

EDITORIAL

Open Access



Time to treat the climate and nature crisis as one indivisible global health emergency

Kamran Abbasi¹, Parveen Ali², Virginia Barbour³, Thomas Benfield⁴, Kirsten Bibbins-Domingo⁵, Stephen Hancocks⁶, Richard Horton⁷, Laurie Laybourn-Langton⁸, Robert Mash⁹, Peush Sahni¹⁰, Wadeia Mohammad Sharief¹¹, Paul Yonga¹² and Chris Zielinski^{13*}

Over 200 health journals call on the United Nations, political leaders, and health professionals to recognise that climate change and biodiversity loss are one indivisible crisis and must be tackled together to preserve health and avoid catastrophe. This overall environmental crisis is now so severe as to be a global health emergency.

The world is currently responding to the climate crisis and the nature crisis as if they were separate challenges. This is a dangerous mistake. The 28th Conference of the Parties (COP) on climate change is about to be held in Dubai while the 16th COP on biodiversity is due to be held in Turkey in 2024. The research communities that provide the evidence for the two COPs are unfortunately largely separate, but they were brought together for a workshop in 2020 when they concluded

that: “Only by considering climate and biodiversity as parts of the same complex problem...can solutions be developed that avoid maladaptation and maximize the beneficial outcomes” [1].

As the health world has recognised with the development of the concept of planetary health, the natural world is made up of one overall interdependent system. Damage to one subsystem can create feedback that damages another—for example, drought, wildfires, floods and the other effects of rising global temperatures destroy plant life, and lead to soil erosion and so inhibit carbon storage, which means more global warming [2]. Climate change is set to overtake deforestation and other land-use change as the primary driver of nature loss [3].

Nature has a remarkable power to restore. For example, deforested land can revert to forest through natural regeneration, and marine phytoplankton, which act as natural carbon stores, turn over one billion tonnes of photosynthesising biomass every eight days [4]. Indigenous land and sea management has a particularly important role to play in regeneration and continuing care [5].

Restoring one subsystem can help another—for example, replenishing soil could help remove greenhouse gases from the atmosphere on a vast scale [6]. But actions that may benefit one subsystem can harm another—for example, planting forests with one type of tree can remove carbon dioxide from the air but can damage the biodiversity that is fundamental to healthy ecosystems [7].

*Correspondence:

Chris Zielinski
chris.zielinski@ukhealthalliance.org

¹ BMJ, London, UK

² International Nursing Review, Sheffield, UK

³ Medical Journal of Australia, Brisbane, Australia

⁴ Danish Medical Journal, Copenhagen, Denmark

⁵ JAMA, San Francisco, USA

⁶ British Dental Journal, London, UK

⁷ The Lancet, London, UK

⁸ University of Exeter, Exeter, UK

⁹ African Journal of Primary Health Care & Family Medicine, Stellenbosch, South Africa

¹⁰ National Medical Journal of India, New Delhi, India

¹¹ Dubai Medical Journal, Dubai, UAE

¹² East African Medical Journal, Nairobi, Kenya

¹³ University of Winchester, Winchester, UK



© The Author(s) 2023. **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated in a credit line to the data.

The impacts on health

Human health is damaged directly by both the climate crisis, as the journals have described in previous editorials, [8, 9] and by the nature crisis [10]. This indivisible planetary crisis will have major effects on health as a result of the disruption of social and economic systems—shortages of land, shelter, food, and water, exacerbating poverty, which in turn will lead to mass migration and conflict. Rising temperatures, extreme weather events, air pollution, and the spread of infectious diseases are some of the major health threats exacerbated by climate change [11]. “Without nature, we have nothing,” was UN Secretary-General António Guterres’s blunt summary at the biodiversity COP in Montreal last year [12]. Even if we could keep global warming below an increase of 1.5°C over pre-industrial levels, we could still cause catastrophic harm to health by destroying nature.

Access to clean water is fundamental to human health, and yet pollution has damaged water quality, causing a rise in water-borne diseases [13]. Contamination of water on land can also have far-reaching effects on distant ecosystems when that water runs off into the ocean [14]. Good nutrition is underpinned by diversity in the variety of foods, but there has been a striking loss of genetic diversity in the food system. Globally, about a fifth of people rely on wild species for food and their livelihoods [15]. Declines in wildlife are a major challenge for these populations, particularly in low- and middle-income countries. Fish provide more than half of dietary protein in many African, South Asian and small island nations, but ocean acidification has reduced the quality and quantity of seafood [16].

