World Health Organization

Quality criteria for integrating health into Nationally Determined Contributions (NDCs)

World Health Organization

Quality criteria for integrating health into Nationally Determined Contributions (NDCs)

Quality criteria for integrating health into Nationally Determined Contributions (NDCs)

ISBN 978–92–4-010374–0 (electronic version)
ISBN 978–92–4-010375–7 (print version)

Suggested citation. Quality criteria for integrating health into Nationally Determined Contributions (NDCs). Geneva: World Health Organization; 2024. Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at https://iris.who.int/.

Sales, rights and licensing. To purchase WHO publications, see https://www.who.int/publications/book-orders. To submit requests for commercial use and queries on rights and licensing, see https://www.who.int/copyright.

Editing, design and layout by Inis Communication

Contents

Foreword

The climate crisis is a health crisis. Gone are the days where climate change was a threat on the horizon. It is here now, it is making us sick, it is killing us; but we have the resources and the will to tackle this crisis.

To assist us in this battle for human health the World Health Organization (WHO) has released *Quality criteria for integrating health into Nationally Determined Contributions (NDCs)*. This document will support policymakers in their quest to protect their populations from the effects of climate change. Everyone's health is impacted by climate change and everyone can benefit from climate action. This is a global issue that requires a global response to protect, and improve, human health.

Those that contributed the least to climate change are the ones feeling the worst effects. Food and water supplies, transportation, and health systems are halted by extreme weather events. Small Island Developing States are being battered by intense storms and people are losing their homes to rising seas.

However, those that have benefited from profits derived from emissions causing activity are not insulated from its effects. Deaths and illness due to extreme heat are overloading already strained health systems. Air pollution kills over 7 million people per year and knows no borders, leading to asthma, ischemic heart disease, and stroke which are major killers of people across all nations. Wealth does not supersede the need to breathe.

The time for talking is over, we must take serious climate action now. We at WHO have been advocating for climate-health action for over 25 years: the evidence is clear, the advice is clear, and now global leaders can use this new practical guidance to raise ambition and protect health.

Our health is why we must commit to climate mitigation and resilience. All climate action affects human health in one form or another and serious climate change mitigation actions are the most cost-effective policies when you consider the true cost of climate change. The health impacts of air pollution, rising temperatures, and extreme weather, for example, must always be considered. Maintaining infrastructure run on fossil fuels only appears less costly if you ignore a population with rising rates of lung cancer, more sick days from chronic respiratory conditions and deteriorating mental health.

Human health is determined by human actions. Limiting global warming to 1.5 degrees Celsius would reduce deaths and illnesses from drought, extreme heat and extreme weather. Reducing emissions with the fair and fast transition away from fossil fuel use would dramatically improve air quality around the world. Slowing, and reversing, the rate of climate change would give us great gains in health, reducing healthcare costs and improving economies.

This is a fight for our lives and we must come together as one human race to not only survive, we must thrive. Global leaders must take serious climate-health action to save money, resources and lives.

Dr Maria Neira
Director of the Department of Environment, Climate Change and Health
World Health Organization (WHO)

Acknowledgements

This publication was developed by the World Health Organization (WHO).

Lead contributors: Arthur Wyns and Amy Savage (Department of Environment, Climate Change and Health, WHO).

WHO also acknowledges the contributions of: Elena Villalobos Prats and Emaline Laney (Department of Environment, Climate Change and Health, WHO).

Gratitude is also extended to reviewers: Heather Adair-Rohani, Diarmid Campbell-Lendrum, Sophie Gumy, Antonios Kolimenakis and Salvatore Vinci (Department of Environment, Climate Change and Health, WHO) and Jess Beagley (Global Climate and Health Alliance).

WHO appreciates the contributions of Maoro Beavogui and Fodé Ousmane Bangoura (WHO Country Office, Guinea); Mahawa Diakite, Gnoumè Camara and Mohamed Lamine Sylla (Ministry of Health, Guinea); and Mamadouba Ousmane Sylla and Thierno Mamadou Diallo (Ministry of the Environment and Sustainable Development, Guinea) for Box 5. Case study: Guinea.

WHO extends its appreciation the Wellcome Trust and the Spanish Agency for International Development Cooperation for their financial support. The views expressed in this report do not necessarily reflect the views of these financial donors.

