

Climate Action and Health: Human Implications of UNFCCC Decisionmaking

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INTRODUCTION

Climate change is among the most dire threats to human health¹. Extreme and slow-onset climate change effects increase the health burden of non-communicable diseases (such as cardiovascular and respiratory disease), injury, malnutrition, infectious disease transmission, mental health impacts, and wider impacts of displacement. Ambitious climate action is vital to protect health. If planned to maximise health gains and avoid unintentional harms, climate action can simultaneously deliver major immediate-term health benefits from cleaner air (as recognised by the UN Secretary General²), improved nutrition, health-supporting cities, and stronger health systems. Health should be protected on legal and economic grounds, recognising the right to health, as well as the necessity of good

health for development, economic productivity, resilience and recovery.

This brief sets out the evidence for links between climate and health, drawing on evidence from the 2025 Report of the Lancet Countdown on Health and Climate Change³ and other sources to highlight how to (1) reduce health impacts of climate change, (2) optimise health co-benefits of climate action, and (3) avoid potential health harms of unjustly implemented climate action. It is intended to support Parties to follow up on health-related references in UNFCCC processes and other decisions (listed in Annex 1) when planning and implementing national climate actions and in the lead up to COP31.

¹ World Health Organization. COP24 Special Report on Climate and Health. 2024. [Online](#) (accessed 13 September 2026)

² UN Climate Change. UN Secretary-General António Guterres at the Opening Ceremony of the World Climate Action Summit. 2023. [Online](#) 3m10s (accessed 13 September 2026)

³ Romanello, M., Walawender, M., Hsu, S.C., et al. The 2025 report of the Lancet Countdown on health and climate change: climate change action offers a lifeline. *Lancet*, 2025; 406(10521): p2804-2857

1 CLIMATE ACTION TO REDUCE THE HEALTH IMPACTS OF CLIMATE CHANGE

1.1 KEY EVIDENCE ON HEALTH IMPACTS

Climate change threatens the health of populations worldwide. While these health impacts vary by geography, no country is immune. The 2025 Report of the Lancet Countdown on Health and Climate Change finds widespread health risks, losses and damages include:

- Heat-related deaths have increased 63% since the 1990s, reaching an estimated average 546,000 annual deaths in 2012–213. Globally, 84% of heatwave days people were exposed to annually in 2020–24 would not have occurred without human-caused climate change³.
- In 2024, heat-related labour capacity loss resulted in \$1.09 trillion in potential income losses, and in 2022 the monetised value of air-pollution-related mortality reached \$4.84 trillion, or 4.7% of global GDP³.
- In 2024, deaths from wildfire-derived small particulate matter air pollution (PM_{2.5}) reached a record 154,000 - a 36% increase from the 2003-2012 average³.
- From 1951–60 to 2015–24, the average climate-defined transmission potential of dengue by the vector mosquitoes *Ae albopictus* and *Ae aegypti* increased by 48.5% and 11.6%, respectively³.
- An increase in heatwave days and drought months in 2023 compared with 1981-2010 was associated with 123.7 million more people experiencing moderate or severe food insecurity³.
- In 2024, extreme heat events led to a 132% decline in people's overall mood and wellbeing compared with the 2006–22 average³.

1.2 THE IMPERATIVE OF ACTION TO REDUCE CLIMATE IMPACTS



Mitigation is vital to reduce the risk of climate-induced health hazards. The IPCC AR6 WGII report asserts with very high confidence that “cascading and compounding risks affecting health due to extreme weather events have been observed in all inhabited regions, and risks are expected to increase with further warming”⁴. The recent UNEP Report on Limiting Overshoot notes that “overshoot will intensify existing health risks and create new ones”⁵. Mitigation, across key sectors including energy supply; industry; agriculture, forestry, and other land use (AFOLU); transport, and buildings, as well as in the healthcare sector, which was itself responsible for 4.2% of global emissions in 2022, will reduce health hazards of climate change³.

