



Submission to the UNFCCC First Global Stocktake, Second Technical Call, August 2022

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The Paris Agreement acknowledges the relevance of the right to health, to climate action. To date, integration of health issues into policymaking and monitoring under the UNFCCC has been insufficient, despite IPCC warnings of human health impacts since 1990¹. In its sixth assessment report published in 2022, the IPCC describes the scientific evidence confirming climate change to be a “threat to human well-being” as “unequivocal”². Indeed, climate change is recognised by the World Health Organization (WHO) as the greatest threat to health of the 21st century³. Climate-sensitive health threats already cause millions of avoidable deaths annually⁴, undermining the right to health and a healthy environment, and driving severe productivity losses. This submission to the Global Stocktake (GST) by the health stakeholder community aims for a rapid, de-siloed and amplified approach to climate change and global health to strengthen UNFCCC policymaking and implementation of the Paris Agreement to reduce risks and impacts to human health.

This submission **replaces and updates the submission made by the Global Climate and Health Alliance and the Health and Climate Network in February 2022 in response to the first call for inputs**⁵. It also builds on submissions to SB56 in June 2022 with the WHO^{6,7,8}. It draws on six key documents developed and supported by stakeholders from across the climate and health community in 2021-2022, namely:

1. The Healthy Climate Prescription, an open letter signed by over 600 organizations, representing 46 million nurses, doctors and health workers worldwide and delivered to the UNFCCC and COP26 and COP27 Presidents in Glasgow⁹.
2. The Health and Climate Network Call to action ‘Paris Climate Change Agreement: urgent priority for global health’ which is signed by 42 organizations across sectors, worldwide, delivered to the COP26 Presidency in October 2021¹⁰.
3. The WHO special report to COP26 ‘The Health Argument for Climate Action’, published in advance of COP26 and developed in consultation with over 150 organizations and 400 experts and health professionals worldwide¹¹.
4. An editorial simultaneously published in over 220 health journals worldwide on 6 September 2021, which called

* The World Health Organization and the Global Climate and Health Alliance jointly host the WHO Civil Society Working Group to Advance Action on Climate Change and Health. Many of the co-submitting organisations are members of the Working Group ([link](#))

on governments to take emergency action to tackle the catastrophic harm to health from climate change¹².

5. An analysis of health in multilateral environmental agreements by the International Institute for Sustainable Development and the University of Edinburgh Global Health Academy¹³.
6. The Lancet Countdown 2021 Report on Health and Climate Change¹⁴, compiled by a collaboration of over 120 leading experts from academic institutions and UN agencies around the world.

Key Concepts and Definitions

This submission refers to and is rooted in the following concepts:

- Failure to implement the Paris Agreement through action across all sectors will result in catastrophic **health impacts** in every region of the world¹⁵. As described by the IPCC, climate change has profound direct and indirect impacts on health and wellbeing, driving heatwaves and other extreme weather events, vector- and water-borne disease transmission, food and water insecurity, and negative mental health impacts. Mitigation and adaptation efforts reduce health impacts.
- In addition, climate action can yield **health co-benefits**: emissions reductions in the energy sector improve air quality; multimodal transport systems improve air quality and support physical activity; sustainable food and agriculture systems protect and promote nutrition; nature based solutions offer mental health benefits; and resilient water and sanitation systems ensure safe drinking water and hygiene. Overall mitigation and adaptation action across sectors are thus key factors in shaping the overall health of populations, i.e. **public health**.
- Public health is a powerful accelerator for climate action: framing and monitoring climate action in health terms can build widespread support for ambitious action, and yield high economic returns on investment.
- Similarly, planetary health (a concept based on the understanding that human health and human civilisation depend on ecosystem health and the wise stewardship of ecosystems) is considered an enabler of climate-resilient development under the IPCC¹⁶. Healthy populations, which can be ensured by mitigation and adaptation efforts, are necessary for both economic productivity and overall climate resilience, being more likely to withstand and recover from climate shocks. This can be understood as **health resilience**.
- Public health is therefore both a prerequisite for and a **critical indicator** of the successful implementation of long-term goals of the Paris Agreement.
- The **healthcare sector** (including but not limited to hospitals, clinics, community health centers, social care facilities, and ambulance transportation) is a significant sector in every country and can play a key role in directly delivering mitigation (the healthcare sector contributes 4.9% of global emissions) and adaptation. At COP26, and in the months since, 59 governments committed to climate-resilient health systems and 55 to sustainable, low-carbon health systems (of which 20 have committed to net zero health systems)¹⁷. The GST can play a role in ensuring accountability to deliver these commitments and mobilize wider healthcare sector action to realize both mitigation and adaptation goals. International financing is critical to enable progress in developing countries.
- The **health community** (including but not limited to healthcare delivery staff and administrators, public health and other health professionals, allied health workers, United Nations experts, academics, and staff of health professional associations and health NGOs) has valuable expertise in integrating health into climate policymaking to maximize the gains described above.