Abbreviations

ATACH	Alliance for Transformative Action on Climate and Health
CBDR-RC	Common but Differentiated Responsibilities and Respective Capabilities
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
COP	Conference of the Parties
HiAP	Health in All Policies
HNAP	Health National Adaptation Plan
IPCC	Intergovernmental Panel on Climate Change
LT-LEDS	Long-term Low Emissions Development Strategy
NAP	National Adaptation Plan
NDCs	Nationally Determined Contributions
SDGs	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization

Glossary

Adaptation communication "Established by Article 7, Paragraphs 10 and 11, of the Paris Agreement. Each Party should submit and update periodically an adaptation communication, which may include information on its priorities, implementation and support needs, plans and actions" *(1)*.

Climate-resilient and low-carbon health systems "[Systems] capable of anticipating, responding to, coping with, recovering from, and adapting to climate-related shocks and stress, while minimizing [greenhouse gas] emissions and other negative environmental impacts to deliver quality care and protect the health and well-being of present and future generations" *(2)*.

Health co-benefits "The positive effects of policy or measures towards climate action that also have positive effects on health, health systems, and wellbeing" *(3)*.

Health National Adaptation Plan (HNAP) A plan led by the ministry of health, as part of the National Adaptation Plan (NAP) process. The HNAP is the plan or document. The HNAP process includes activities associated with developing the HNAP (document), including the conduct of climate change and health vulnerability and adaptation assessment, implementing the plan, monitoring and evaluating the outputs, outcomes and impacts, and using these learnings to inform regular updates of the plan *(4)*.

Healthy Nationally Determined Contributions (NDCs) National climate commitments that protect climate systems and advance human health and well-being for present and future generations.

Long-term low emissions development strategies (LT-LEDS; also known as long-term strategies) "... plans to achieve the long-term goals of the Paris Agreement ... and set out a mid-century vision to cut greenhouse gas emissions and strengthen climate resilience, while simultaneously achieving national development objectives, including for health" *(5)*.

National communication "[A] report that each Party to the Convention prepares periodically in accordance with the guidelines developed and adopted by the Conference of the Parties (COP)" *(6)*.

Nationally Determined Contributions (NDCs) "National climate plans highlighting climate actions, including climate related targets, policies and measures governments aims to implement in response to climate change and as a contribution to global climate action" *(7)*.

Process to formulate and implement national adaptation plans (NAPs) Process to identify medium- and long-term adaptation needs and to develop and implement strategies and programmes to address those needs *(8)*.

References

1. Adaptation communications. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/topics/adaptation-and-resilience/workstreams/adaptation-communications, accessed 23 August 2024).
2. Operational framework for building climate resilient and low carbon health systems. Geneva: World Health Organization; 2023 (https://www.who.int/publications/i/item/9789240081888, accessed 4 July 2024).
3. COP26 special report on climate change and health: the health argument for climate action. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240036727, accessed 4 July 2024).
4. Quality criteria for health national adaptation plans. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240018983, accessed4 July 2024).
5. 2023 WHO review of health in Nationally Determined Contributions and long-term strategies: health at the heart of the Paris Agreement. Geneva: World Health Organization; 2023 (https://iris.who.int/bitstream/handle/10665/372276/9789240074729-eng.pdf, accessed 10 July 2024).
6. UNFCCC resource guide for preparing the national communications of non-Annex I parties: module 1 – the process of national communications from non-Annex I parties. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2009 (https://unfccc.int/resource/docs/publications/09_resource_guide1.pdf, accessed 2 September 2024).
7. NDC Spotlight. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/process/the-paris-agreement/nationally-determined-contributions/ndc-spotlight#:~:text=NDCs%20are%20national%20climate%20plans,the%20concept%20of%20national%20determination, accessed 2 September 2024).
8. Decision 1/CP.16. Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2011 (https://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf, accessed 2 September 2024).

Executive summary

The climate crisis is a health crisis. Climate change results in widespread and increasing impacts on health, health systems and health-determining sectors. Given the health impacts of climate change, the many health co-benefits of climate mitigation and adaptation across sectors, and the need for climate-resilient, low-carbon health systems, health is now recognized as a priority in Nationally Determined Contributions (NDCs).

NDCs are one of the key national climate plans that 195 countries and territories have agreed to prepare, implement and update as part of the 2015 Paris Agreement and to report their progress to the United Nations Framework Convention on Climate Change (UNFCCC). The long-term goal of these and other climate plans is to limit global warming to 1.5–2 °C above pre-industrial levels and to shape a future with net-zero emissions.

This document seeks to guide policy-makers, ministry of health staff, and staff of other government departments leading and contributing to NDCs to integrate health in their countries' NDCs. It aims to support the health sector to understand the international and national climate plan processes, plans and terminology and the key entry points for health.