⁴ Cissé, G., R. McLeman, H. Adams, P. Aldunce, et al. Health, Wellbeing, and the Changing Structure of Communities. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, 2022; pp. 1041–1170

⁵ United Nations Environment Programme. Limiting Overshoot - Navigating exceedance of 1.5°C and pathways towards return. UNEP, 2026. ISBN:978-92-807-4301-2



Adaptation is essential to reduce exposure and vulnerability to climate hazards. This can be achieved by strengthening systems in the healthcare sector and other health-determining sectors (e.g. agriculture, sanitation and urban planning) to anticipate, prepare for, and resist climate threats; including through disaster risk reduction measures, through strengthening infrastructure, developing emergency response mechanisms, and strengthening evidence, knowledge, and capacities. It is challenging for health systems to deliver universal health coverage even at current levels of warming, with the majority of countries (108/194) experiencing worsening or no significant change in service coverage since the launch of the SDGs in 2015⁶. Global vulnerability to severe dengue increased 32% from 1990-1999 to 2015 to 2024, underscoring the need for healthcare adaptation, as well as water management and beyond³. Nevertheless, some progress has been delivered: as of March 2025, almost two thirds of countries had completed a national health adaptation plan, with some countries integrating other sectoral adaptation considerations with a bearing on health³. In 2024, 161 countries (83% of WMO Members) reported providing climate services for the health sector³. Where conditions allow, dividends can be substantial - from 2000 to 2024, countries with climate-informed health early-warning systems saw a faster decline in deaths from floods and storms than countries without such systems (3.2% vs 1.6% per year)³.



Loss and damage must be addressed as a public health imperative to support communities whose populations are already experiencing the health harms of climate change outlined in the key evidence section above. These impacts are often concurrent, interrelated and compounding - for example, in the case of a severe flood, injuries sustained may often be rapidly followed by water borne disease due to overwhelmed sanitation systems, mosquito-borne disease from standing water, crop inundation and failed harvest leading to malnutrition and reduced available resources for healthcare spending, and related mental health impacts, rendering rapid response a matter of life and death.



Means of implementation, especially finance, are pre-requisites for comprehensive implementation of the the actions described in this brief. Financial needs will continue to rapidly increase with each moment of inaction. However, current levels of finance fall far short of needs, for instance, with adaptation financing needs in developing countries 12-14 times as much as current flows⁷, with grave implications for health due to infeasibility of climate action. Yet, the financial resources are available, as seen by the fact that, in 2023, 83% of countries reviewed had net negative carbon prices that together generated \$956 billion in net fossil fuel subsidies which continue to incentivise climate-heating fossil fuel burning, increasing both emissions and the need for climate finance³.

⁶ World Health Organization and The World Bank. Tracking Universal Health Coverage: 2023 Global monitoring report. 2023. ISBN: 978-92-4-008037-9

⁷ United Nations Environment Programme. Adaptation Gap Report 2025. Nairobi. [Online](#) (accessed 15 September 2026)

2.1 KEY EVIDENCE ON CO-BENEFITS

Climate change and disease share some common drivers. Just and equitable transitions across sectors to reduce emissions and build resilience can also reduce underlying drivers of disease. For example:

- In 2021, it was projected that adopting ambitious policies to deliver the Paris Agreement in just nine countries, with careful attention to health, could prevent over 1.6 million air pollution deaths, over 6.4 million diet-related deaths, and over 2 million deaths from physical activity annually by 2040⁸.
- The 2026 UNEP report on Hidden Assets notes that climate change and air pollution share many of the same sources, and that across 25 proven solutions across energy, industry, transport, agriculture, cooking and waste, every dollar invested returns around 15 dollars in benefits through lower healthcare expenditure, greater labour productivity, avoided physical damage, and savings from avoiding up to 144 million premature deaths and hundreds of millions of cases of chronic disease. Investment in enabling conditions can speed full implementation by up to a decade, worth up to US\$10 trillion in savings by 2040. Every region benefits, with benefit cost ratios as high as 26:1, while every year of delay forgoes more than US\$1.5 trillion⁹.
- Mitigation can also deliver health benefits by improving employment and the economic conditions on which health depends. In 2023, employment in renewable energy increased by 18.3% to 16.2 million workers while employment in fossil-fuel extraction declined slightly to 9.06 million³.

