–2000) due to the increase in heat days. The report paints a bleak picture with 370% additional heat-related deaths by mid-century if the Earth warms by 2°C. Due to the renewed increase in greenhouse gas emissions in 2023 and the further increase in the production and consumption of fossil fuels,[17] the 1.5°C target of the Paris Agreement will probably no longer be achievable. Based on current national adaptation and mitigation plans, the United Nations' GAP report currently assumes that the world is moving towards a 2.4–2.6°C scenario.[18]

4 | PEOPLE NEED ANSWERS

In times of crises, the world not only needs warnings but also needs answers on how to overcome crises and manage the phase-out of fossil resources. The German Advisory Council on Global Change (WBGU) and the Lancet Pathfinder Commission are developing concepts and recommendations for the responsible handling and management of crises for politicians and the general public on a global level.[19,20] The Pathfinder Commission highlights the positive effects that measures to reduce greenhouse gases can have. The Commission explains how healthy and sustainable lifestyles and living environments can be if they are climate-friendly. The WBGU also emphasizes what we must do to curb the loss of biodiversity and the increase of pollution in order to achieve a healthy life on a healthy planet. Overcoming the crises means health prevention.

More than ever, scientists and medical professionals need to get involved in the public debate and stand up for the health of people and the planet, as well as for equality and justice. We must now play an active role in shaping the public debate and be recognised as a strong community that speaks with one voice.

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Claudia Traidl-Hoffmann developed the idea. Jürgen Orasche led drafting. All other authors contributed significantly to the editorial content.

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Jürgen Orasche[1]
Kari C. Nadeau[2]
Antonia Schuster[3]
Johan Rockström[3]
Cezmi A. Akdis[4]
Claudia Traidl-Hoffmann[1]

[1]*Environmental Medicine, Faculty of Medicine, University of Augsburg, Augsburg, Germany*
[2]*Sean N. Parker Center for Allergy and Asthma Research, Stanford University, Mountain View, California, USA*
[3]*Potsdam Institute for Climate Impact Research, Potsdam, Germany*
[4]*Swiss Institute of Allergy and Asthma Research (SIAF), University Zurich, Davos, Switzerland*

Correspondence
Jürgen Orasche, Environmental Medicine, Faculty of Medicine, University of Augsburg, Augsburg, Germany.
Email: juergen.orasche@med.uni-augsburg.de

ORCID

Jürgen Orasche https://orcid.org/0000-0002-1037-7544
Kari C. Nadeau https://orcid.org/0000-0002-2146-2955
Antonia Schuster https://orcid.org/0000-0002-8814-7642
Johan Rockström https://orcid.org/0000-0001-8988-2983
Cezmi A. Akdis https://orcid.org/0000-0001-8020-019X
Claudia Traidl-Hoffmann https://orcid.org/0000-0001-5085-5179

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