The document provides an overview of the structure, quality criteria for health integration, examples, and useful resources for the main components of NDCs: leadership and enabling environment; national circumstances and policy priorities; mitigation; adaptation; loss and damage; finance; and implementation.

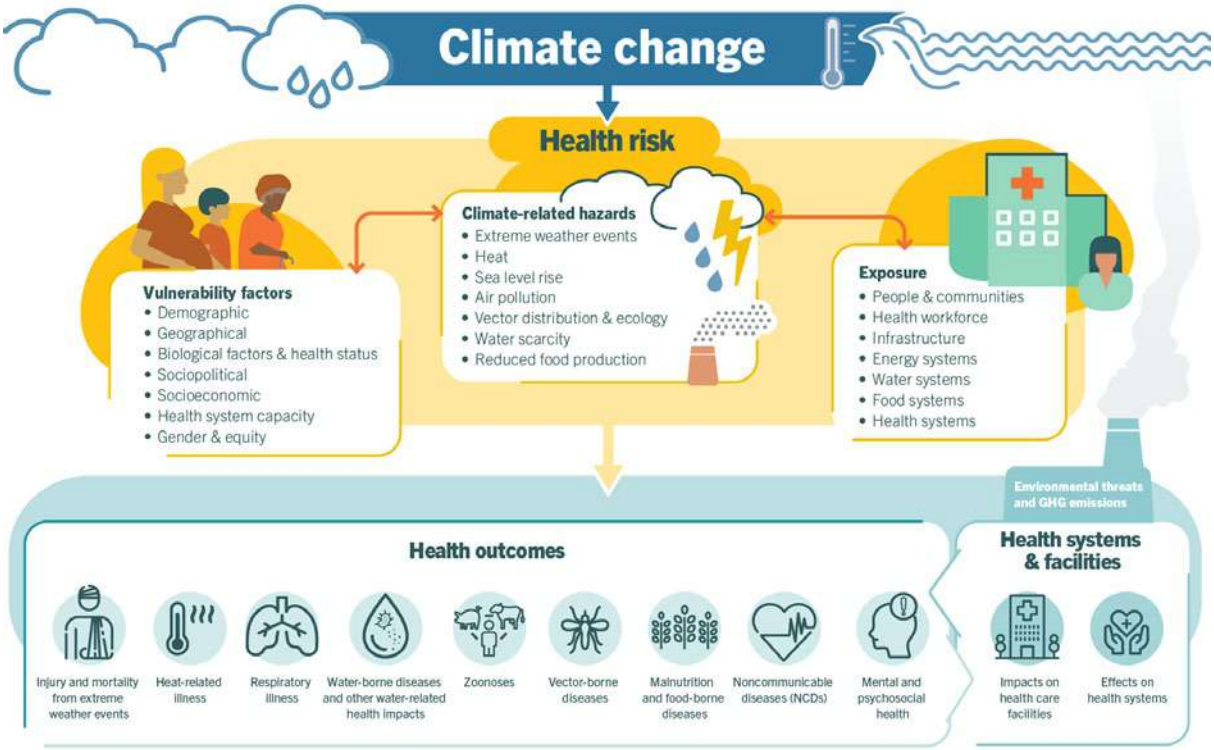
The aim of the document is to provide overarching guidance to national governments to raise the quality and ambition of NDCs, which can be adapted and modified according to the local context and priorities. The quality criteria are not intended to be prescriptive. The overall objective of promoting healthy NDCs is to address the health impacts of climate change, support climate-resilient and low-carbon sustainable health systems, and identify and maximize the health-related co-benefits of climate policies and plans across all relevant sectors.

Introduction

Background

The climate crisis is a health crisis. Climate-related hazards, such as air pollution, sea-level rises, extreme weather events and rising temperatures, pose multifaceted direct and indirect threats to human health, health systems and health-care facilities (Fig. 1). Climate change undermines progress made towards the Sustainable Development Goals (SDGs) and exacerbates social inequities, worsening health disparities *(1)*. Mounting an effective response to the health risks posed by climate change is urgent for all countries.