2.2 SECTORAL CLIMATE ACTIONS OFFERING HEALTH CO-BENEFITS

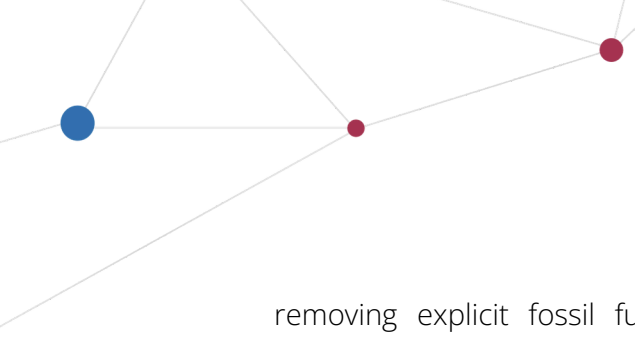


Energy supply: Fossil fuel dependence drives climate change and major health harms, while extraction, transport, combustion and waste create local air, water and soil pollution linked to cancers, heart and respiratory disease, and occupational risks¹⁰. In 2022, air pollution derived from fossil fuel burning was estimated to have caused 2 million deaths globally, and the monetised value of all human-caused air pollution-related mortality was \$4.84 trillion, equivalent to 4.7% of global GDP³. Biomass burning contributes to indoor air pollution, causing 2.3 million avoidable deaths in 2022¹. Just transitions to renewable energy and improving energy efficiency reduce exposure to toxic pollutants, cut energy poverty, strengthen resilience, and expand access to reliable, affordable off grid energy. In 2023, the IMF estimated that globally by 2030,

⁸ Hamilton, I., Kennard, H., McGushin, A. The public health implications of the Paris Agreement: a modelling study. Lancet, 2021; 5(2): e74-e83

⁹ United Nations Environment Programme. Hidden assets: The economic and health case for climate and clean air action. 2026. ISBN: 978-92-807-4302-9

¹⁰ Narayan, S., Kuhl, J. Cradle to Grave: The Health Harms of Fossil Fuels and the Imperative for a Just Transition. Global Climate and Health Alliance, 2025



removing explicit fossil fuel subsidies and pricing fossil fuels according to their externalities could avert 1.6 million air pollution-related deaths annually; raise USD 4.4 trillion in revenue per year (3.6% of global GDP), including USD 3 trillion in 121 emerging and developing economies (roughly equivalent to their additional spending needs to meet the SDGs); and reduce projected global fossil fuel CO₂ emissions 43% below baseline levels in 2030; within the range needed to limit warming to 1.5–2°C¹¹. Progress from energy transitions is already visible: deaths from ambient PM_{2.5} due to fossil fuel combustion fell by 5.8%, from 2.68 million in 2010 to 2.52 million in 2022¹. Electrification delivers the greatest gains when powered by renewables and paired with strong efficiency measures. Continued reliance on technologies such as CC(U)S and geoengineering risks prolonging fossil fuel use and undermining health gains.



Food and agriculture: Resilient food and agriculture systems protect nutrition. In settings where consumption of meat, especially red meat, and/or ultraprocessed foods is high, plant-rich diets offer reduced emissions and improved health outcomes. Diet-related mortality increased from 2021 - 2022 from 148 to 150 deaths per 100,000, reaching 11.8 million deaths and including 1.9 million deaths attributable to excessive red meat and dairy intake - all largely avoidable by transitioning to low-carbon, healthy diets and food systems³. Industrial farming drives emissions through deforestation and land degradation, with health risks linked to toxic pesticides and fertilisers, antimicrobial resistance and zoonotic disease^{12,13,14}. Meanwhile, agroecological practices offer co-benefits for climate adaptation and mitigation, biodiversity, nutrition, and human and environmental health¹⁵.



