

World Health Organization and Lancet Countdown

Submission to the third meeting of the technical dialogue of the global stocktake (TD 1.3)

March 2023

This submission outlines the views of the World Health Organization (WHO), in consultation with the Lancet Countdown on Health and Climate Change, the Wellcome Trust, the Global Climate and Health Alliance, and other members of the global health community, in support of the third technical dialogue of the global stocktake (TD 1.3).

This submission is intended to complement previous GST technical submissions made by the health community - including by the Lancet Countdown in [February 2022](#), by WHO and the global health community in [August 2022](#), and by the Global Climate and Health Alliance and partners in [March 2023](#) - as well as the GST political submission made by WHO and the global health community in [February 2023](#).

The contents of this submission respond to several questions [proposed by the SB chairs](#) from a health perspective, namely: questions 4 and 5a for mitigation; questions 6, 7 and 10a for adaptation; 12 and 15a for finance; as well as questions 16,17 and 19.

Summary of health messages in GST Technical Assessment to date

The GST is the accountability and ambition mechanism of the Paris Agreement. Its design should contribute to the raising of ambition and guide the transformational action that will lead to the long-term health and wellbeing of people and ecosystems (as per decision 19/CMA.1). Through article 4.1.f. of the UNFCCC, all Parties to the UNFCCC committed to take climate change considerations into account in their relevant social, economic and environmental policies and actions, and employ methods to minimise adverse effects on public health of any adaptation or mitigation projects and measures undertaken by them. The GST and various UNFCCC communications (e.g., National Communications, NDCs, LT-LEDs, NAPs) should report on how this commitment is implemented.

The technical dialogue of the first global stocktake, and its various sources of input, have thus far highlighted various key considerations for public health:

The **summary report on the first meeting of the technical dialogue (TD1)**, prepared by the GST co-facilitators¹, pointed out that TD1 made various references to the IPCC the AR6, including “the urgency of ambitious global action on adaptation and mitigation and support, considering that climate change is a **threat to human well-being and planetary health**”.

TD1 also highlighted the importance of the GST in **monitoring progress towards minimising the threats of climate change to human health and well-being**, as well as for **maximising health co-benefits of climate action**, noting the profound direct and indirect impacts of climate change through heat waves and other extreme

¹ UNFCCC, 2022. [GST co-facilitators summary report](#)

weather events, disease transmission, food and water insecurity, and negative mental health impacts. It also pointed to the health sector itself, which contributes 5% of GHG emissions, and is one of three sectors **most often prioritised for adaptation** in current NDCs, and therefore has a key role in both mitigation and adaptation.

A summary report on National Adaptation Plans (NAPS), presented during TD1, stated that health was among the sectors most often identified as a priority for adaptation action in current NAPs. This was supported by interventions from various Parties.

When discussing gaps, challenges, and solutions in relation to the energy transition, TD1 discussions highlighted the socio-economic challenges and impacts of energy transition and of phasing down or phasing out of fossil fuels (e.g., loss of jobs, impacts on other sectors), as well as the **co-benefits** (e.g., health), and the need for pragmatic solutions, including security, which may vary between countries

The **UNFCCC synthesis reports for the GST technical assessment component**² concluded that LT-LEDS often **include public health improvements when describing long-term mitigation targets or goals**, and the benefits these might bring to their populations, including economic growth, job creation and improved public health due to improved air quality.³ In terms of adaptation, the synthesis reports pointed to the fact many Parties have identified health adaptation as a priority in their various communications to the UNFCCC, both through the strengthening of health services overall, along with **strengthening health adaptation**. Health and the health sector have been identified by many Parties as being extremely vulnerable to the impacts of climate change.⁴ However, unmet financing and capacity-building needs in this area were identified as a major barrier.⁵

The **second meeting of the technical dialogue (TD2)**, which took place at COP27, and for which a summary report by the co-facilitators is expected imminently, also saw strong inclusion of considerations for human health and well-being. This included interactive discussions around **transforming health systems** at the GST World Cafe sessions, and the participation of the Lancet Countdown in the GST focused exchange on pathways towards low GHG emissions and climate-resilient development.

² UNFCCC, 2022. [GST synthesis reports](#).

³ UNFCCC, 2022. [GST synthesis report related to mitigation efforts undertaken by Parties](#).

⁴ UNFCCC, 2022. [GST synthesis report related to the state of adaptation efforts, experiences and priorities](#).

⁵ UNFCCC, 2022. [GST synthesis report related to Article 13, paragraph 7\(b\), of the Paris Agreement](#).

Measuring progress on health and climate change

Various synthesis reports of the GST's First Technical dialogue have highlighted the need for capacity building - at both a global, regional and national level - to track, monitor, evaluate and report on progress.⁶ Therefore, the GST needs to develop an evidence infrastructure that combines different sets of evidence, and allows for national-level disaggregation, as well as regional and global aggregation as necessary. A GST evidence infrastructure should be able to measure effectiveness, quantify means of implementation and support, and help answer policy questions, in order to make progress towards the Paris Goals.⁷

When it comes to measuring progress on health and climate change, a variety of monitoring and evaluation systems already exist.