The organizations supporting this submission note that **monitoring public health and equity implications of the implementation of the Paris Agreement can build broad support for ambitious action, while monitoring progress and good practice made within individual sectors, including the healthcare sector, can enhance scale up of positive action**¹⁸. In Decision 19/CMA.1, Parties recognise that the GST is crucial for enhancing the collective ambition of action and support

towards achieving the purpose and long-term goals of the Paris Agreement. Inclusion of a focus on public health and the healthcare sector within the GST can enable delivery of this outcome. In addition, such considerations will promote the implementation of UNFCCC article 4.1.f, whereby Parties commit to consider public health implications of mitigation and adaptation policies and strategies.

Recommendations for Integrating Health into the GST

- Within the GST technical assessment phase:
 - Monitor the public health implications of progress in delivering the Paris Agreement across sectors.
 - Monitor the progress of the healthcare sector across mitigation and adaptation as part of an explicit sectoral approach to the GST.
 - Call upon relevant experts from the health community to support development of decision-making on impact and response indicators and cost-benefit analyses of action, following options proposed under the Adaptation Committee¹⁹.
- In future phases of information collection and preparation of the GST:
 - Promote submission of information on the public health and equity implications arising from the extent of progress made to date in implementing the Paris Agreement across sectors (i.e. quantified prevention of health impacts and quantified yield of health co-benefits).
 - Promote submission of sectoral information by Parties and observers of mitigation and adaptation progress made in individual sectors, including the healthcare sector.
- In outputs of the GST:
 - Address the role of the healthcare sector in implementing the Paris Agreement as this relates to both mitigation and adaptation to facilitate the sharing of good practice across Parties and regions.
 - Promote guidance of how Parties and non-State Actors can integrate consideration of public health and equity implications arising from the extent of progress made in implementing the Paris Agreement across sectors to date, spanning mitigation, adaptation, finance, and loss and damage. This should include definition of specific metrics and indicators to assess the implications for public health of the extent of progress in implementing the Paris Agreement.

Responses to Questions Posed by the SB Chairs

While the remainder of this submission comprises health-focused responses to questions proposed by the SB Chairs, the first question, on mitigation, is proposed by the co-submitting organizations.

Mitigation

Question proposed by submitting organizations*: To what extent are public health gains being maximized in mitigation action towards achieving the goals defined in Articles 2.1(a) and 4.1 of the Paris Agreement?

Public health

Public health and health equity are central to wider social equity, sustainable development, eradication of poverty and resilience to climate change and other impacts. **In addition to action taken by the healthcare sector itself, mitigation in the energy, food and agriculture, and transport sectors in line with the Paris Agreement not only prevents health impacts, but can offer health co-benefits and related economic gains in terms of improved air quality, healthier diets, and increased physical activity, with the potential to avoid 1.18 million, 5.86 million, and 1.15 million deaths**