Transport: Resilient transport systems ensure equitable access to healthcare and other essential services. Safe cycling and walking infrastructure increases active travel, lowering greenhouse gas and air pollution emissions while improving physical activity and reducing road injuries¹⁶. Expanding affordable, safe public transport further cuts emissions compared with private vehicles. Electric vehicles powered by renewable energy can reduce emissions and some air pollutants, though they still produce particulate pollution from brakes and tyres¹⁷, and are most useful where active or public transport is not feasible. When EVs rely on fossil fuel generated electricity, their climate benefits are minimal and the associated health harms persist.

¹¹ Black, S., Liu, A.A., Parry, I.W.H. IMF Fossil Fuel Subsidies Data: 2023 Update. IMF Working Papers 2023, 169 (2023).

¹² Curl, C.L., Spivak, M., Phinney, R., Montrose, L. Synthetic Pesticides and Health in Vulnerable Populations: Agricultural Workers. *Curr Environ Health Rep.* 2020 Mar;7(1):13-29

¹³ Graham, M.E., Wilson, B.A., Ramkumar, D., et al. Unseen Drivers of Antimicrobial Resistance: The Role of Industrial Agriculture and Climate Change in This Global Health Crisis. *Challenges* 2025, 16, 22

¹⁴ Jones BA, Grace D, Kock R, Alonso S, Rushton J, Said MY, McKeever D, Mutua F, Young J, McDermott J, Pfeiffer DU. Zoonosis emergence linked to agricultural intensification and environmental change. *Proc Natl Acad Sci U S A.* 2013 May 21;110(21):8399-404

¹⁵ Committee on Food Security. Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. 2021. [Online](#) (accessed 13 September 2026).

¹⁶ Promoting walking and cycling: a toolkit of policy options. Geneva: World Health Organization; 2025. Licence: CC BY-NC-SA 3.0 IGO

¹⁷ Parkin, J.G.H., Dean, L.S.N., Bell, J.A. et al. Copper-enriched automotive brake wear particles perturb human alveolar cellular homeostasis. *Part Fibre Toxicol*, 2025; 22(4)



Buildings and urban infrastructure: Buildings including homes, workplaces, hospitals and care settings protect people from extreme weather (heat, cold, storms), pollution, and infectious diseases. Better insulation, and passive cooling measures (such as green or reflective roofs, shutters, and adequate ventilation) improve indoor safety, lower emissions, and reduce energy costs. Green and blue urban infrastructure promotes community wellbeing, protects from heat, improves air quality, absorbs GHG emissions, and is associated with increased physical activity, improved mental health, and lower mortality rates^{18,19}. In 2024, access to urban greenspace varied widely, with decreases of up to 34% in some settings and increases up to 69% in others compared to the 2015-2020 average³. Overall, people's access to urban greenspace remained virtually the same as the 2015–20 average, increasing by only 0.2%³.



Sanitation: Improved sanitation and waste systems can provide simultaneous benefits in climate change mitigation and public health. Non-sewered sanitation systems may contribute 4–5% of global anthropogenic methane emissions - while open latrines may pose heightened disease risks. Shorter anaerobic storage, regular emptying, treatment expansion, composting, methane capture, safe reuse and improved emissions accounting can limit disease transmission and GHG emissions²⁰.



Health: Health sector strengthening is a core adaptation strategy that offers major health benefits by improving resilience to climate change and reducing environmental harms. Climate change is already disrupting service delivery through extreme weather, shifting disease patterns, and pressures on facilities, while the health sector itself contributes an estimated 4.4% of global greenhouse gas emissions through energy use, supply chains and waste²¹. Building climate-resilient health systems requires stronger infrastructure, reliable clean energy, climate-informed surveillance and early-warning systems, trained staff, and emergency preparedness plans that maintain care during environmental shocks²¹. At the same time, reducing the sector's environmental footprint through sustainable procurement, low-carbon care pathways, and energy-efficient facilities can lower emissions and improve population health²¹.