As the custodian of SDG3 (“ensure healthy lives and promoting well-being for all at all ages”) and various other SDGs related to health, WHO monitors over 1000 indicators on priority health topics through its **Global Health Observatory** (GHO)⁸, providing health-related statistics for its 194 Member States. Climate change data in the GHO is provided through the **WHO global survey on health and climate change**⁹, a regular global stocktaking exercise for the overall progress governments have made in addressing the health risks of climate change. The global survey is sent to national health authorities, who in collaboration with other relevant ministries and stakeholders, provide updated information on key areas including: leadership and governance, evidence, implementation, and finance.

WHO's monitoring efforts are complemented by the **Lancet Countdown**¹⁰, a multidisciplinary collaboration of nearly 100 academic institutions and UN agencies around the world, including WHO. The Lancet Countdown represents a global evidence infrastructure of 40+ indicators that monitor overall progress on health and climate change. It does this by conducting a regular stocktaking exercise for health, through the collection of both primary data and data collected by partners, which is then summarised and contextualised in yearly reports published in the scientific journal *The Lancet*.

Both WHO and the Lancet Countdown work closely with regional and national partners to provide more regionalised monitoring, develop national capacity, support evidence-based decision making, and work towards closing existing data gaps. For example, WHO presents national progress through the WHO UNFCCC Health and Climate Change Country Profiles¹¹ for more than 80 countries, while the Lancet Countdown is developing regional monitoring efforts through regional centres in Africa, Asia, Europe, South America, Australia, and Small Island Developing States, publishing annual updates of regional indicators in scientific journals of *The Lancet* family.

⁶ UNFCCC. Paris Committee on Capacity-building. [Synthesis report for the technical assessment component of the first global stocktake.](#)

⁷ UNFCCC. Least Developed Countries Expert Group. [Synthesis report for the technical assessment component of the first global stocktake.](#)

⁸ WHO, 2023. [Global Health Observatory.](#)

⁹ WHO, 2021. [WHO health and climate change global survey.](#)

¹⁰ Lancet Countdown, 2022. [Tracking the connections between public health and climate change.](#)

¹¹ WHO, UNFCCC, 2023. [Health and climate change country profiles.](#)

Progress report on health and climate change

The inclusion of health commitments and targets in Nationally Determined Contributions (NDCs) and long-term low greenhouse gas emission development strategies (LT-LEDS) is important in order for Parties to identify the health impacts of climate change, outline health adaptation and resilience priorities, assess means of implementation needs, and present evidence of the health co-benefits of climate mitigation policies. This can strengthen the health argument for accelerating climate action.

WHO has identified several priority areas for health in its review of the current NDCs and LT-LEDS.¹² In addition, the Lancet Countdown initiative already conducts a regular stocktaking exercise to monitor overall progress on health and climate change.

The tables below summarise the current health priorities in NDCs and LT-LEDS, and pair them with indicators of progress on health and climate change from the WHO global survey and the 2022 report of the Lancet Countdown.

¹² 2022 WHO Review of Health in Nationally Determined Contributions and Long-Term Strategies. Summary of the latest available NDCs communicated by 193 Parties to the Paris Agreement, and latest available LT-LEDS communicated by 62 Parties to the Paris Agreement. Some highlights from this review have been included in the table below for illustrative purposes, however, these represent preliminary results, and final results will be those found in the WHO publication, which will be made available at <https://apps.who.int/iris/>.

| Health priorities in NDCs and LT-LEDS <i>As captured by the 2022 WHO review¹²</i> | WHO progress report <i>As captured by the 2022 WHO review¹² and WHO global survey¹³</i> | Lancet Countdown progress report <i>As captured by the 2022 global report¹⁴</i> |
|--|--|--|
| Policy priority setting for health | | |
| <p>NDCs/LT-LEDS recognise the Party's legislative and regulatory mandate to protect and promote the health and wellbeing of its population in the face of a changing climate.</p> | <p><i>WHO review:</i> The majority (91%) of NDCs now include health considerations, and this across all action areas, including health co-benefits of mitigation, health adaptation and resilience, and climate finance.</p> <p>Similarly, nearly all (98%) LT-LEDS include public health considerations. Many connect this to existing legislation or human rights.</p> | <p>Increased engagement with health is evident in updated or new NDCs. Most health references are about adaptation needs or efforts (83%), and 40% are also related to climate change mitigation.</p> <p>References to the health sector in NDCs also increased from 74% in the first round to 81% in the second round of NDCs. Healthcare infrastructure was a particular focus, having increased from 39% to 73% (<i>indicator 5.4</i>).</p> |
| <p>NDCs/LT-LEDS consider the attainment of health and wellbeing for its population as the ultimate goal and guiding principle for the development of its climate policies.</p> | <p><i>WHO review:</i> Three out of four LT-LEDS (72%) include specific goals or provisions around safeguarding the health, wellbeing, and prosperity of populations as a key outcome of achieving a net-zero and resilient society by the middle of the century.</p> | <p>Global health systems have been drastically weakened by the effects of the COVID-19 pandemic, and the funds available for climate action decreased in 239 (30%) of 798 cities, with health systems increasingly being affected by extreme weather events and supply chain disruptions too (<i>indicator 2.1.3</i>).</p> |
| <p>NDCs/LT-LEDS assess the synergies with sustainable development goals for health (i.e., SDG 3).</p> | <p><i>WHO review:</i> Nearly a quarter (23%) of NDCs now assess the impact of some or all of its climate targets and policies on Sustainable Development Goal 3, i.e., to ensure healthy lives and promote well-being for all at all ages.</p> | |
| <p>NDCs/LT-LEDS promote a healthy and green recovery from COVID-19.</p> | <p><i>WHO review:</i> A third (32%) of all NDCs and (30%) LT-LEDS commit to a healthy, green recovery from COVID-19.</p> <p><i>WHO global survey:</i> Half of all surveyed countries (52%) reported that the COVID-19 pandemic has had a significant impact on their work to protect health from climate change, diverting health personnel and resources and slowing the implementation of protective measures.</p> | |
| <p>NDCs/LT-LEDS prioritise health, equity and social justice measures in relation to the COVID-19 recovery.</p> | <p><i>WHO review:</i> Several NDCs (8%) and a quarter (26%) of LT-LEDS prioritise health, equity and social justice measures in response to the COVID-19 pandemic.</p> <p><i>WHO global survey:</i> One third of country respondents (33%) have included climate change and health considerations in their plans for recovery from COVID-19.</p> | |

