Why health?

Health is a state of complete physical, mental, and social well-being1. Concern over health can bring communities together, overcoming cultural and political barriers. Health is a fundamental resource regardless of age, gender, socio-economic, cultural, or ethnic background. Good health empowers us to engage in activities with energy, vitality, and resilience, allowing us to live fulfilling and productive lives. Poor health on the other hand, disrupts our lives, leading us to miss school and work. It prevents us from being fully involved with our family and community and reduces our quality of life, and touches every corner of society, as exemplified by the COVID-19 pandemic. Often when we talk about wellbeing, health—both physical and mental—is what we have in mind. As a society, we are also coming to understand that human health is deeply intertwined with the health of our planet. It is impossible to have healthy people on a sick planet. Meanwhile, policies that protect and foster environmental health at both local and planetary scales are inherently good for people too.

Developing a health narrative to support and complement CAN’s core work areas and policy priorities can contribute to raising awareness of the human and tangible impacts of climate change, and the opportunities of climate action, as well as supporting human rights and equity framings at a time when the health impacts of climate change are accelerating rapidly. Health provides the explicit connection between the climate crisis and its impacts on those we love most. Health professionals are also seen as one of the most trusted messengers. In addition, increased emphasis is being placed on health and climate intersections in UNFCCC and other international policy processes, providing an opportunity to break down silos, through closer collaboration between the climate and health movements.

This document summarizes the key links between climate change and health and maps how health relates to different themes in climate decision-making. It does not seek to identify specific recommendations, but rather to point to solutions and principles for action. It has been drafted based on initial workshops with CAN membership held in the lead-up to COP27, and further developed based on contributions from the CAN Health Task Force and other members.

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Climate change and health:

The World Health Organization describes climate change as the “greatest threat to global health in the 21st century.” Indeed, the climate crisis is a health crisis. Climate change affects health outcomes in several ways, both directly and indirectly, including

Direct impacts:

1. **Heat-related illnesses**: Climate change is causing rising global temperatures and more frequent and intense heat waves. Heatwaves can result in heat exhaustion, heatstroke, and other heat-related illnesses. The elderly, children, and those with pre-existing health conditions, and populations with low socio-economic status are particularly vulnerable.

2. **Other extreme weather events**: Increase in the frequency and intensity of extreme events such as hurricanes, floods, and wildfires, cause injuries and deaths, as well as forced displacement.

Indirect impacts:

1. **Food and water insecurity**: Climate change affects agricultural productivity and fisheries, leading to food insecurity and malnutrition. Changes in precipitation patterns can also impact water availability and quality, leading to inadequate sanitation and water-borne diseases such as diarrhea and cholera.

2. **Vector-borne disease spread**: There is a noticeable increase in the spread of infectious diseases transmitted by mosquitoes and ticks, such as dengue fever, Zika virus, malaria, and Lyme disease, as changing temperatures and rainfall patterns create optimal conditions for insects to breed and survive in new regions.

3. **Allergies and respiratory diseases**: Climate change influences the distribution and abundance of allergenic plants and molds. This can lead to increased pollen levels and a higher prevalence of allergies and respiratory conditions such as hay fever and allergic asthma.

4. **Mental health**: Climate change and its associated impacts, such as extreme weather events and the loss of homes or livelihoods, can lead to psychological distress, eco-anxiety, depression, and post-traumatic stress disorder (PTSD). The uncertainty and disruption caused by climate change can have long-term effects on mental health and well-being.

5. **Sexual and reproductive health and rights (SRHR) and gender-based violence**: Climate change threatens SRHR, including menstrual health rights. Climate change is also associated with increases in gender-based violence.

6. **Damage to healthcare infrastructure and disruption to health services**: Extreme weather events can damage healthcare buildings, as well as power supply, medical supply chain, or roads used for access by patients. These impacts prevent or disrupt the provision of care, and therefore health outcomes.