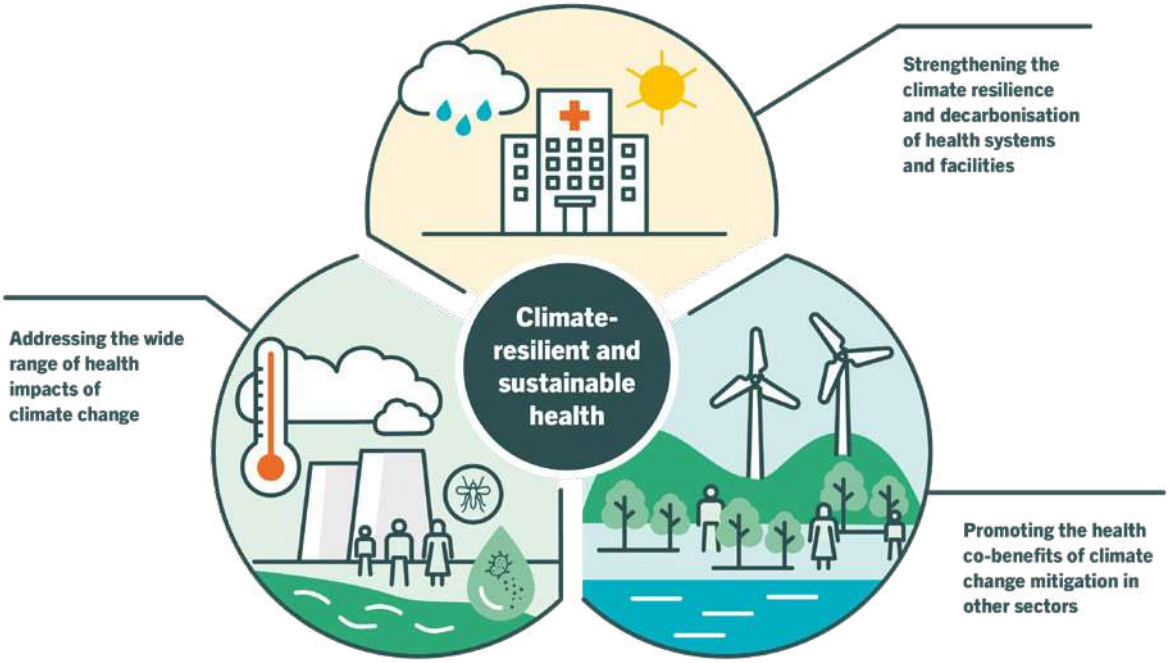
Fig. 1. Causal pathway of health impacts of climate change



Three key areas of action for climate change and health are outlined in Fig. 2:

- Address the wide range of health impacts of climate change.
- Strengthen the climate resilience and decarbonization of health systems and facilities.
- Promote the health co-benefits of climate change mitigation in other sectors.

Fig. 2. Focus areas for building climate-resilient and sustainable health



Increased action in these three areas is necessary to promote and protect our health, and the health of future generations, in the face of climate change. This necessarily requires recognition of the health impacts of climate change by policy- and decision-makers and strong engagement of the health community and ministries of health with international and national climate change processes.

Health in the United Nations Framework Convention on Climate Change

The United Nations General Assembly negotiations on a framework convention on climate change began in 1990. The United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992 at the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil *(2, 3)*.

The UNFCCC is the United Nations entity tasked with supporting the global response to the threat of climate change. It has been ratified by 198 parties and is the parent treaty of the 1997 Kyoto Protocol and the 2015 Paris Agreement *(4)*. The UNFCCC and the treaties under it fundamentally aim to "stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system, in a time frame which allows ecosystems to adapt naturally and enables sustainable development" *(4)*. Health is crucial to the achievement of this goal.

In 1992, health was central to the UNFCCC and was included in two key articles *(5)*. Article 1, when describing the adverse effects of climate change, refers to health as one of three key areas impacted, along with natural and managed ecosystems and socioeconomic systems.[1] Article 4.1.f, related to commitments by parties signatories of the UNFCCC, states that all countries should consider the health implications of all the adaptation and mitigation policies and programmes undertaken by them.[2]

The Paris Agreement advances the UNFCCC as another "legally binding international treaty on climate change" adopted by 195 countries and territories and entered into force in November 2016 *(6)*. The preamble of the Paris Agreement states the need for countries to consider the right to health when addressing climate change.[3] The Paris Agreement establishes a long-term goal of limiting global warming to 2 °C, and ideally 1.5 °C, above pre-industrial levels and sets the course for a future with net-zero emissions *(6, 7)*. Article 7 of the Paris Agreement also specifies the Global Goal on Adaptation *(7)*.

Parties to the Paris Agreement have committed to prepare, communicate and maintain successive Nationally Determined Contributions (NDCs), which outline intended ambitions and progress in climate actions *(6)*. NDCs are critical to achieving the goals of the Paris Agreement. NDCs describe the plans and commitments of countries to reduce their greenhouse gas emissions and adapt to the effects of climate change *(6, 9)*.