¹³ WHO, 2021. [2021 WHO Health and Climate Change Survey Report](#).

¹⁴ This showcases only a limited selection of highlights from the 2022 Lancet Countdown global report. Indicators do not necessarily represent a complete assessment of each health priority. For more complete information, data sources, and regional data, please consult the Lancet Countdown website: www.lancetcountdown.org.

| Health priorities in NDCs and LT-LEDS | WHO progress report | Lancet Countdown progress report |
|---|---|--|
| Health co-benefits of mitigation | | |
| <p>NDCs/LT-LEDS contain a stand-alone reduction target or policy for air pollutants, including Short-Lived Climate Pollutants (SLCPs).</p> | <p><i>WHO review:</i> A number of NDCs (16%) include stand-alone targets, measures, or policies for the reduction of air pollution and/or SLCPs. Some LT-LEDS also include air pollution targets.</p> | <p>In 2020, exposure to ambient PM_{2.5} contributed to 4.2 million deaths, unchanged from 2015. Of these deaths, 80% (3.3 million) were attributable to anthropogenic emissions; of which 1.2 million (35%) were directly related to the combustion of fossil fuels.¹⁵</p> <p>Deaths due to coal combustion have decreased by 18% between 2015 and 2020, mostly because of strict air pollution control measures in China and coal phase down in Europe (<i>indicator 3.3</i>).</p> |
| <p>NDCs/LT-LEDS include an emission reduction commitment for the healthcare sector.</p> | <p><i>WHO review:</i> One in ten (11%) NDCs include an emission reduction commitment for the healthcare sector. Some LT-LEDS also include health sector specific mitigation targets.</p> <p><i>WHO global survey:</i> 23% of countries (22 out of 95) have assessed the environmental sustainability of at least one of their health care facilities.</p> | <p>In 2019, the healthcare sector contributed to approximately 5.2% of global greenhouse gas emissions, an increase of more than 5% from the previous year (<i>indicator 3.6</i>).</p> |
| <p>NDCs/LT-LEDS identify, quantify and/or monitor the health co-benefits of mitigation.</p> | <p><i>WHO review:</i> A third (30%) of NDCs consider the health co-benefits of climate mitigation, while one in ten (10%) quantify and/or monitor these benefits.</p> <p>Three quarters (75%) of LT-LEDS consider the health co-benefits of climate mitigation, while one in three (32%) quantify the health co-benefits of mitigation. One in three (34%) LT-LEDS recognise, and sometimes quantify, a return on investment for health from the implementation of climate policies.</p> <p>Health co-benefits of mitigation are recognised across various sectors, including: food, agriculture and land-use; transport; and household energy.</p> <p><i>WHO global survey:</i> Only 16% of countries (15 out of 95) have conducted an assessment of the health co-benefits of national climate mitigation policies.</p> | <p>In 2020, 3.3 million deaths were attributable to anthropogenic emissions of particulate matter PM_{2.5}, of which 1.2 million (35%) were directly related to the combustion of fossil fuels, including 555,000 from the burning of coal. Of the deaths attributable to fossil fuel-derived PM_{2.5}, 37% came from the transport sector, and 30% from power plants. The remainder came in equal proportion from the use of fossil fuels in the household sector and in industry (<i>indicator 3.3</i>).¹⁵</p> <p>Red meat and dairy consumption contributes to 55% of all global greenhouse gas emissions from the agricultural sector (<i>indicator 3.5.1</i>). The consumption of these products is in turn associated with 2 million deaths each year (<i>indicator 3.5.2</i>), pointing at the potential for simultaneous health and climate co-benefits of mitigation in the agricultural sector.</p> |