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Health impacts of fossil fuels:

In addition to driving the health impacts of climate change, fossil fuel dependence also harms health through air pollution from fossil fuel combustion, and hazards arising from extraction and processing. Fossil fuel combustion, in particular diesel and coal, annually causes approximately 3.6 million deaths from air pollution worldwide\(^4\), with some estimates as high as 8.7 million\(^5\). Air pollution is a major concern for the environment, health, and human development worldwide. It affects our health and quality of life throughout the life course, with evidence of links to cancer, asthma, stroke, heart disease, diabetes, obesity, changes linked to dementia, and harmful effects on the fetus and young child. Despite these well-documented consequences, 99% of the world’s population lives in places where air quality levels breach the World Health Organization’s guidelines\(^6\). Meanwhile, air quality monitoring is inadequate in some of the most polluted large urban areas. As a result, air pollution is neither recognized nor addressed as the public health crisis it is. The economic costs of air pollution-related health impacts are tremendous - amounting to over $8.1 trillion, or 6.1% of global GDP, in 2019\(^7\). In addition to the air pollution, the toxic discharges from the downstream industries of fossil fuels - petrochemicals, plastics, and pesticides are also extremely detrimental to human health and the environment. Several studies have shown that communities living in the vicinity of such facilities suffer from several adverse health impacts including cancers\(^8\), endocrine and reproductive disorders, birth defects\(^9\), etc. The dangers to public health posed by fossil fuels and by extension the downstream petrochemicals, plastics, and pesticides are very clear.

Health at the heart of climate action:

The health lens is a systems-change, integrative lens - protecting and promoting health necessitates transformational shifts across all sectors of societies. This notion is encompassed by the concept of ‘wellbeing economies’, whereby economies are designed to serve people and the planet, not the other way around. Clean air, safe water, nourishing food, and adequate shelter are all vital for human life. Climate action across sectors both reduces health impacts and further maximizes health gains, including through reduced air pollution from transitioning to clean and sustainable renewable energy like solar and wind as well as high energy efficiency efforts across all national economic sectors (with improvements evident even within an election term\(^10\)), improved nutrition from plant-rich diets, and improved physical activity from facilitating cycling, walking and public transit over private cars\(^11\). Agroecology and adaptation in agriculture and water and sanitation promote food and water security, while urban green space reduces the urban heat island effect and promotes mental health. Furthermore, addressing the health impacts of climate change requires addressing underlying inequalities between communities and countries. The injustices that are at the root of the climate crisis are the same as those that drive global and local health inequalities.

It is thus imperative that health should be seen as a foundational consideration in climate action; not merely as a ‘co-benefit’. Protection and promotion of public health are central objectives and guiding principles in climate-related policies and interventions. Taking health as a foundational consideration reflects how the impacts of climate change on health are significant, immediate, and far-reaching, and therefore necessitate dedicated attention and resources. This approach places equal emphasis on climate action and the protection of public health, seeking to maximize health gains and climate action. For instance, a just transition from fossil fuels to clean renewable energy is vital to mitigate climate change, and thus also health impacts, but also

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\(^4\) Lelieveld, 2019. Effects of fossil fuel and total anthropogenic emission removal on public health and climate.

\(^5\) Vohra, 2021. Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem


\(^7\) World Bank, 2022. What You Need to Know About Climate Change and Air Pollution.


improves air quality, thereby reducing respiratory illnesses and improving overall health. By prioritizing health as a foundational consideration, we ensure that sufficient attention, resources, and specific interventions are directed toward protecting public health, addressing health inequities, and building resilience in the face of climate change. On the other hand, considering health solely as a ‘co-benefit’ of climate action reduces it to a secondary consideration, rather than a core rationale requiring the prioritization of dedicated resources. This may not adequately address the scale and urgency of the health challenges posed by climate change.

**Climate change, human rights, health equity, and social justice**

Climate, health, and human rights are intrinsically linked. The Paris Agreement reaffirms the need for States to uphold their obligations related to the human right to health in the context of climate change. The Sharm El-Sheikh Implementation Plan additionally recognises the human right to a clean, healthy, and sustainable environment. The United Nations Declaration on the Rights of Indigenous People acknowledges the right of Indigenous peoples to the conservation and protection of the environment and the productive capacity of their lands or territories and resources. The Convention on the Rights of the Child recognizes the inherent right of every child to life (Article 6), and the right of the child to the enjoyment of the highest attainable standard of health (Article 24).