---

1 "'Adverse effects of climate change' means changes in the physical environment or biota resulting from climate change which have significant deleterious effects on the composition, resilience or productivity of natural and managed ecosystems or on the operation of socio-economic systems or on human health and welfare" (UNFCCC Article 1).

2 "All Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall: Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change" (UNFCCC Article 4.1.f).

3 "Parties should, when taking action to address climate change, respect, promote and consider their 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" (Paris Agreement).

Article 4.1.f of the UNFCCC is the most important legal entry point for countries to ensure NDCs integrate health not only as a sector-specific contribution but as a whole-of-government contribution to protect and promote the health of their populations.

Healthy NDCs

Healthy NDCs are national climate commitments that protect climate systems and advance human health and well-being for present and future generations.

NDCs are country-driven policy documents unique to each country's context and anchored in a country's priorities and development context. The principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) should be taken into account in the development of NDCs and the integration of health considerations *(2, 7)*.

Although health is recognized as a priority area and sector in 91% of NDCs submitted to the UNFCCC by 23 September 2022, there is little guidance available for countries to facilitate integration of health in the components or sections usually present in NDCs *(10)*.

Purpose and target audience of this document

This document aims to assist national governments to integrate health in their NDCs in line with the Paris Agreement. It offers quality criteria for countries to enhance the integration of health considerations in the overall NDC process and across the various components of the NDC – national context, mitigation, adaptation, loss and damage, finance and implementation. The goal is to raise the quality and ambition of national climate plans by placing health as the ultimate goal to be achieved through action by ministries of health and key health-determining sectors. This will contribute to addressing the health impacts of climate change, support climate-resilient and low-carbon sustainable health systems, and identify and maximize the health-related co-benefits of climate policies and plans.

The primary target audience is ministry of health staff, staff of national ministries leading the NDC process in countries, and policy-makers in health-determining sectors aiming to promote health goals within their own mandates for adaptation and mitigation. Secondary audiences include agencies leading and supporting the NDC process in other sectors, nongovernmental agencies, bilateral donors, World Health Organization (WHO) officers, and other United Nations organizations and technical agencies.

The recommendations in this document are not prescriptive. They should be adapted and tailored to dynamic country contexts, uncertain and changing climatic conditions, and new knowledge and technologies. The document is informed by the recommendations for health integration in the NDCs outlined in the 2019 Health in Nationally Determined Contributions: a WHO Review *(11)* and the findings of the 2023 WHO Review of Health in Nationally Determined Contributions and Long-term Strategies *(10)*.

The quality criteria for health integration in NDCs cover overall leadership and an enabling environment and six components based on the general structure of NDCs: national circumstances and policy priorities; mitigation; adaptation; loss and damage; finance; and implementation. This document provides an overview of the structure, quality criteria for health integration, case studies and useful resources for these main components. Examples from existing NDCs are included to highlight best practices.

Countries are at different stages in their policy cycles. Some countries will find this guidance helpful to make a first step in integrating health priorities and plans in their NDCs; others may use it to strengthen or finetune existing climate and health plans, targets and processes. NDCs are updated iteratively to reflect national progression of climate ambitions over time.

Guiding principles

A set of guiding principles underpins health integration in NDCs. These align with the principles described in the UNFCCC Guidelines for National Adaptation Plans *(12)*, recommendations outlined in the Katowice Climate Package (the "Paris Rulebook") *(13)*, and the WHO Quality Criteria for Health National Adaptation Plans *(14)*. The following principles underpin the criteria and are intended to be considered in the application of this guidance:

- A country-driven process ensures ownership by countries.
- Evidence-based planning ensures health adaptation and mitigation planning are based on the best available evidence. Adaptation and mitigation plans should aim to strengthen the development and availability of evidence, build data, reduce knowledge gaps and inform relevant policies.
- Existing efforts towards health climate change adaptation and mitigation should be strengthened, including assessment, development and implementation of policies and programmes at local to national levels.
- Climate-informed health programming integrates climate change considerations into national health planning strategies, processes and monitoring systems. At the same time, climate- and health-informed programming ensures mitigation and adaptation policies and programmes by key health-determining sectors contribute to health protection and promotion.
- A nonprescriptive approach provides a flexible and context-specific approach to the integration of health within NDCs and avoids duplication of efforts. National circumstances and available information and experience on health and climate change will determine the scope, institutional arrangements and resources required to implement the health targets and policies of the NDC.
- Cross-sectoral cooperation and coordination maximize synergies across sectors, particularly those that determine health, such as food, water, energy and housing. This calls for development of relevant health indicators within national climate change monitoring systems in these sectors, ensuring health considerations are integrated into adaptation planning to avoid maladaptation and mitigation planning to maximize health gains through co-benefits.
- The consideration and promotion of equity, gender and social determinants of health should be central to all health adaptation and mitigation plans. These should build on and promote traditional knowledge systems.
- Alignment with the process to formulate and implement the National Adaptation Plan (NAP) ensures the NDC adaptation component builds on and feeds into the overall NAP, the Health National Adaptation Plan (HNAP) and national health adaptation processes.
- An iterative learning approach promotes an iterative process for the integration of health within NDCs, with timebound implementation plans that are periodically reviewed and updated.
- Knowledge-sharing and capacity-building promote intercountry collaboration and harmonizing of health-promoting adaptation and mitigation approaches at subregional levels. They also strengthen national capacity on climate change and health, which is central to development and implementation of NDCs.
- Cross-agenda synergies should be maximized with other multilateral agreements or calls for action such as the Sendai Framework for Disaster Risk Reduction 2015–2030 and the SDGs.

Overview of the NDC process

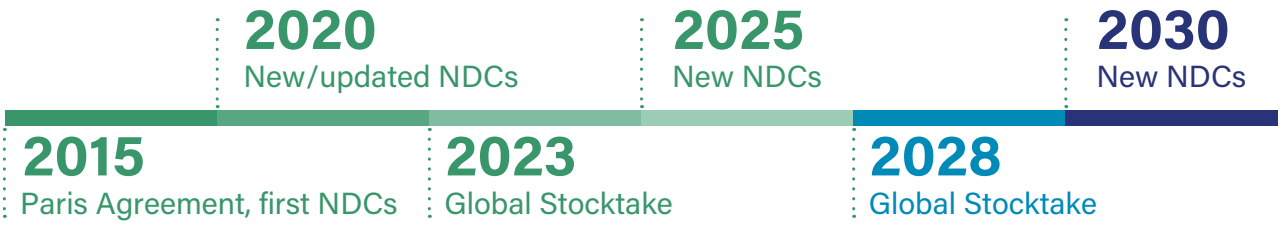
NDCs are country-level plans to achieve the collective goal of the Paris Agreement to limit global warming to 1.5–2 °C above pre-industrial levels *(15)*. NDCs describe national targets and planned actions to reduce greenhouse gas emissions and commonly also include an adaptation component outlining actions to build resilience and adapt to the effects of climate change *(10, 16)*. These contributions to the Paris Agreement objectives are nationally determined, based on national circumstances, capabilities and priorities *(7)*. This approach aims for climate action efforts to be guided by country priorities and needs, driven by a bottom-up rather than a top-down globally determined mandate.

This document is aligned with the broad guidance described by the Katowice Climate Package, otherwise known as the Paris Rulebook, based on decisions taken at the Conference of the Parties (COP) 21, COP24 and other UNFCCC meetings for how governments should design and communicate their NDCs (see Annex 2 for an overview of UNFCCC guidance) *(13, 17)*.

All parties to the Paris Agreement are required, at a minimum, to outline their mitigation efforts and include a greenhouse gas emissions reduction target in their NDCs *(15)*. Other areas that may be included are adaptation, financial support, technology transfer, capacity-building, loss and damage, and transparent sharing of information *(10, 16)*. Detailed adaptation plans are commonly described in separate documents, including NAPs, HNAPs and adaptation communications *(16, 18)*.

NDCs are expected to reflect a national progression in ambition over time, to increasingly align national climate efforts with the goals of the Paris Agreement, and to maximize multilateral trust and transparency in the global efforts to curb climate change *(19)*. Parties are invited to regularly (at least every five years) communicate new or updated NDCs. This is referred to as "NDC enhancement", the "ratchet mechanism" or the "ambition cycle". Fig. 3 summarizes a timeline of this cycle up to 2030.

Fig. 3. NDC ambition cycle of the Paris Agreement



An important part of the NDC ambition cycle is the global stocktake. This is a process designed to regularly assess the collective progress towards achieving the long-term goals of the Paris Agreement *(20)*. The global stocktake assesses collective progress across the areas of mitigation, including response measures; adaptation, including loss and damage; and means of implementation, support and finance flows.