respectively each year by 2040 across just nine countries (Brazil, China, Germany, India, Indonesia, Nigeria, South Africa, the UK, and the USA)²⁰. These physical health benefits, as well as better water quality and improved mental health, can be reaped in far shorter time frames than those in which positive changes to the climate can be observed, and can motivate and build support for further action. For example, improvements in air quality during the first wave of the Covid-19 pandemic led to reduced air-quality related mortality in multiple countries²¹. In order to realize these benefits, the health community should be involved in mitigation planning. Only 28% of updated and enhanced NDCs as of 2021 recognised and/or assessed the health co-benefits of mitigation²². This is a missed opportunity, since health co-benefits offer high economic returns - **in China and India, costs of reducing greenhouse gas emissions could be compensated with the health co-benefits alone**, with partial offsetting in the United States and Western Europe²³. In particular, the phase-out of fossil fuels is a public health imperative. **Improvements in air quality yielded by the phase out of fossil fuels would save 3.6 million lives annually²⁴. These health co-benefits should be measured in order to incentivise continued progress in implementing the Paris Agreement.**

Short-lived climate pollutants (SLCPs) present particular risks for both public health and the climate. Black carbon and tropospheric ozone are health-damaging air pollutants, while methane is a precursor of the latter. **Progress in terms of SLCP reductions and health co-benefits should be monitored under the GST, in turn building the evidence base for further action.**

Question 3 proposed by the SB Chairs: What efforts are being undertaken to plan, implement and accelerate mitigation action towards achieving the goals defined in Articles 2.1(a) and 4.1 of the Paris Agreement?

Healthcare sector

The healthcare sector contributes 4.9% of global greenhouse gas emissions²⁵. As a major employer, it represents around 10% of global GDP²⁶. **As well as being responsible for its own operations, it also plays a role in cross-sectoral mitigation efforts, as well as through its supply chains and purchasing power²⁷.** At COP26, and in the months since, 55 governments committed to sustainable, low-carbon healthcare systems, of which 20 have committed to net zero healthcare systems.

Key resources

- Lancet Countdown annual reports monitor health co-benefits from year to year since the adoption of the Paris Agreement, as well as emissions from the healthcare sector. Relevant indicators are in section 3 of each report ([2021 report](#), [2020 report](#), [previous reports](#)).
- The CaRBonH and HEAT tools by the WHO, Low Emissions Analysis Platform (LEAP) by the Stockholm Environment Institute and the GAINS model by the International Institute for Applied Systems Analysis (IIASA) enable the quantification of public health and economic co-benefits from mitigation actions and provide invaluable data for both national and international public health and climate monitoring efforts. Several countries are currently undertaking health co-benefit assessments for their NDCs and/or sectoral mitigation targets. ([CarbonH](#), [HEAT](#), [GAINS](#)).
- The Pathfinder Initiative, based out of the London School of Hygiene and Tropical Medicine and launched at the end of 2020, will support rapid progress towards a healthy, zero-carbon society by analyzing research evidence including replicable case studies of successful interventions that combine climate mitigation with measurement of public health and other co-benefits of GHG emission reductions. Its first report will be published in February 2023 ([link](#)).
- World Health Organization, 2018. 1.5 Health Report: Synthesis of Health and Climate Science in the IPCC SR1.5, pp 13-14 ([link](#)).
- Hamilton et al, 2021. The public health implications of the Paris Agreement: a modeling study ([link](#)).

Adaptation

Question 8 proposed by the SB Chairs: How adequate and effective are the current adaptation efforts and the support provided for adaptation towards achieving the goals defined in Articles 2.1(b) and 7.1 of the Paris Agreement?

Public health

Comprehensive consideration of public health in broader adaptation planning is needed to ensure that adaptation measures deliver the maximum benefits for public health. Current adaptation programmes, such as in agriculture, water resources and city infrastructure should also aim to build healthy, resilient populations which are well fed, with clean air and water, and safe shelter, as well as access to quality healthcare services. Liveable cities with ample green and blue infrastructure both protect inhabitants from extreme heat and promote active transport and mental wellbeing. Beyond urban environments, well-planned nature-based adaptation solutions also offer opportunities for health co-benefits²⁸. Workplace adaptations to reduce heat stress can reduce heat-related illness and accidents, and heat-related loss of productivity. In order to realize these benefits, the health community should be involved in adaptation planning. **Health metrics applicable for assessing the Global Goal on Adaptation, as noted by the Adaptation Committee, will facilitate monitoring of such linkages²⁹.** Adaptation and mitigation actions should be integrated to minimize trade-offs and capitalize on potential synergies.