Climate change disproportionately affects the health of populations who are made vulnerable by injustices relating to their geographic location or individual characteristics, undermining these human rights. While impacts are felt in all world regions, people in the Global South, especially small islands and climate frontline States and communities, bear the brunt of health impacts. Furthermore, women, children, people with disabilities, the elderly, people with non-heteronormative SOGIESC, low-income communities, Indigenous Peoples, migrants, and other marginalized groups are most impacted at subnational level. These populations often have limited access to healthcare and inadequate housing, facing higher exposure to environmental hazards, while having fewer resources to adapt and recover. Health impacts are intertwined with social, economic, ecological and climate justice. Disproportionate health impacts of climate change on these populations exacerbate existing disparities. Placing health and human rights at the heart of climate action ensures a focus on equity, aiming to reduce health inequities and promote social justice.

According to a World Bank estimate, climate change could ‘drag more than 100 million people back into extreme poverty by 2030’, and much of this reversal would be due to ‘negative impacts on health’. The climate risk index shows that seven out of the ten countries most impacted by extreme weather events are low- and middle-income countries. In addition to financial impacts on individuals and communities, the climate crisis drives national debt, with implications for health sector spending and overall health outcomes. Climate change also poses significant risks to national security, particularly in regions with existing political instability.

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12 UNFCCC, *2015*. Paris Agreement.

17 Sexual orientation, gender identity and expression and sex characteristics (SOGIESC)
18 World Bank, *2017*. Connecting Climate Change and Health for Better Development
Loss and damage

- Almost all loss and damage will damage health through the direct impact of disasters, loss of clean water and access to food, loss of biodiversity and ecosystem damage, and forced migration.
- Health losses and damages include increased burden of disease, deaths, and damage to healthcare infrastructure and capacity, through damage to healthcare infrastructure, supply chains, access routes or service provision, or migration of healthcare workers. These impacts in turn have economic implications in terms of treatment costs and reduced labour productivity. While health is classified as a non-economic loss (including physical and mental health impacts), some health-related losses are economic losses, such as damage to healthcare infrastructure and lost labor productivity. In addition to providing the financial resources necessary for rebuilding, a loss and damage finance facility could also be used to fund social protection schemes to improve community access to healthcare services.
- The burden of climate-sensitive disease is increasing. Advances in attribution science mean that it is increasingly possible to directly demonstrate the health impacts of climate change and individual extreme weather events. Strengthened data is needed including the collection of sex and gender-disaggregated data. This could be strengthened through technical assistance via the Santiago Network, although ongoing improvements in evidence should not delay the allocation of resources.
- Needs-based assessments of required loss and damage response can further facilitate an understanding of health and climate nexus and the need based routes through which to address them.

Adaptation

- Adaptation across sectors is essential for health and cultural well-being, including the relationships First Nations communities maintain with land and culture in the face of a rapidly changing climate. In addition to adaptation in the health sector itself, resilient sanitation and agriculture are vital for preventing water-borne disease and malnutrition.
- Health outcomes are indicative of progress made in adaptation across sectors and geographies. Health targets and metrics are being considered for the Global Goal on Adaptation.
- Resilient health systems, including healthcare infrastructure, workforce, and supply chain, are critical for the health of all populations, including the most vulnerable in society. Strengthened primary healthcare facilities in both rural and urban areas are required to avoid widening health inequalities. For instance, climate-resilient health systems are more able to respond to health impacts and to ensure sexual and reproductive health services in times of crisis or disaster. In addition to resilient healthcare facilities, there is a need to develop resilient supply chains for medicines.
- The healthcare sector is one of the three sectors most often prioritized for adaptation in Parties’ NDCs, together with water and agriculture. Health sector actions should be included in NAPs, NDCs, and other adaptation strategies and documents, supporting wider climate adaptation.
- Healthy communities support overall climate resilience – informed, empowered and healthy populations are more able to resist and recover from climate shocks. Ensuring comprehensive health services is key for gender equality, as SRHR and bodily autonomy are foundations for achieving gender equality and the empowerment of all women and girls, and thus for increasing climate resilience.
Co-benefits of mitigation and adaptation in the energy sector

Globally, 759 million people, mainly in the Global South, do not have access to electricity to light their homes, refrigerate their food, or keep cool in rising temperatures\(^{20}\). The same is true for essential local services like hospitals, schools, and smaller enterprises like dairies or manufacturing suffering from unreliable or lack of power supply. Decentralized and rural solar grids and other renewables for power can improve social determinants of health while contributing to longer-term mitigation efforts in place of locking in fossil fuel infrastructure.