¹⁸ Schipperijn, J., Cerin, E., Adams, M.A., et al. Access to parks and physical activity: An eight country comparison. *Urban Forestry & Urban Greening*, 2017; 25: 253-263. ISSN 1618-8667

¹⁹ Georgiou, M., Morison, G., Smith, N., et al. Mechanisms of Impact of Blue Spaces on Human Health: A Systematic Literature Review and Meta-Analysis. *Int. J. Environ. Res. Public Health* 2021; 18, 2486

²⁰ UNICEF and IVL Swedish Environmental Research Institute. Co-benefits of investing in drinking water, sanitation and hygiene services for all. 2026. [Online](#) (accessed 13 September 2026)

²¹ Zhang, Y., Wang, L., Li, X., Chen, H., & Liu, Q. (2024). Climate change and health system resilience: A global review. *The Lancet Planetary Health*, 2024; 8(11), e1234–e1245

3 AVOIDING HEALTH HARMS OF CLIMATE ACTION

Ambitious climate action is vital to protect health, and must be planned and implemented in a manner which avoids unintended health harms. Transitions in food systems, energy access, critical mineral extraction, labour markets, urban environments, and development pathways all carry health risk if not managed equitably and with strong safeguards. The examples illustrate how targeted protections, human-rights standards, and just-transition measures are essential to ensure that climate action strengthens—rather than undermines—health and wellbeing.



Food and energy access: Agriculture and energy transitions must not reduce access to reliable, culturally appropriate, and affordable food and energy. Subsidy reform should be carefully targeted to avoid adverse impacts for lower-income households.



Critical mineral extraction: Mining of transition minerals such as nickel, copper, lithium, bauxite, cobalt, and rare earth elements has led to human rights violations and both large and small-scale environmental health impacts²². While renewable energy avoids the health harms of fossil fuel combustion, energy transitions should avoid the risks for workers and communities of fossil fuel extraction, and safeguards must be employed to avoid replicating harmful power dynamics and extractive practices in the development of the renewable energy industry, and associated health harms.



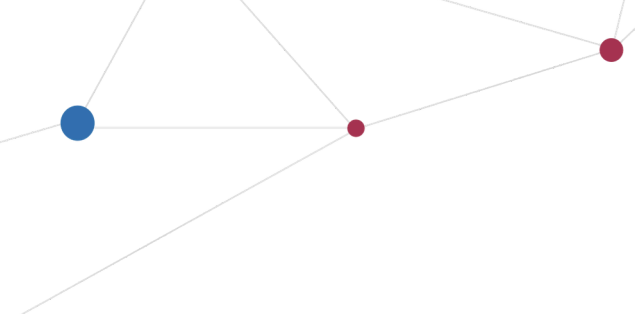
Jobs and livelihoods: Safe and decent work is a major determinant of health, while household income has implications for the health of whole families²³. Labour regulations in energy, agriculture and other professions should be implemented to avoid health harms as part of just transitions, and re-training for workers in high emitting industries must be provided for new green jobs.



Development: Global equity considerations, including the principle of common but differentiated responsibilities and respective capabilities, means of implementation in line with the Paris Agreement, equitable distribution of profits, and attention to sovereignty over land and natural resources, will be necessary to ensure that climate action does not undermine short-term, health-protecting development.