Healthcare sector

Climate change presents a growing threat to both public health and to healthcare sector infrastructure. In any given setting, the burden of existing public health threats may grow, new threats may emerge to which local systems are not well equipped to respond, and health infrastructure necessary for responding to these threats may be damaged by extreme events. The future effects of climate change on vector-borne diseases can be significantly offset through enhanced commitment to and implementation of integrated vector control management approaches, disease surveillance, early warning systems, and vaccine development³⁰.

The healthcare sector is one of the three sectors most often prioritized for adaptation in Parties' Nationally determined contributions (NDCs)³¹. At national level, many Parties are taking steps to improve healthcare sector resilience, with 94% of countries surveyed by the WHO including health in their respective National Adaptation Plans and over three quarters having developed or currently developing national health and climate change plans or strategies³². Health National Adaptation Plans (HNAPs)³³, under the ministry of health and with the support of the WHO, are being developed as stand-alone strategies under review of ministries of health. According to the WHO, to date, 67 countries have completed an HNAP or chapter on health in their NAP. However, these efforts are not yet maximized. This can be ameliorated through capacity building. **Quantity and comprehensiveness of HNAPs can be an important tool to deliver and assess implementation under the Paris Agreement, and HNAPs should become a component of party-driven work under the UNFCCC.** However, these plans may only be delivered if full means of implementation are made available.

Key resources

- World Health Organization, 2021. Global Survey on Health and Climate Change ([link](#)).
- World Health Organization, 2021. Review of Health in National Adaptation Plans ([link](#)).
- World Health Organization, 2018. 1.5 Health Report: Synthesis of Health and Climate Science in the IPCC SR1.5, pp 15-16 ([link](#)).
- Intergovernmental Panel on Climate Change, 2022. Chapter 11, Climate Change 2022: Impacts, Adaptation and Vulnerability. Working Group II Contribution to the IPCC Sixth Assessment Report ([link](#)).

Finance Flows and Means of Implementation

Question 12 proposed by the SB Chairs: What is the collective progress in terms of the implementation of, and ambition in, the provision and mobilization of scaled-up financial resources from a wide variety of sources, instruments, and channels towards achieving the goals defined in Article 9 of the Paris Agreement, noting the significant role of public funds, and aiming to achieve a balance between finance for adaptation and mitigation?

Public health

As well as financing specifically for the healthcare sector, finance is required to maximize and quantify health co-benefits of mitigation for example in the energy, food and agriculture, and transport sectors; and co-benefits of adaptation in the agriculture, water resources and infrastructure sector currently lack adequate financing.

Healthcare sector

While the majority of countries surveyed by the WHO have developed health adaptation policies and plans, 70% of these reported that financing was a major barrier to their implementation³⁴. Healthcare sector action is not currently adequately funded via the GCF and other comparable funds. Indeed, there are no health multilaterals among the entities accredited to the GCF and or Adaptation Fund. **Between 2018 and 2020, \$14.0 million (0.3%) of multilateral climate change adaptation funding was directed specifically at the healthcare sector and \$697 million (13.6%) of funding had potential secondary benefits for public health³⁵.** Water and agriculture are features of many projects and adaptation measures in these sectors are essential to protect public health, but the health community is rarely involved in the development and implementation of such plans, and health benefits are thus not maximized³⁶. **Increased financing is needed for public health and health resilience, and engagement of the health community in the design of interventions can ensure that available funds yield maximum returns on investment on account of health co-benefits.**

Key resources

- UN Environment DTU Partnership, 2018. Adaptation Gap report 2018 ([link](#)). This report in 2018 included an explicit focus on health but more recent UNEP Adaptation Gap reports, which include health alongside other priorities, are also relevant.
- Watkiss & Ebi, 2022. A lack of climate finance is harming population health ([link](#)).
- The World Health Organization Climate Change and Health Tool enables Parties to calculate likely investment required to respond to the health impacts of climate change ([link](#)).