The global stocktake is intended to be used by countries to improve implementation of the Paris Agreement, including by informing the enhancement of their climate ambitions, including their NDCs *(21)*. It also aims to further strengthen international cooperation for climate action *(9, 21)*. The first global stocktake concluded in 2023 at the COP28 United Nations climate conference (Box 1), with future global stocktakes taking place every five years thereafter.

Box 1. First global stocktake outcomes

Key findings and outcomes of the 2023 global stocktake include the following *(22)*:

Mitigation:

- Although parties report progress in all areas (mitigation, adaptation, means of implementation and support), overall the long-term goals of the Paris Agreement are not on track to be achieved.
- Implementation of current NDCs would result in an average 2% reduction in emissions by 2030 compared with 2019, which is not sufficient to reach the Paris Agreement goals.
- There are significantly greater impacts of climate change at warming of 2 °C compared with 1.5 °C, and the goal of limiting warming to 1.5 °C is critical.
- Accelerated action to mitigate climate change is urgent, and parties are requested to enhance the ambition of their 2030 emissions targets in their NDCs, with consideration to national circumstances.
- Equity, CBDR-RC, and the specific circumstances of least developed countries and small island developing states remain important considerations in climate action.
- Increased financial support, capacity-building and technological transfer are required for the ambitious climate action needed to reach the Paris Agreement goals.

Adaptation:

- There has been considerable advancement in the formulation and implementation of NAPs, particularly by developing countries.
- Lack of finance for implementation of NAPs remains a barrier for developing countries.
- Evaluation of the adequacy and effectiveness of current adaptation action is needed.
- Adaptation action can be significantly enhanced by the establishment of user-driven climate services systems, including early warning systems. This necessarily involves improved access, better coordination and greater financial investment.
- The importance of scaled-up adaptation efforts, which are equitable and evidence-based and incorporate Indigenous Peoples' worldviews and knowledge, is strongly emphasized.
- The outcomes adopt the Global Goal on Adaptation, which includes a health-specific target.
- Targets in health-determining sectors are specified, related to improved resilience to water-related hazards (e.g. climate-resilient water supplies and sanitation), climate-resilient food systems, protection of ecosystems and biodiversity, and climate-resilient infrastructure and human settlements, reducing effects on livelihoods and protection of cultural heritage.

Means of implementation and support:

- There are significant funding gaps for implementation of mitigation and adaptation actions in NDCs, particularly for developing countries. There is an urgent need for developed countries to increase collective financial support for implementation.
- Capacity-building support and technology transfer must be scaled up to meet needs.

Overview of health in national climate plans

As countries implement the UNFCCC provisions, they develop several national climate plans and communications. In addition to NDCs, there is a well-established UNFCCC process for the formulation and implementation of NAPs. NAPs allow governments to identify medium- and long-term adaptation needs and to develop and implement strategies and programmes to address these needs *(23)*. As part of this process, ministries of health are encouraged to develop a standalone health-specific component – the HNAP *(14)*. In addition, the UNFCCC calls on countries to develop long-term low-emission development strategies (LT-LEDS), national plans with a 2050 horizon to cut greenhouse gas emissions and improve climate resilience, while simultaneously achieving national development objectives *(24)*. There are a range of opportunities to protect and promote health and well-being in national climate plans and climate planning processes across various action areas and to build synergies across these. Table 1 summarizes some of the key characteristics of climate plans, highlighting areas of overlap and opportunities for synergy.

Table 1. Characteristics of common national climate plans and the role of ministries of health and the overall health community

National climate plan			
Action areas	**HNAP/NAP**	**NDCs**	**LT-LEDS**
Mitigation		✓	Climate-resilient and low carbon sustainable development
Adaptation	✓	✓	
Loss and damage		✓	
Finance	✓	✓	
Timeline			
Short	✓		
Medium	✓	✓	
Mid-century	✓		✓
Approach			
Cross-sectoral	✓	✓	✓
Sectoral	✓	✓	
Role of ministries of health and overall health community	**Ministry of health leads integration of health within NAP and development of HNAP** **Ministry of health sets health-sector adaptation priorities for NAP process** **Ministry of health and health community:** ✓ engage in national NAP process ✓ work with other health-determining sectors to define health-promoting adaptation actions across NAP	**Ministry of health sets health-sector mitigation and adaptation targets and priorities** **Ministry of health and health community:** ✓ contribute to national NDC development process ✓ work with key health-determining sectors (e.g. energy, food and agriculture, transport, water, sanitation and health) to define adaptation and mitigation actions that maximize health gains	**Ministry of health sets health priorities for climate-resilient and low-carbon development** **Ministry of health and health community**: ✓ engage in national LT-LEDS development process ✓ work with other health-determining sectors to ensure health is protected and promoted across the strategy

Quality criteria for integrating health in NDCs

National climate change targets and policies, as outlined in NDC documents, can be strengthened through the integration of health as the ultimate goal and guiding principle of the NDC.