²² Turner, M., Basagaña, X., Albin, M., et al. Occupational health in the era of climate change and the green transition: a call for research The Lancet Regional Health – Europe, 2025; 54

²³ World Health Organization. Social determinants of health. 2025. [Online](#) (accessed 13 Sept 2026)



RECOMMENDATIONS

Strengthened coordination between Ministries of Health and Ministries of Climate, Environment, Energy, Finance, and other climate and health determining sectors discussed in this brief can support planning and implementation of climate policies which protect against the health harms of climate change, optimise additional co-benefits, and avoid health risks. For instance, health experts could be included in national climate committees or councils, or in cross-sectoral implementation plans. Coupled with adequate resources, this can support the following areas of work:

- **National policy processes:** Accounting for potential health impacts avoided and health co-benefits potentially delivered in national climate policies, plans and monitoring, including NDCs, NAPs, BTRs, and sectoral transition roadmaps enhances gains for people and the environment. Reciprocally, climate considerations can also be mainstreamed into health planning.
- **International policy processes:** Consulting between Ministries can support the reflection of health considerations in national positions and priorities prior to UNFCCC meetings.
- **Assess potential positive and negative health impacts:** Conducting health impact assessments, quantifying health harms and benefits of climate action and inaction, and associated financial costs and savings can demonstrate added value of ambitious climate action.
- **Data:** Sharing data across Ministries supports identification of annual climate related health trends supports forecasting and planning, as well as health-tailored early warning and response systems, which are effective interventions to build national health resilience.
- **Public communication:** Assessing and clearly communicating how climate change harms health and how climate actions improve it within national climate policies, can strengthen public understanding, engagement and support for ambitious climate action²⁴.

²⁴ Climate Opinion Research Exchange. Climate-Health Messages Build Support for Climate Action. 2026. [Online](#) (accessed 13 September 2026)



ANNEX 1: HEALTH IN UNFCCC PROCESSES

- **The Convention:** Article 1.1 of the UNFCCC defines the adverse effects of climate change as including impacts on human health and welfare. These adverse effects are reflected in the Convention's first three principles (Articles 3.1, 3.2 and 3.3), which call on Parties to protect the climate system for present and future generations and take precautionary measures to reduce harm. Article 4.1(f) further states that Parties should consider climate change in their social, economic and environmental policies, using tools such as national impact assessments to minimise adverse effects on public health when designing mitigation or adaptation measures.
- **The Paris Agreement:** At COP21 the preamble of the Paris Agreement (1/CP.21) recognised the right to health.
- **Global Stocktake:** The outcome of the first global stocktake (1/CMA.5) highlighted the human right to health and to a clean, healthy and sustainable environment.
- **Adaptation:** The UAE Framework for Global Climate Resilience (2/CMA.5) includes a target on attaining resilience against climate-related health impacts, and health indicators are included in the Belém Adaptation Indicators (12/CMA.7).
- **Just transition:** References to health and clean cooking, as well as health and low-carbon technologies (2/CMA.7).
- **Loss and damage:** Health is a non-economic loss and damage, as recognised in a [2013 technical paper](#) but has not been discussed prominently in negotiations.
- **Mitigation:** 2025 [report](#) of the MWP dialogues refer to the public health benefits of reduction of methane emissions; the role of forests for health, food and water security.
- **Response measures:** September 2026 [workshop](#) on health co-benefits of NDC implementation.
- **Gender:** Call for submissions under the Gender Action Plan on national assessments of relevant issues including health, violence against women and girls, and care work.
- **Action Agenda:** Health has been raised in the action agenda over several years, including the [COP26 Health Programme](#); the [COP28 UAE Declaration on Climate and Health](#), launch of [Guiding Principles for Financing Climate and Health Solutions](#), the [Baku COP Presidencies Continuity Coalition for Climate and Health](#); the [Belém Health Action Plan](#); and the Antalya Initiative for Health Resilience.

ANNEX 2: FURTHER RESOURCES

- The Global Report of the [Lancet Countdown: Tracking Progress on Health and Climate Change](#)
- Lancet Countdown [data platform](#) for country specific data
- WHO [Quality Criteria](#) for Integrating Health in Nationally Determined Contributions
- UNDP health [investment cases](#), including for air pollution action
- Pathfinder [Evidence Bank](#) of case studies of climate-health co-benefit actions
- GCHA Healthy NDC Scorecard [2021](#), [2023](#); Clean Air Scorecard [2023](#)