Loss and Damage

Question 17 proposed by the SB Chairs: What is the collective progress in terms of the current implementation of, and ambition in efforts made to enhance understanding, action, and support towards averting, minimizing, and addressing loss and damage associated with the adverse effects of climate change? What further action is required to strengthen these efforts?

Public health

Impacts to health are recognised by the UNFCCC as a non-economic loss under loss and damage. Health impacts of climate change include vector-borne and water-borne disease, as well as injury, illness and mortality arising from wildfires, drought, extreme heat, food insecurity, floods, storms and other extreme weather events³⁷. It is increasingly possible to attribute health effects to human induced climate change rather than natural variability - for example a recent estimate using data from over 700 sites in 43 countries shows that about one third of heat related deaths over recent

decades can be attributed to climate change³⁸. **These health impacts also have economic implications, including direct health service costs and loss of productivity in the wider economy. Health impacts are severe according to initial global estimations but not well quantified³⁹.**

Health-related direct and indirect non-economic losses arise from losses of life, health, mobility, territory, cultural heritage, indigenous or local knowledge, societal or cultural identity, biodiversity, and ecosystem services due to climate change⁴⁰. Health impacts (at the individual, population, and environmental levels) should be considered under losses and damages. Support for implementation to address these losses has not been maximized. **The health community should be called upon to improve quantification of these losses and to support activities to address them.**

From a health perspective, financing is necessary both to enable operationalisation of the Santiago Network to provide developing country governments with technical assistance to quantify health impacts (including both economic and non-economic costs relating to both public health and impacts on healthcare systems), as well as to provide financial support to enable countries to recover from the health and wider impacts of climate change[†]. While health is classified as a non-economic impact, it may be relevant to consider related financial costs when addressing and funding of loss and damage.

Key resources

- Intergovernmental Panel on Climate Change, 2022. Chapter 11, Climate Change 2022: Impacts, Adaptation and Vulnerability. Working Group II Contribution to the IPCC Sixth Assessment Report ([link](#)).
- Report of the Lancet Countdown on Health and Climate Change, 2021 report ([link](#)) and accompanying data visualizations ([link](#), [link](#)). Relevant indicators are 1.1-1.5 related to health impacts and 4.1.1-4.1.4 on associated economic costs.

Cross-cutting

Question 19 proposed by the SB Chairs: How is climate action respecting, promoting, and considering Parties' respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity? (The response below focuses on the right to health).

Public health

In Glasgow, Parties reaffirmed their commitment under the Paris Agreement to “consider their respective obligations on human rights [including] the right to health...”. The human right to health closely links to the UN Human Rights Council (UNHRC) human right to a healthy environment. **In October 2021, the UNHRC adopted Resolution A/HRC/RES/48/13, with corresponding resolution A/76/L.75 adopted by the General Assembly in July 2022, recognising that having a clean, healthy, and sustainable environment is a human right,** and calling upon UN Member States to cooperate to implement this right^{41,42}. Insufficient action on climate change jeopardizes both the right to health overall, and specifically the right to a clean, healthy, and sustainable environment. Moreover, the health community highlights that as noted by the UN Special Rapporteur on the UN Human Rights Council “children are disproportionately affected by changes in their environment, due to their unique metabolism, physiology and developmental needs”⁴³ and, to that end, recognizes the importance of strengthening climate action for the health and development of children and

[†] Recovery should be understood as provision of shelter, essential services, and livelihood opportunities to the population, and implementation of measures to reduce future risks and impacts.

youth, as a point of intergenerational equity.

The objective of the UNFCCC is “to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system”⁴⁴. Climate action that protects the right to health and the right to a clean, healthy, and sustainable environment will stem from NDCs that make robust links to health. These links need to be strengthened.