Changes in land use have forced tens of thousands of species into closer contact, increasing the exchange of pathogens and the emergence of new diseases and pandemics [17]. People losing contact with the natural environment and the declining biodiversity have both been linked to increases in noncommunicable, autoimmune, and inflammatory diseases and metabolic, allergic and neuropsychiatric disorders [10, 18]. For Indigenous people, caring for and connecting with nature is especially important for their health [19]. Nature has also been an important source of medicines, and thus reduced diversity also constrains the discovery of new medicines.

Communities are healthier if they have access to high-quality green spaces that help filter air pollution, reduce air and ground temperatures, and provide opportunities for physical activity [20]. Connection with nature reduces stress, loneliness and depression while promoting social interaction [21]. These benefits are threatened by the continuing rise in urbanisation [22].

Finally, the health impacts of climate change and biodiversity loss will be experienced unequally between and

within countries, with the most vulnerable communities often bearing the highest burden [10]. Linked to this, inequality is also arguably fuelling these environmental crises. Environmental challenges and social/health inequities are challenges that share drivers and there are potential co-benefits of addressing them [10].

A global health emergency

In December 2022 the biodiversity COP agreed on the effective conservation and management of at least 30% percent of the world’s land, coastal areas, and oceans by 2030 [23]. Industrialised countries agreed to mobilise \$30 billion per year to support developing nations to do so [23]. These agreements echo promises made at climate COPs.

Yet many commitments made at COPs have not been met. This has allowed ecosystems to be pushed further to the brink, greatly increasing the risk of arriving at ‘tipping points’, abrupt breakdowns in the functioning of nature [2, 24]. If these events were to occur, the impacts on health would be globally catastrophic.

This risk, combined with the severe impacts on health already occurring, means that the World Health Organization should declare the indivisible climate and nature crisis as a global health emergency. The three pre-conditions for WHO to declare a situation to be a Public Health Emergency of International Concern [25] are that it: (1) is serious, sudden, unusual or unexpected; (2) carries implications for public health beyond the affected State’s national border; and (3) may require immediate international action. Climate change would appear to fulfil all of those conditions. While the accelerating climate change and loss of biodiversity are not sudden or unexpected, they are certainly serious and unusual. Hence we call for WHO to make this declaration before or at the Seventy-seventh World Health Assembly in May 2024.

Tackling this emergency requires the COP processes to be harmonised. As a first step, the respective conventions must push for better integration of national climate plans with biodiversity equivalents [3]. As the 2020 workshop that brought climate and nature scientists together concluded, “Critical leverage points include exploring alternative visions of good quality of life, rethinking consumption and waste, shifting values related to the human-nature relationship, reducing inequalities, and promoting education and learning” [1]. All of these would benefit health.

Health professionals must be powerful advocates for both restoring biodiversity and tackling climate change for the good of health. Political leaders must recognise both the severe threats to health from the planetary crisis as well as the benefits that can flow to health from

tackling the crisis [26]. But first, we must recognise this crisis for what it is: a global health emergency.

This Comment is being published simultaneously in multiple journals. For the full list of journals see: <https://www.bmj.com/content/full-list-authors-and-signatories-climate-nature-emergency-editorial-october-2023>.

Acknowledgements

Not applicable.

Authors' contributions

LL-L developed the idea of the editorial and led drafting along with CZ. All other authors contributed significantly to the editorial content. All authors read and approved the final manuscript.

Authors' information

Kamran Abbasi, Editor-in-Chief, BMJ; Parveen Ali, Editor-in-Chief, International Nursing Review; Virginia Barbour, Editor-in-Chief, Medical Journal of Australia; Thomas Benfield, Editor-in-Chief, Danish Medical Journal; Kirsten Bibbins-Domingo, Editor-in-Chief, JAMA; Stephen Hancocks, Editor-in-Chief, British Dental Journal; Richard Horton, Editor-in-Chief, The Lancet; Laurie Laybourn-Langton, University of Exeter; Robert Mash, Editor-in-Chief, African Journal of Primary Health Care & Family Medicine; Peush Sahni, Editor-in-Chief, National Medical Journal of India; Wadeia Mohammad Sharief, Editor-in-Chief, Dubai Medical Journal; Paul Yonga, Editor-in-Chief, East African Medical Journal; Chris Zielinski, University of Winchester.

Funding

Not applicable.