Around 2.4 billion people, mainly in South and South East Asia as well as Sub-Saharan Africa, have to rely on dirty biomass fuels such as charcoal, coal, local wood, organic residues, and animal waste for cooking. This causes about 3.2 million premature deaths annually from household air pollution\(^{21}\). Biomass use also exacerbates climate chaos through deforestation, releasing GHGs and worsening runoff from extreme rainfall events leading to higher risk of flooding.

Reliable and clean energy access for cooking and heating can contribute to adaptation and mitigation\(^{22}\) and offers a plethora of social and societal benefits. Efficient wood stoves, biogas digesters, ecologically sound multipurpose agroforestry schemes to improve air quality, reduce pressure on the environment due to nutrient removals, and minimize time wasted by mainly women and children to collect firewood and organic residues.

To eradicate energy poverty and provide a clean and sustainable energy supply is an agreed target under the Sustainable Development Goals for 2030 (SDG 7). It would require annual investments of about USD 36 billion per year, equivalent to only 10% of what is spent by the upstream oil and gas sector\(^{23}\). Improvements in the energy efficiency of regularly used appliances like fridges, lighting, cooking, heating and expansion of reliable public transport are powerful ways to improve resilience, lower energy bills, and address inequities in health (leading to improvements in other social determinants i.e. economic, education) while reducing emissions and air pollution.

Health sector action

The health sector itself has a role to play in both mitigation (contributing to over 5% of global emissions\(^{24}\)) and in adaptation to respond to growing health impacts while seeking to avoid disruptions to health services due to climate change. The sector is poised to triple its emissions by 2050 in a business-as-usual scenario. Some health sector stakeholders are leading the way towards decarbonization, with 75 governments signing up so far to an international commitment to developing low-carbon health systems under the COP26 Health Programme, under the WHO Alliance for Transformative Action on Climate Change and Health (ATACH) seeks to accelerate progress towards resilient low-carbon health systems. Additionally, over 78 healthcare institutions representing the interests of over 14,000 hospitals and health centers in 28 countries, joining the Race to Zero and committing to achieving net-zero emissions by 2050.

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20 Sustainable Energy for All. n.d. SDG 7.1 - Access to energy.
Mitigation

- The phase-out of fossil fuels and associated subsidies is a public health imperative. Fossil fuel dependence harms the health of local communities and workers from the point of extraction and through transport\(^{25}\), processing, and combustion on account of air, water, and soil pollution in addition to global health impacts of climate change. Health impacts are an economic externality, not on the balance sheet, but still contributing to the “true cost” of fossil fuels, making fossil fuel subsidies uneconomic for society in the short term as well as in the long term, and adding to the rationale to redirect funds invested in fossil fuel subsidies to alternatives beneficial for the planet and people.
- Even if proven to work at scale, carbon capture and storage will not yield the same benefits as fossil fuel phase-out in terms of reduced air, water, and soil pollution arising from fossil fuel extraction, transportation and processing.
- Short-lived climate forcers (SLCFs) affect climate and are, in most cases, also air pollutants\(^{26}\). The majority of SLCFs contribute to warming. Black carbon, tropospheric ozone, and HFCs cause direct harm to human health. Some SLCF are also precursors for highly toxic atmospheric other SLCF gasses, (as methane is for tropospheric ozone). Tropospheric ozone is a strong contaminant for several cereals and reduces yields in sunny regions, and impacts food security. Some SLCFs, such as SO\(_2\), have a cooling effect but are nonetheless harmful to health and ecosystems.