According to the Global Climate and Health Alliance Healthy NDC Scorecard, which evaluated 94 updated or enhanced NDCs by 1st October 2021, 90% of NDCs reflect health and climate linkages to some extent^{45,46}. Health was included largely in relation to adaptation and health impacts, followed by health co-benefits of mitigation. Few NDCs included financial provisions or economic assessments relating to health considerations, and mentions of health and climate links are often not accompanied by targets for commensurate reductions in greenhouse gas emissions⁴⁷. Health and equity also feature in national long term low greenhouse gas emission development strategies (LTS), with 94% and 77% of the 31 LTS submitted by 30 July, 2021 including health and equity considerations respectively⁴⁸, but work to deliver the targets outlined in LTS is in the earliest stages. **The GST should gather data on the extent to which health and equity are considered in the development of climate policies, and the extent to which their implementation delivers health and equity in practice. We propose that such monitoring be strengthened as a component of future GST assessments.**

Question 20 proposed by the SB Chairs: How are Parties recognizing the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, in order to achieve the purpose and long-term goals of the Paris Agreement?

Public health

Climate change impacts a wide range of environmental determinants of public health and wellbeing through disruptions to biodiversity and in ecosystem integrity^{49,50}. The IPCC identifies several impacts, including the detrimental effects of environmental degradation on livelihoods, food and water security, and loss of cultural identity⁵¹. Ocean health is also closely tied to the use of fossil fuels and to public health, not least in terms of pollution from microplastics and oil spills. The impacts of climate change on ecosystems and biodiversity also inhibit future resilience to climate change and opportunities to adapt⁵².

Many parties to the UNFCCC are also party to the Convention on Biological Diversity (CBD), under which countries are encouraged to submit National Biodiversity Strategy and Action Plans (NBSAPs). Over 100 countries now incorporate biodiversity elements into national accounting systems⁵³. **Stronger efforts to incorporate public health issues and assessments into the NBSAPs, including links between biodiversity, climate change and public health, are greatly needed.** In addition, stronger links need to be made between NBSAPs and NAPs at national level. This will not only enable efficient coordination and alignment in party commitments across conventions, but will also align with the vision for climate-resilient development (CRD) under the IPCC’s AR6 Working Group II. In its report, the IPCC frames CRD as integrated adaptation and mitigation strategies enabled by principles of planetary health, equity, and justice⁵⁴. At the global level, interlinkages in national planning on the health-environment nexus align with proposals for operationalizing One Health.

In the context of the Covid-19 pandemic, investment is required to assess and preserve the ecological conditions that reduce the risk of pathogen spillover from reservoir hosts and formulate an integrated, holistic set of science-based policy and management measures that effectively and cost-efficiently minimize zoonotic disease risk^{55,56}. This is a conservation and biosecurity priority.

Question 21 proposed by the SB Chairs: In what way are non-Party stakeholders (including subnational governments, indigenous peoples and local communities, youth, non-governmental organizations, international organizations, the private sector, financial institutions and multi-stakeholder initiatives) contributing to the progress made to achieve the purpose and long-term goals of the Paris Agreement? (This response focuses on subnational governments, specifically on cities.)

Public health

Cities are responsible for 70% of global emissions⁵⁷, primarily from energy and transport, and provide homes for 55% of the global population. As such, mitigation measures across sectors in urban environments are not only essential at the global scale, but mitigation and adaptation interventions also offer health co-benefits to large - and growing - populations.

According to data by the Carbon Disclosure Project analyzed by the Lancet Countdown on Health and Climate Change, in 2020, 546 (81%) of 670 cities reported having completed or being in the process of doing climate change risk assessments; heat-related illness was the most common climate-related health concern, identified by 169 (55%) of 308 cities. These risk assessments are a key step towards developing local adaptation plans and to avoiding maladaptation. With regard to urban green space, which reduces the urban heat island effect, acts as a carbon sink, and provides an environment for recreational physical activity, data from the Lancet Countdown on Health and Climate Change indicates that in 2020, 27% of 1029 urban centers in 170 countries were classified as being at least moderately green. The C40 initiative further supports cities to achieve cleaner air, low carbon transport systems, and more sustainable and resilient food systems^{58,59,60}.