¹⁵ Air pollution burden estimates of the Lancet Countdown use slightly different estimation methods and may differ from WHO methodology. WHO air pollution burden estimates are available [here](#). WHO air quality guidelines are available [here](#).

| Health priorities in NDCs and LT-LEDS | WHO progress report | Lancet Countdown progress report |
|--|---|---|
| Health adaptation | | |
| <p>NDCs/LT-LEDS include an evidence-based assessment of climate-sensitive health risks or outcomes (CSHRs).</p> | <p><i>WHO review:</i> A third of NDCs (32%) conduct an evidence-based assessment for one or several CSHRs, such as through a vulnerability assessment for health, scientific research, or risk analysis. Two thirds (60%) of NDCs identify the health sector as vulnerable to climate change.</p> <p>A similar proportion of LT-LEDS (28%) conduct an evidence-based assessment for one or several CSHRs, although many more (70%) refer to the health impacts of climate change without quantifying these impacts.</p> <p><i>WHO global survey:</i> 48 (51%) of 95 countries surveyed have completed a climate change and health vulnerability and adaptation assessment in 2021.</p> | <p>Countdown indicator 2.1.1 captures WHO global survey data.</p> |
| <p>NDCs/LT-LEDS set evidence-based health adaptation priorities</p> | <p><i>WHO review:</i> Two thirds (63%) of NDCs have health-specific adaptation actions or plans, with increasingly comprehensive coverage across the ten components needed for building climate-resilient health systems, including: integrated risk monitoring and early warning (36%); climate-informed health programmes (35%); climate resilient and sustainable technologies and infrastructure (31%); emergency preparedness and management (19%); health and climate research (22%); and others. The health adaptation component least often included is the health workforce (13%).</p> <p>Close to half of LT-LEDS (47%) include health adaptation priorities and policies.</p> <p><i>WHO global survey:</i> 49 (52%) of 95 countries reported having a national health and climate change plan in place in 2021. Of these countries, less than a quarter (11 countries) have reached a ‘high’ or ‘very high’ level of implementation and 70% (34 countries) citing insufficient finance as a main barrier.</p> <p>In 2021, less than 40% of countries reported to have climate-informed health surveillance systems in place for vector-borne, waterborne, or airborne diseases, while 28 of 84 countries reported having climate-informed health early warning systems in place for heat-related events and 26 (30%) of 86 countries reported having them in place for other extreme weather events.</p> | <p>Countdown indicators 2.1.2, 2.2.1, and 2.2.1 capture WHO global survey data.</p> <p>Only 112 (63%) of 177 countries reported high to very high implementation status for health emergency management in 2021 (<i>indicator 2.2.4</i>).</p> |

| Health priorities in NDCs and LT-LEDS | WHO progress report | Lancet Countdown progress report |
|---|--|--|
| Loss and damage to health | | |
| <p>NDCs/LT-LEDS identify health impacts from climate change.</p> | <p><i>WHO review:</i> Two thirds (60%) of all NDCs identify one or several climate-sensitive health risks or outcomes (CSHR) impacting their population. This includes: heat-related illness (29%); vector-borne diseases (28%); injury and mortality from extreme weather events (25%); malnutrition and food-borne diseases (22%); socially mediated health impacts such as migration and inequities (22%); air pollution (10%), impacts on health care facilities (10%), and others.</p> <p>The majority (70%) of LT-LEDS recognise the long-term harmful effects of climate change on people’s health, wellbeing, and livelihoods.</p> <p>One in ten (11%) NDCs and (11%) LT-LEDS now also specifically relate the concept of ‘Loss and Damage’ to human health.</p> | <p>From 2000 to 2021, populations were exposed to an average increase in summer temperature two times higher than the global mean (<i>indicator 1.1.1</i>), causing a significant rise in the exposure of vulnerable populations to heatwaves (<i>indicator 1.1.2</i>). Combined with an increasingly aging populations, the increasing temperatures led to a 68% rise in heat-related mortality for people older than 65 years (<i>indicator 1.1.5</i>).</p> <p>The climatic suitability for the transmission of dengue in the past decade (2012-21) increased by 11.5% for <i>Aedes aegypti</i> and 12.0% for <i>Aedes albopictus</i> compared to 50 years ago (1951–60). Endemic regions in which dengue is responsible for a substantial burden of disease, including South-East Asia, South America and Africa, saw the biggest absolute increase in the environmental suitability for dengue transmission. However, colder areas like Europe and North America saw the biggest relative change in environmental suitability, pointing towards a rapidly emerging health hazard in previously unexposed regions (<i>indicator 1.3</i>).</p> <p>An increase in the number of heatwave days from 1981–2010 resulted in an additional 98 million people reporting moderate or severe food insecurity in 2020 (<i>indicator 1.4</i>).</p> <p>149.6 million people were settled less than 1 metre above current sea level in 2020, in regions increasingly at risk from the hazards of the rising seas (<i>indicator 2.3.3</i>).</p> |