Availability of data and materials

Not applicable.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

VB is an employee of the Medical Journal of Australia and an Unpaid Committee member of Wildlife Queensland. TB receives unrestricted grants to his institution from GSK, Novo Nordisk Foundation, Simonsen Foundation, Lundbeck Foundation, Kai Foundation, Erik and Susanna Olesen's Charitable Fund, Pfizer, MSD, and Gilead Sciences; is principal investigator for clinical trials funded by Pfizer, Boehringer Ingelheim, Gilead Sciences, MSD, Roche, Novartis, and Kancera AB; is an advisory board member for GSK, Pfizer, Gilead Sciences, MSD, Janssen, and Astra Zeneca; is a board member of Pentabase; reports consulting fees from GSK and Pfizer; reports honoraria for lectures from GSK, Pfizer, Gilead Sciences, Boehringer Ingelheim, AbbVie, and Astra Zeneca; and reports donation of trial medication (baricitinib) from Eli Lilly all unrelated to the topic of this Comment. LL-L is a member of the advisory group to the UK Climate Change Committee. RM reports a TEAM grant to his institution Stellenbosch University from VLIR (Belgium) to investigate primary health care and climate change in Africa. SH reports honoraria for hosting webinars from Procter & Gamble Oral-B unrelated to the topic of this Comment. PY reports honoraria for lectures from bioMérieux and Pfizer; participation in a Data Safety Monitoring Board for US National Heart, Lung, and Blood Institute; has received COVID-19 and influenza test kits from Atea Pharmaceuticals for a phase III clinical trial that he serves as a principal investigator; is a member of the Executive Committee of the antimicrobial stewardship study group for the European Society of Clinical Microbiology and Infectious Diseases all of which are unrelated to the topic of this Comment; and is Editor-in-Chief of the

East African Medical Journal, which is the official medical journal of the Kenya Medical Association. The remaining authors declare no competing interests.

Published online: 10 January 2024

References

- Otto-Portner H, Scholes B, Agard J, Archer E, Arneith A, Bai X, et al. Scientific outcome of the IPBES-IPCC co-sponsored workshop on biodiversity and climate change. 2021. <https://doi.org/10.5281/zenodo.4659159>.
- Ripple WJ, Wolf C, Lenton TM, Gregg JW, Natali SM, Duffy PB, et al. Many risky feedback loops amplify the need for climate action. *One Earth*. 2023;6:86–91. <https://doi.org/10.1016/j.oneear.2023.01.004>.
- European Academies Science Advisory Council. Key messages from European Science Academies for UNFCCC COP26 and CBD COP15. 2021. Available: <https://easac.eu/publications/details/key-messages-from-european-science-academies-for-unfccc-cop26-and-cbd-cop15>. Accessed 1/10/2023.
- Falkowski P. Ocean science: the power of plankton. In: Nature Publishing Group UK; 2012. <https://doi.org/10.1038/483S17a>. Cited 27 Jun 2023.
- Dawson N, Coolsaet B, Sterling E, Loveridge R, Gross-Camp N, Wong-busarakum S, et al. The role of indigenous peoples and local communities in effective and equitable conservation. *Ecol Soc*. 2021;26. <https://doi.org/10.5751/ES-12625-260319>.
- Bossio DA, Cook-Patton SC, Ellis PW, Fargione J, Sanderman J, Smith P, et al. The role of soil carbon in natural climate solutions. *Nat Sustain*. 2020;3:391–8. <https://doi.org/10.1038/s41893-020-0491-z>.
- Levia DF, Creed IF, Hannah DM, Nanko K, Boyer EW, Carlyle-Moses DE, et al. Homogenization of the terrestrial water cycle. *Nat Geosci*. 2020;13:656–8. <https://doi.org/10.1038/s41561-020-0641-y>.
- Atwoli L, Baqui AH, Benfield T, Bosurgi R, Godlee F, Hancocks S, et al. Call foremergency action to limit global temperature increases, restore biodiversity, and protect health. *BMJ*. 2021;374:n1734. <https://doi.org/10.1136/bmj.n1734>.
- Atwoli L, Erhabor GE, Gbakima AA, Haileamlak A, Ntumba J-MK, Kigera J, et al. COP27 climate change conference: urgent action needed for Africa and the world. *BMJ*. 2022;379:o2459. <https://doi.org/10.1136/bmj.o2459>.
- WHO, UNEP, Convention on Biological D. Connecting global priorities: biodiversity and human health: a state of knowledge review. 2015. Available: <https://www.cbd.int/health/SOK-biodiversity-en.pdf>. Accessed 1/10/2023.
- Magnano San Lio R, Favara G, Maugeri A, Barchitta M, Agodi A. How antimicrobial resistance is linked to climate change: an overview of two intertwined global challenges. *Int J Environ Res Public Health*. 2023;20:1681. <https://doi.org/10.3390/ijerph20031681>.
- Jelskov U. "Without nature, we have nothing": UN chief sounds alarm at key UN biodiversity event. In: UN News. 2022. Available: <https://news.un.org/en/story/2022/12/1131422>. Cited 20 Jun 2023. Accessed 1/10/2023.
- World Health Organization. State of the world's drinking water: an urgent call to action to accelerate progress on ensuring safe drinking water for all. World Health Organization; 2022. Available: <https://www.who.int/publications/i/item/9789240060807>. Accessed 1/10/2023.
- Comeros-Raynal MT, Brodie J, Bainbridge Z, Choat JH, Curtis M, Lewis S, et al. Catchment to sea connection: impacts of terrestrial run-off on benthic ecosystems in American Samoa. *Mar Pollut Bull*. 2021;169:112530. <https://doi.org/10.1016/j.marpolbul.2021.112530>.
- IPBES. Assessment report on the sustainable use of wild species. 2022. Available: <https://www.ipbes.net/sustainable-use-assessment>.
- Falkenberg LJ, Bellerby RGJ, Connell SD, Fleming LE, Maycock B, Russell BD, et al. Ocean acidification and human health. *Int J Environ Res Public Health*. 2020;17. <https://doi.org/10.3390/ijerph17124563>.
- Dunne D. Climate change "already" raising risk of virus spread between mammals. 2022. Available: <https://www.carbonbrief.org/climate-change-already-raising-risk-of-virus-spread-between-mammals/>. Cited 24 Mar 2023. Accessed 1/10/2023.