Tracking health indicators at the municipal-level, such as heat-related illness, respiratory disease, and air pollutant levels (1-hour, 24-hour, and annual), among others, is an important contribution to monitoring implementation of the Paris Agreement as well as to reinforcing urban health governance. Further, alignment between the city initiatives, the UNFCCC GST, and development of a target on urban blue and green spaces as a component to public health and wellbeing in the post-2020 global biodiversity framework under the CBD⁶¹ will increase effectiveness and efficiency of public health programming, and promote positive health outcomes.

Key resources

- Two relevant reports by the UN Special Rapporteur on human rights and the environment, first of all on human rights and a safe climate ([link](#)) and second on good practices in implementation and promotion of the right to a safe, clean, healthy and sustainable environment ([link](#)).
- Global Climate and Health Alliance, 2021. Healthy NDC Scorecard ([link](#), [link](#)).
- Wyns & Beagley, 2021. COP26 and beyond: long-term climate strategies are key to safeguard health and equity ([link](#)).
- World Health Organization, 2021. Health in NDCs ([link](#)).
- Secretariat of the Convention on Biodiversity, 2020. Global Biodiversity Outlook 5 ([link](#)).
- World Health Organization & Secretariat of the Convention on Biodiversity, 2015. Connecting Global Priorities: A State of Knowledge Review ([link](#)).