| | | |
|---|---|--|
| <p>NDCs/LT-LEDS estimate the financial cost of the health impacts of climate change.</p> | <p><i>WHO review:</i> A quarter (23%) of LT-LEDS recognise, and sometimes quantify, the economic costs from the long-term health impacts of climate change.</p> | <p>In 2021, climate-related extreme events induced measurable economic losses of US\$253 billion (indicator 4.1.1)</p> <p>The monetised value of global heat-related mortality was estimated to be USD144 billion in 2021, equivalent to the average income of 12.4 million people (<i>indicator 4.1.2</i>).</p> <p>Exposure to rising temperatures are reducing labour capacity, with an estimated 470 billion potential globally in 2021, a 37% increase from 1990–1999. Least developed countries saw most of the losses in their agricultural sector (<i>indicator 1.1.4</i>). The global potential loss of income from reduction in labour capacity due to extreme heat was USD669 billion in 2021 (<i>indicator 4.1.3</i>).</p> <p>The monetised costs of premature mortality due to air pollution amounted to USD 2.3 trillion in 2020, the equivalent of 2.7% of gross world product (<i>indicator 4.1.4</i>).</p> |
|---|---|--|

| Health priorities in NDCs and LT-LEDS | WHO progress report | Lancet Countdown progress report |
|--|---|--|
| Implementation for health | | |
| <p>NDCs/LT-LEDS allocate climate finance to health.</p> | <p><i>WHO review:</i> Close to a third (29%) of NDCs and one in ten (11%) LT-LEDS now allocate climate finance to health actions and/or plans. However, only one in ten (11%) NDCs includes unconditional finance targets (i.e., domestically sourced) for some or all of their health actions and/or plans.</p> <p><i>WHO global survey:</i> Only a small proportion of ministries of health in LLMICs (28%) receive international funds to support climate change and health work.</p> | <p>In the fiscal year 2020–21, 5.6% of total adaptation-related spending went to transactions that could support health adaptation, while 28.5% of global adaptation spending went to transactions with the potential to deliver adaptation in health-relevant sectors (<i>indicator 2.2.4</i>).</p> <p>Only 15% of USD 1.14 billion under the Green Climate Fund went towards adaptation activities with health benefits in 2021 (<i>indicator 2.2.4</i>).</p> |
| <p>NDCs/LT-LEDS commit to financial reforms beneficial to climate and health goals.</p> | <p><i>WHO review:</i> Many (45%) LT-LEDS commit to financial reforms that would be beneficial to both climate and health goals, such as taxes, levies, fiscal incentives and carbon pricing mechanism with specific provisions for health (21%) or financial reforms to enable a healthy, green recovery from COVID-19 (30%).</p> | <p>Less than one third of USD3.11 trillion allocated to COVID-19 economic recovery is likely to reduce greenhouse gas emissions or air pollution, with the net effect likely to increase emissions (<i>indicator 2.1.3</i>).</p> <p>The global value of funds committing to fossil fuel divestment between 2008 and 2021 was USD 40.23 trillion, with health institutions accounting for USD 54 billion (<i>indicator 4.2.3</i>).</p> <p>69 (80%) of 86 countries reviewed had net-negative carbon prices in 2019 (i.e., provide a net subsidy to fossil fuels) for a net total of US\$400 billion. The resulting net loss of government revenue was in many cases equivalent to large proportions of the national health budget (<i>indicator 4.2.4</i>).</p> |
| <p>NDCs/LT-LEDS commit to other means of implementation for health.</p> | <p><i>WHO review:</i> At least 12% of NDCs specifically mention the need for increased capacity building of the health sector, and in some cases connect this to climate finance. Some (7%) NDCs also highlight the need for technology transfer or development to the health sector.</p> <p><i>WHO global survey:</i> The main barriers faced by LLMICs in accessing international climate funds for health and climate change activities are a lack of information on opportunities, a lack of capacity to prepare proposals and a disconnect from climate processes.</p> | <p>N/A</p> |

The below table provides an overview of the indicators captured in the WHO global survey on health and climate change. They are completed by Ministries of Health (MoH) and other national health authorities, and capture overall progress by governments in addressing the health risks of climate change.

| WHO global survey indicators | |
|--|--|
| Leadership and governance | National multi-institutional structure to work on climate change exists with MoH participation |
| | MoH focal point for health and climate change designated |
| | MoH established multi-stakeholder mechanism on health and climate change that is currently operational |
| | MoH has a memorandum of understanding or agreement in place that defines specific roles and responsibilities in relation to health and climate change policy or programs with health-determining sectors (by sector) |
| | National health and climate change plan or strategy in place |
| | Estimation of the budget and human resources required to implement the national health and climate change plan/strategy completed |
| | Current sources of funding for implementation of the national health and climate change plan/strategy |
| | Level of implementation of national health and climate change plan or strategy |
| | Identification of barriers to implementation of national health and climate change plan or strategy |
| | MoH conducted public health campaigns to raise awareness on health and climate change |
| | Evidence for decision-making |
| Scope and level of coverage of the V&A assessment | |
| Influence of results of the V&A assessment on the development of new health policies or programs | |
| Influence of the results of the V&A assessment on the allocation of human and financial resources within the MoH to address health risks of climate change | |
| Implementation | Existence of climate-informed health surveillance system by climate sensitive diseases |
| | Existence of climate-informed health early warning system by climate sensitive disease |
| | Existence of health sector response plan by climate sensitive disease |
| | Climate resilience assessment for public health care facilities |
| | Environmental sustainability assessment for public health care facilities |
| Service delivery | National guidance on climate informed health programs exists |
| | Collaboration between MoH and national stakeholders exists to strengthen research on climate change and health |
| Health workforce | Number of full-time MoH staff dedicated to health and climate change |
| | Training of MoH staff on health and climate change topics in the last two years (by topic) |
| Finance | MoH receiving international funds for health and climate change |
| | Main challenges MoH faced in accessing international funds for health and climate change |
| Promoting health benefits of climate mitigation | Assessment(s) of the health benefits of national climate mitigation policies conducted |