Just Transition

- In order to be just, transitions should be at a pace in line with the science. Delays in inevitable transitions are inherently unjust, undermining the right to health with an increasing threat to health and lives, and missed opportunities to protect the health of those made most vulnerable. A just transition needs to go beyond the rhetoric of merely replacing fossil fuel jobs with green jobs, by recognizing the need to simultaneously address economic and environmental concerns, ensuring that workers and communities are not left behind during the shift to a more sustainable and equitable future. Therefore, any just transition process must include in a participatory and democratic process all sectors of society, not only those negatively impacted by the transition, like fossil fuel workers but also the potential ‘winners’ like smart grid workers for a fair and equitable, participatory effort sharing in solidarity, locally, regionally, nationally and internationally.
- People’s social, physical, and mental well-being is prioritized in a just transition, with no one left behind. This requires meaningful consultation of communities most impacted by business-as-usual models (such as those living near extraction sites), to identify shortcomings in the current system to be addressed as part of the transition; and of communities that may be vulnerable either as a result of present norms, and/or due to measures under consideration as part of the transition in a given sector, such as fossil fuel workers, fisherfolks and farmers. First Nations voices and indigenous communities must be uplifted in discussions and actions around renewable energy, energy efficiency, remediations of degraded and contaminated ecosystems, compensation for losses to ecology and health, meaningful adaptation and resilience building, and other policies.
- Just transitions should be planned to maximize physical and mental health gains. This will ascertain the interlinkages between human health and planetary health, social well-being, prosperity, justice, and equity. Not all paths to emissions reductions are equally beneficial to health, and indeed some are harmful. Repeated health impacts on local communities on account of extractivism must be avoided at

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\(^{25}\) Toxic spills from pipelines affect agricultural lands, waterways, and oceans.

\(^{26}\) SLCFs include aerosols (sulphate, nitrate, ammonium, carbonaceous aerosols, mineral dust and sea spray), which are also called particulate matter (PM), and chemically reactive gases (methane, ozone, some halogenated compounds, nitrogen oxides, carbon monoxide, non-methane volatile organic compounds, sulphur dioxide and ammonia).
all costs when sourcing minerals to support renewable energy technologies and batteries as well as industrialized bioenergy use and large-scale hydropower. Health impact assessments should be performed prior to implementation.

- Just transitions should be planned to promote equity: affordable energy access must be achieved and maintained for vulnerable populations, and livelihoods must be protected for former fossil fuel workers. Poverty (for example due to lack of stable employment or high outgoings for essential energy needs) is associated with greater risk of ill-health
- Inclusive of transformations in the healthcare sector: the health care sector should invest in low-carbon, climate-resilient public health care infrastructure and services that are anchored by communities and accessible to all. Just Transition needs to be examined from a service systems perspective – one that emphasizes health, care, and well-being. This will ascertain the interlinkages between human health and planetary health, social well-being, prosperity, justice, and equity.

**Finance**

- The majority of countries surveyed by WHO have health adaptation policies and plans; 70% of these say financing was a major barrier to implementation.
- Only 0.3% of multilateral climate change adaptation finance was directed to the healthcare sector 2018-2020 – the health sector would benefit greatly from the overall commitment to double adaptation finance.
- Including mitigation and adaptation in national planning across sectors that offer health co-benefits like clean air and improved nutrition can yield increased returns on investment. For example, in many countries, investment costs of implementing policies to reduce GHG emissions would be substantially offset by the health co-benefits of cleaner energy that emerge from a low-carbon economy. Health co-benefits can provide an economic rationale for financing for certain activities and health impact assessment should be consistently included in the evaluation of projects and programs.
- Ensuring finance flows to the local level, including grassroots groups and women’s rights organizations, promotes rights-based approaches to health advocacy and services.
- Climate finance commitments remain insufficient and unfulfilled, and health and humanitarian systems are overburdened and underfunded. We must protect the latter, whose work is geared towards saving lives, reducing suffering, restoring dignity, and protecting health and wellbeing. However, we urgently need to scale up the former, considering neither health nor humanitarian actors can address the erosion of life support systems. Reciprocity is key - climate finance should benefit health, and health finance should also support the delivery of climate finance goals.