References

- ¹ IPCC, 1990. Working Group II First Assessment Report: Impacts Assessment of Climate Change ([link](#))
- ² IPCC, 2022. AR6 Working Group II Summary for Policy Makers ([link](#))
- ³ WHO, 2019. COP24 Special Report on Health and Climate Change ([link](#))
- ⁴ IPCC, 2022. AR6 Working Group II Report ([link](#))
- ⁵ Global Climate and Health Alliance and the Health and Climate Network, 2022. Submission to the UNFCCC Global Stocktake first technical call ([link](#))
- ⁶ WHO and partners, 2022. UNFCCC SB56 joint health submission to Roundtable 1 (Mitigation) of the Global Stocktake Technical Dialogue ([link](#))
- ⁷ WHO and partners, 2022. UNFCCC SB56 joint health submission to Roundtable 2 (Adaptation) of the Global Stocktake Technical Dialogue ([link](#))
- ⁸ WHO and partners, 2022. UNFCCC SB56 joint health statement to the Global Stocktake Opening Plenary ([link](#))
- ⁹ 2021. Healthy Climate Prescription: An urgent call for climate action from the health community ahead of COP26 ([link](#))
- ¹⁰ Health and Climate Network, 2021. Paris Climate Change Agreement: urgent priority for global health Call for actions by global leaders to tackle the climate crisis and improve health ([link](#))
- ¹¹ WHO, 2021. COP26 Special Report on Climate Change and Health: The Health Argument for Climate Action ([link](#))
- ¹² Atwoli et al, 2021. Call for emergency action to limit global temperature increases, restore biodiversity, and protect health ([link](#))
- ¹³ Willetts et al, 2022. Health in the Global Environmental Agenda: A policy guide ([link](#))
- ¹⁴ Romanello et al, 2021. The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future. ([link](#))
- ¹⁵ IPCC, 2022. AR6 Working Group II Report ([link](#))
- ¹⁶ IPCC, 2022. AR6 Working Group II Summary for Policy Makers ([link](#))
- ¹⁷ WHO, 2022. COP26 Health Commitments, accessed 25 July 2022 ([link](#))
- ¹⁸ Pérez Català & Wyns, 2022. The Global Stocktake: a health check for the Paris Agreement ([link](#))
- ¹⁹ Adaptation Committee, 2021. Considering approaches to reviewing the overall progress made in achieving the global goal on adaptation (AC19/SUM-INFO/6A) ([link](#)).
- ²⁰ Hamilton et al, 2021. The public health implications of the Paris Agreement ([link](#))
- ²¹ Schneider et al, 2022. Differential impact of government lockdown policies on reducing air pollution levels and related mortality in Europe ([link](#)).
- ²² WHO, 2021. 2021 WHO Health and Climate Change Survey Report ([link](#))
- ²³ Markandya et al, 2018. Health co-benefits from air pollution and mitigation costs of the Paris Agreement: a modelling study ([link](#))
- ²⁴ Lelieveld et al, 2019. Effects of fossil fuel and total anthropogenic emission removal on public health and climate ([link](#))
- ²⁵ Romanello et al, 2021. The 2021 report of the Lancet Countdown on health and climate change: code red for a healthy future ([link](#))
- ²⁶ Health Care Without Harm, 2019. Health Care's Climate Footprint ([link](#))
- ²⁷ Health and Climate Network, 2021. Sustainable and climate resilient health systems ([link](#))
- ²⁸ WHO, 2021. COP26 Special Report on Climate Change and Health: the Health Argument for Climate Action ([link](#))
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- ³¹ WHO, 2021. 2021 WHO Health and Climate Change Survey Report ([link](#))
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- ³³ WHO, 2021. Quality Criteria for Health National Adaptation Plans ([link](#))
- ³⁴ WHO, 2021. 2021 WHO Health and Climate Change Survey Report ([link](#))
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- ³⁶ Watkiss & Ebi, 2022. A lack of climate finance is harming population health ([link](#))
- ³⁷ IPCC, 2022. AR6 Working Group II Report ([link](#))
- ³⁸ Vicedo-Cabrera et al, 2021. The burden of heat-related mortality attributable to recent human-induced climate change ([link](#))
- ³⁹ WHO, 2014. Quantitative risk assessment of the effects of climate change on selected causes of death, 2030s and 2050s ([link](#))
- ⁴⁰ UNFCCC, 2013. Synopsis: Non-economic Losses in the Context of the Work Programme on Loss and Damage ([link](#))
- ⁴¹ United Nations Human Rights Council, 2021. Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development (A/HRC/RES/48/13) ([link](#))
- ⁴² United Nations General Assembly. The human right to a clean, healthy and sustainable environment (A/76/L.75) ([link](#))
- ⁴³ United Nations Human Rights Council, 2017 (A/HRC/35/13) ([link](#))
- ⁴⁴ UNFCCC, 1992. (FCCC/ INFORMAL/84) ([link](#))
- ⁴⁵ Global Climate and Health Alliance, 2021. Healthy NDC Scorecard ([link](#))
- ⁴⁶ Beagley et al, 2021. Assessing the inclusion of health in national climate commitments: Towards accountability for planetary health ([link](#))
- ⁴⁷ Global Climate and Health Alliance, 2021. Healthy NDC Scorecard ([link](#))
- ⁴⁸ Wyns & Beagley, 2021. COP26 and beyond: long-term climate strategies are key to safeguard health and equity ([link](#))
- ⁴⁹ IPCC, 2022. AR6 Working Group II Technical Summary, especially provisional sections D.4, B.1 ([link](#))
- ⁵⁰ WHO & Secretariat of the Convention on Biodiversity, 2015. Connecting Global Priorities: A State of Knowledge Review ([link](#))
- ⁵¹ IPCC, 2022. AR6 Working Group II Technical Summary, especially provisional sections D.4, B.1 ([link](#))
- ⁵² IPCC, 2022. AR6 Working Group II Technical Summary, especially provisional sections D.4, B.1 ([link](#))
- ⁵³ Secretariat of the Convention on Biological Diversity, 2020. Global Biodiversity Outlook - 5 ([link](#))
- ⁵⁴ IPCC, 2022. AR6 Working Group II Technical Summary, especially provisional sections D.4, B.1 ([link](#))
- ⁵⁵ Carlson et al, 2022. Climate change increases cross-species viral transmission risk ([link](#))
- ⁵⁶ Plowright et al, 2021. A Call to Action: Understanding Land Use-induced Zoonotic Spillover to Protect Environmental, Animal, and Human Health ([link](#))
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- ⁵⁸ C40, n.d. Clean Air Cities Accelerator. ([link](#))
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- ⁶¹ CBD, 2022. Working Group on the post-2020 global biodiversity framework ([link](#)). *A fifth session of the working group will take place in advance of CBD COP-15 in December 2022.*