The below table provides an overview of the 43 indicators captured in the 2022 report of the Lancet Countdown. These indicators represent a global stocktaking exercise for progress on health and climate change, and are summarised and contextualised in yearly reports.

| Lancet Countdown indicators | |
|--|--|
| Health and Heat | Heat and exposure to warming |
| | Exposure of Vulnerable Populations to Heatwaves |
| | Heat and Physical Activity |
| | Change in Labour Capacity |
| | Heat-Related Mortality |
| Health and Extreme Weather Events | Wildfires |
| | Drought |
| | Extreme Weather and Sentiment |
| Climate Suitability for Infectious Disease Transmission | |
| Food Security and Undernutrition | |
| Assessment and Planning of Health Adaptation | National Assessment and Adaptation Plans |
| | City-Level Climate Change Risk Assessments |
| Enabling conditions, Adaptation Delivery, and Implementation | Climate Information Services for Health |
| | Air Conditioning: Benefits and Harms |
| | Urban Green Space |
| | Health Adaptation-Related Funding |
| | Detection, Preparedness and Response to Health Emergencies |
| Vulnerabilities, Health Risk, and Resilience to Climate Change | Vulnerability to Mosquito-Borne Disease |
| | Lethality of Extreme Weather Events |
| | Migration, Displacement and Rising Sea Levels |
| Energy System and Health | |
| Clean Household Energy | |
| Premature Mortality from Ambient Air Pollution by Sector | |
| Sustainable and Healthy Transport | |
| Food, Agriculture, and Health | Emissions from Agricultural Production and Consumption |
| | Diet and Health Co-Benefits |
| Mitigation in the Healthcare Sector | |
| The Economic Impact of Climate Change and its Mitigation | Economic Losses due to Climate-Related Extreme Events |
| | Costs of Heat-Related Mortality |
| | Loss of Earnings from Heat-Related Labour Capacity Loss |
| | Costs of the Health Impacts of Air Pollution |
| The Economics of the Transition to Zero-Carbon Economies | Clean Energy Investment |
| | Employment in Low-Carbon and High-Carbon Industries |
| | Funds Divested from Fossil Fuels |
| | Net Value of Fossil Fuel Subsidies and Carbon Prices |
| | Consumption-based Attribution of CO ₂ - and PM _{2.5} Emissions |
| | Compatibility of fossil fuel company strategies with climate targets |
| Media Coverage of Health and Climate Change | |
| Individual Engagement in Health and Climate Change | |
| Scientific Engagement in Health and Climate Change | |
| Government Engagement in Health and Climate Change | |
| Corporate Sector Engagement in Health and Climate Change | |

Implications for NDCs and LT-LEDS: These findings (and others captured in the WHO survey and Lancet Countdown reports) represent opportunities for the enhancement of the next round of NDCs and LT-LEDS, and can help guide the transformational action needed to safeguard the long-term health and wellbeing of people and ecosystems.¹⁶

For example, one in three (30%) NDCs and three in four (75%) LT-LEDS recognise climate mitigation policies will bring significant health co-benefits to their populations, including for mitigation policies in sectors such as: food, agriculture and land-use; transport; household energy and others. However, only one in ten (10%) NDCs and one in three (32%) LT-LEDS quantify and/or monitor the health co-benefits of mitigation. In other words, many Parties recognise the benefits from ambitious mitigation policies to the health and wellbeing of their populations, but relatively few Parties undertake comprehensive assessments of the health, social or economic effects associated with the implementation of these policies. The next round of NDCs and LT-LEDS could help close this gap by employing health co-benefits assessments to guide policy-making processes and raise ambition over time. Two case studies of Parties who have conducted a health co-benefits assessment to inform their respective NDC can be found in the next section.

Implications for the GST: These findings indicate that health and equity are outcomes and indicators of successful climate mitigation and adaptation action for the majority of Parties, and across many sectors. Strengthening health systems and their capacity to cope with added pressures is essential to prevent the most adverse effects of climate change on populations globally. In addition, many climate change adaptation and mitigation interventions could deliver immediate co-benefits to human health, reducing their cost and offering an additional motivation for implementation.

Therefore, an important function of the GST should be to monitor and quantify the health effects of climate policies. This includes the health co-benefits from reduced air pollution, improved diets, physical activity, and others. Climate interventions which offer health co-benefits will also yield higher returns on investment, and hence provide the largest opportunities for strengthening action. These economic gains should also be monitored in the GST to inform a comprehensive economic assessment of climate goals and policies.