**Nature**

- Human health is inherently dependent on biodiversity and healthy ecosystems, including safe air, water food, and traditional plant-derived medicines.
- Human encroachment on natural areas, due to unsustainable expansion of human settlements, or industrial agriculture, increases the risk of transmission of zoonotic diseases from animals to humans.
- One Health and planetary health approaches can help to simultaneously protect and promote the health of humans and the ecosystems on which they depend for survival.
- Halting all destruction of, and protecting primary and biodiversity-rich ecosystems like forests, peatlands, and savannas and starting to regrow degraded ecosystems in line with CBD Global

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Biodiversity Framework goal of 30% of all all land with legal protection by 2030\textsuperscript{29} will not only reduce carbon emissions but also store CO\textsubscript{2} in ecosystems and reduce atmospheric concentrations and climate impacts while providing a plethora of benefits for biodiversity, freshwater, local climate, and people.

**Agriculture\textsuperscript{30}**

Generally, the entire agricultural, food, and land use complex has a myriad of implications, challenges, and impacts on human health. For instance, life-cycle analysis shows that our global food system including infrastructure, transport, cooling, marketing, etc. is responsible for about 21 - 37% of all global GHG emissions while the direct GHG emissions of the entire land use sector are only 13%.\textsuperscript{31}

- Industrialised meat production, especially of ruminants, has a high emissions intensity, especially when coupled with the emissions intensity of fodder production.
- Plant-rich diets require less land use (with benefits for nature), less freshwater use, and lower energy inputs than those required, for example, for industrialized beef production.
- Healthy sustainable diets based on vegetables, fruits, nuts, and non-meat non-fish foods that are minimally processed are associated with reduced risk of diseases including cardiovascular disease and some cancers.
- Health impacts of unhealthy diets are implicated in numerous health conditions and add to healthcare costs, providing evidence for the redirection of unsustainable agricultural subsidies to promote consumption of human-edible plant-based foods that benefit health and the environment and toward incentives for innovation on alternative proteins.
- Reducing food loss and waste of about 30% worldwide\textsuperscript{32} supports emissions reductions, frees pressure on million km\textsuperscript{2} of land, creates space for more extensive sustainable/organic and less intensive food production, and can help tackle undernutrition.
- Agroecological approaches and Indigenous foodways\textsuperscript{33} are more sustainable, and often more diverse and nutritious, and lead to reduced dependence on nitrogen-based fertilizers and pesticides.
- Food systems, which encompass agriculture, transportation, processing, selling/purchase, and waste management should facilitate the consumption of diets that are sustainable, nutritious, and affordable.
- Smallholders dependent on pastoral herding and local fishing for nutrition must be protected in food system transitions. Agricultural subsidies often directed to conventional mainstream farming and food commodities should be redistributed towards more ecological farming with intact and connected nature zones as part of the rural farmlands, delivering local food security and healthy diets.
- CAN opposes monocultural, meat-based industrial agriculture as wasteful, polluting, and detrimental to biodiversity, and supports pastoral animal herding and sustainable and local fishing. CAN promotes sustainable, preferably organically produced and, if occurring in global markets, fair-traded agricultural products.


\textsuperscript{30} IPCC, 2019. Special Report on Land Use and Climate Change 2019, Summary For Policy Makers.

\textsuperscript{31} IPCC, as above para A.3

\textsuperscript{32} IPCC as above, para B.6.3

\textsuperscript{33} The Frontline, 2022. When native foods heal.
Global Stocktake

- A health framework can contribute to raising ambition across sectors, and in relation to both mitigation and adaptation, enabling the present process in the UNFCCC, the Global Stocktake (GST), to deliver its core function.

- A health narrative also complements growing equity and human rights narratives under the GST, as health risks are higher in low-income, marginalized, and vulnerable communities.

- A sectoral approach to good practice sharing under the GST could accelerate the delivery of the COP26 Health Commitments.

- Stories of health impacts and benefits can bring local experiences to the global process of the GST.

- As of 2022, over 90% of countries’ climate pledges (NDC) referred to health\(^34\), but emissions reductions in NDCs do not exemplify a healthy level of climate ambition. Rather, projected warming levels will be catastrophic for human health.

\(^{34}\text{World Health Organization, 2023.} \) 2023 WHO review of health in nationally determined contributions and long-term strategies: health at the heart of the Paris Agreement.