18. Altveş S, Yıldız HK, Vural HC. Interaction of the microbiota with the human body in health and diseases. *Biosci Microbiota Food Health*. 2020;39:23–32. <https://doi.org/10.12938/bmfh.19-023>.
19. Schultz R, Cairney S. Caring for country and the health of Aboriginal and Torres Strait Islander Australians. *Med J Aust*. 2017;207:8–10. <https://doi.org/10.5694/mja16.00687>.
20. Macguire F, Mulcahy E, Rossington B. The Lancet countdown on health and climate change - policy brief for the UK. 2022. Available: https://s41874.pcdn.co/wp-content/uploads/Lancet-Countdown-2022-UK-Policy-Brief_EN.pdf Accessed 10 Jan 2023.
21. Wong FY, Yang L, Yuen JWM, Chang KKP, Wong FKY. Assessing quality of life using WHOQOL-BREF: a cross-sectional study on the association between quality of life and neighborhood environmental satisfaction, and the mediating effect of health-related behaviors. *BMC Public Health*. 2018;18:1113. <https://doi.org/10.1186/s12889-018-5942-3>.
22. Simkin RD, Seto KC, McDonald RI, Jetz W. Biodiversity impacts and conservation implications of urban land expansion projected to 2050. *Proc Natl Acad Sci U S A*. 2022;119:e2117297119. <https://doi.org/10.1073/pnas.2117297119>.
23. Secretariat of the Convention on Biological Diversity. COP15: nations adopt four goals, 23 targets for 2030 in landmark UN biodiversity agreement. In: Convention on biological diversity. 2022. Available: <https://www.cbd.int/article/cop15-cbd-press-release-final-19dec2022> . Accessed 1/10/2023. Cited 21 Apr 2023.
24. Armstrong McKay DI, Staal A, Abrams JF, Winkelmann R, Sakschewski B, Loriani S, et al. Exceeding 1.5°C global warming could trigger multiple climate tipping points. *Science*. 2022;377:eabn7950. <https://doi.org/10.1126/science.abn7950>.
25. WHO guidance for the use of Annex 2 of the International Health Regulations. In: World Health Organization. 2005. Available: [https://www.who.int/publications/m/item/who-guidance-for-the-use-of-annex-2-of-the-international-health-regulations-\(2005\)](https://www.who.int/publications/m/item/who-guidance-for-the-use-of-annex-2-of-the-international-health-regulations-(2005)). Cited 5 Oct 2023. Accessed 1/10/2023.
26. Australian Government Department of Health, Care A. Consultation on Australia's first National Health and Climate Strategy. In: Australian Government Department of Health and Aged Care. 2023. Available: <https://www.health.gov.au/news/consultation-on-australias-first-national-health-and-climate-strategy> . Cited 26 Jul 2023. Accessed 1/10/2023.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Ready to submit your research? Choose BMC and benefit from:

- fast, convenient online submission
- thorough peer review by experienced researchers in your field
- rapid publication on acceptance
- support for research data, including large and complex data types
- gold Open Access which fosters wider collaboration and increased citations
- maximum visibility for your research: over 100M website views per year

At BMC, research is always in progress.

Learn more biomedcentral.com/submissions