¹⁶ WHO guidance on the inclusion of health measures in NDCs and LT-LEDS will be made available in the first half of 2023. The guidance document will provide a series of recommendations, case studies, and useful resources. A large body of WHO guidance on health adaptation planning and climate finance for health is already available, alongside dedicated country support programmes.

Case studies: health co-benefit assessments of mitigation policies in Pakistan and Colombia

Case study 1: In preparation of its 2021 NDC, the government of **Pakistan** examined the health and economic implications of raising the ambition of its mitigation policies. It modelled four different ambition scenarios, and made use of a set of tools to assess the multiple benefits of reducing emissions, including health benefits: the Global Subsidies Initiative - Integrated Fiscal Model (GSI-IF); the Green Economy Model (GEM); and the Carbon Reduction Benefits on Health calculation tool (CaRBonH).

The project was coordinated by WHO, and co-chaired by the Ministry of National Health Services, Regulations and Coordination and the Ministry of Climate Change, and took place in collaboration with various experts.

The results of the study indicated that a high ambition scenario, compared with the NDC reference case scenario, would result in a reduction of greenhouse gas emissions of approximately 27.5% in 2030. Additionally, these emissions reductions would significantly improve air quality, which could prevent more than 65 000 deaths annually from ambient air pollution in 2030.¹⁷

In its NDC, the government also committed to adopt a Health in All Policies (HiAP) approach to its energy policy, to earmark revenues from mitigation actions for the health sector, and to improve its monitoring of data on health co-benefits, in order to ensure more informed climate policies can be developed for various sectors.¹⁸

An additional opportunity for the further strengthening of Pakistan's climate ambition can be found in fossil fuel subsidy reform. The true cost of Pakistan's use of fossil fuels is estimated to be around US\$ 13.1 billion a year in costs of climate, health and other externalities, not including foregone government revenue. When the costs of these externalities are accounted for, the benefits (both to the economy and to health) of energy policy reforms become even more compelling.¹⁹

Case study 2: In order to enhance its current NDC, the government of **Colombia** has conducted a cost-benefit analysis to determine those mitigation actions with the largest possible benefit. By modelling various scenarios, the government was able to examine the health and economic implications of raising the ambition of its NDC.

The project was coordinated by WHO and the Pan-American Health Organization (PAHO), and co-chaired by the Ministry of Health and Social Protection and the Ministry of Environment and Sustainable Development of Colombia, in collaboration with the Climate and Climate Air Coalition, the Stockholm Environment Institute, the Clean Air Institute and leading international and national experts.

Three modelling tools were used to estimate the health benefits of changes in air pollution associated with the implementation of Colombia's NDC:

- the Low Emissions Analysis Platform (LEAP) tool to quantify the emissions reduction potential of different mitigation measures;
- an Integrated Benefits Calculator (IBC) to quantify the impact of changes in air pollutant emissions on air pollution exposure and health impacts;
- the Carbon Reduction Benefits on Health (CaRBonH) tool, an economic assessment tool developed by WHO used to model health effects from air pollutants.

¹⁷ WHO, 2021. [Health benefits of raising ambition in Pakistan's nationally determined contribution.](#)

¹⁸ Pakistan, 2021. [Updated Nationally Determined Contribution.](#)

¹⁹ WHO, 2021. [Health benefits of raising ambition in Pakistan's nationally determined contribution.](#)

The study found that an increased mitigation pathway - consisting of a CO₂ reduction of approximately 58% by 2030 - could prevent more than 3 800 premature deaths annually by 2030 due to the simultaneous reduction in air pollutants. In economic terms, health gains from the higher mitigation pathway would be equivalent to 0.64% of Colombia's projected GDP in 2030. The higher mitigation scenario would thereby provide 20% greater health and economic benefits than the lower ambition mitigation Scenario.

The use of these tools allowed the government of Colombia to make a more informed decision to optimise its climate policies to have the largest possible benefits and deliver win-win outcomes by simultaneously limiting emissions of climate-altering pollutants, and by delivering gains in healthy life years for citizens while maximising economic savings.

Focusing on multiple co-benefits of ambitious climate policies, including environmental, health and economic benefits, can highlight the advantages of such policies to policy-makers and the public and can inform the next round of NDCs and LT-LEDS.

The two case studies are examples of the technical support WHO provides to countries, in order to strengthen the inclusion of health in their NDCs by quantifying the potential health co-benefits of national climate mitigation commitments. In addition to the tools described above, a range of financial and technical support is available, including a new WHO framework that integrates health outcomes in climate policy analysis.²⁰

²⁰ WHO framework for the quantification and economic valuation of health outcomes originating from health and non-health climate change mitigation and adaptation action. Geneva: World Health Organization; 2022

Case study: Country commitments to build climate resilient and sustainable health systems

The Global Stocktake aims to assess the world's collective progress towards achieving the purpose of the Paris Agreement and its long-term goals. The GST's mandate is also to enhance **international cooperation**, including between Parties and non-state actors.

The IPCC²¹ has highlighted that a 1.5 °C pathway requires rapid, far-reaching transformations across all systems and sectors. **Systems transformation** and the implementation of climate action across all sectors requires **enablers**, defined by the IPCC as “conditions that enhance the feasibility of adaptation and mitigation options”. This includes finance, technological innovation, strengthening policy instruments, institutional capacity, multi-level governance and changes in human behaviour and lifestyles.²²

To enable a global systems transformation of the healthcare sector, a health programme was promoted by the UK as president of COP26. As a result, over 60 countries have committed to date at the Minister of Health level to build the climate resilience of health systems as well as to lead by example and reduce the GHG emissions of health care. To support committed countries and any other countries interested in promoting climate resilience and low carbon sustainability in health, the **Alliance for Transformative Action on Climate and Health (ATACH)** was launched in June 2021 by WHO with support from the UK.

ATACH brings together the countries that have committed to the COP26 Health Initiatives, together with key technical partners, research institutions, key finance institutions, civil society organisations, and UN agencies. The initiative has four dedicated working groups to enable the delivery of these commitments, namely: (a) financing climate resilient and sustainable low-carbon health systems; (b) climate resilient health systems; (c) low-carbon sustainable Health systems; (d) supply chains. More information can be found on the [WHO website](#).

The ATACH alliance is a successful example of voluntary international co-operation, and can provide a dedicated health stream to implement the GST recommendations following COP28 in the context of the healthcare sector.



²¹ IPCC (2018). Summary for Policymakers. In: Global Warming of 1.5°C. [An IPCC Special Report on the impacts of global warming of 1.5°C](#).

²² IPCC (2022). Summary for Policymakers. In: [Climate Change 2022: Mitigation of Climate Change](#).

Table: overview of country commitments as part of the Alliance for Transformative Action on Climate and Health (ATACH)

| Country | climate resilient health systems | low-carbon sustainable health systems | net-zero healthcare | Net Zero Target |
|----------------------------------|----------------------------------|---------------------------------------|---------------------|-----------------|
| Argentina | yes | yes | no | |
| Bahamas | yes | no | no | |
| Bahrain | yes | no | no | |
| Bangladesh | yes | yes | no | |
| Belgium | yes | yes | yes | 2050 |
| Belize | yes | yes | no | |
| Bhutan | yes | yes | no | |
| Burkina Faso | yes | yes | yes | 2040 |
| Canada | yes | yes | no | |
| Cape Verde | yes | yes | no | |
| Central African Republic | yes | yes | no | |
| Chile | no | yes | no | |
| Colombia | yes | yes | no | |
| Congo | yes | yes | yes | 2035 |
| Costa Rica | yes | yes | no | |
| Democratic Republic of the Congo | yes | yes | yes | |

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|---------------------------------|-----|-----|-----|------|
| Dominican Republic | yes | yes | no | |
| Egypt | yes | no | no | |
| Ethiopia | yes | yes | no | |
| Fiji | yes | yes | yes | 2045 |
| Gabon | yes | no | no | |
| Georgia | yes | yes | yes | 2050 |
| Germany | yes | yes | no | |
| Ghana | yes | yes | no | |
| Guinea (Republic of) | yes | yes | yes | |
| Indonesia | yes | yes | yes | 2030 |
| Ireland | yes | yes | no | |
| Islamic Republic of Iran | yes | yes | no | |
| Ivory Coast | yes | yes | yes | 2040 |
| Jamaica | yes | yes | no | |
| Jordan | yes | yes | yes | 2050 |
| Kenya | yes | yes | yes | 2030 |
| Lao PDR | yes | yes | no | |
| Liberia | yes | yes | yes | 2030 |
| Madagascar | yes | yes | no | |

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|--|-----|-----|-----|------|
| Malawi | yes | yes | yes | 2030 |
| Maldives | yes | yes | no | |
| Mauritania | yes | yes | no | |
| Morocco | yes | yes | yes | 2050 |
| Mozambique | yes | yes | no | |
| Nepal | yes | yes | no | |
| Netherlands | yes | yes | no | |
| Nigeria | yes | yes | yes | 2035 |
| Norway | yes | yes | no | |
| Occupied Territories of Palestine | yes | yes | no | |
| Oman | yes | yes | no | |
| Pakistan | yes | yes | no | |
| Panama | yes | yes | no | |
| Peru | yes | yes | yes | 2050 |
| Rwanda | yes | no | no | |
| Sao Tome and Principe | yes | yes | yes | 2050 |
| Sierra Leone | yes | yes | yes | 2035 |
| Spain | yes | yes | yes | 2050 |

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|---------------------------------|-----|-----|-----|---------------------------------|
| Sri Lanka | yes | yes | no | |
| Tanzania | yes | yes | no | |
| Togo | yes | yes | no | |
| Tunisia | yes | no | no | |
| Uganda | yes | yes | no | |
| United Araba Emirates | yes | yes | no | |
| United Kingdom | yes | yes | yes | 2040 (varies by administration) |
| United States of America | yes | yes | no | |
| Yemen | yes | yes | yes | 2050 |
| Zambia | yes | yes | yes | 2030 |