Table 2 provides a summary of proposed quality criteria for ministries of health, the health community and policy-makers in health-determining sectors to consider strengthening health integration in NDCs. This table and the suggested quality criteria are structured around the key components typically included in NDCs and cross-cutting criteria for leadership and enabling environment.

Table 2. Quality criteria for integrating health in NDCs

General NDC structure[a]		Quality criteria for integrating health in NDCs
Leadership and enabling environment 	✓ Lead NDC agency (typically ministry of environment or ministry of climate change) ✓ Description of national cross-sectoral mechanism for preparing, updating, implementing and monitoring NDC, including definition of roles and responsibilities across sectors	✓ The ministry of health leads the health contribution to NDCs ✓ Active engagement of the ministry of health in the NDC process ✓ Climate-informed health planning and programming and health-informed climate programming in key health-determining sectors ✓ Cross-sectoral coordination and policy coherence ✓ Coherence between national climate change and health policy processes
National circumstances and policy priorities 	✓ Introduction to document ✓ Information on national development context ✓ Existing policy priorities, including any existing legislative or regulatory mechanisms ✓ Climate change vulnerabilities and risks ✓ Other country-relevant information	✓ Population health and well-being is the ultimate goal and guiding principle of the NDC ✓ Description of the national health context ✓ Inclusion of existing health policy priorities and relevant climate change and health legislative and regulatory mandates ✓ Identification of health as vulnerable to climate change, and quantification of current and projected risks

General NDC structure[a]		Quality criteria for integrating health in NDCs
Mitigation 	✓ Quantifiable information on reference point (including, as appropriate, a base year) ✓ Timeframes, scope and coverage of mitigation efforts ✓ Mitigation planning processes ✓ Assumptions and methodological approaches, including for estimating and accounting for anthropogenic greenhouse gas emissions and removals ✓ How the NDC is considered fair and ambitious in the light of its national circumstances, and contributes towards prevention of dangerous anthropogenic interference with climate system	✓ Identification of health co-benefits of mitigation actions of key health-determining sectors ✓ Quantification of health co-benefits of mitigation actions of key health-determining sectors ✓ Prioritization of air pollution and short-lived climate pollutant reductions, including standalone health-based targets for reduction of air pollution ✓ Establishment of emission reduction targets for national health systems
Adaptation 	✓ Impacts, risks and vulnerabilities ✓ National adaptation priorities ✓ Implementation and support needs of, and provision of support to, developing country parties ✓ Implementation actions and plans for adaptation ✓ How adaptation actions contribute to mitigation and other international frameworks and conventions ✓ Gender-responsive adaptation action and traditional knowledge, knowledge of Indigenous Peoples and local knowledge systems related to adaptation, where appropriate	✓ Health is a priority sector for adaptation ✓ The NDC complements and supports national approaches to adaptation planning and implementation ✓ Integration of health in the adaptation targets of health-determining sectors ✓ Identification of synergies between mitigation and adaptation for health
Loss and damage 	✓ National circumstances on loss and damage from climate change ✓ Information on national efforts to avert, minimize and respond to loss and damage ✓ Financial considerations in relation to loss and damage, where appropriate	✓ Quantification of climate-sensitive health risks and outcomes, including in health systems and facilities ✓ Quantification of financial implications of health-related loss and damage ✓ Inclusion of priority interventions to avert, minimize and address loss and damage to health and health systems and facilities

General NDC structure[a]		Quality criteria for integrating health in NDCs
Finance 	✓ Information on projected levels of public financial resources provided or required, where appropriate ✓ Other means of implementation, including technology transfer and capacity-building	✓ Estimation of resources required to implement health-related actions and policies in the NDC, including in other sectors ✓ Specification of the conditionality of climate finance for health actions and plans[b] ✓ Use of health impacts and indicators as a basis to prioritize investments in key health-determining sectors
Implementation 	✓ Gap analysis ✓ Assessment of resource needs ✓ Detailed costing ✓ Prioritization of activities ✓ Plan and schedule for agreed implementation activities ✓ Monitoring and evaluation plan to feed into UNFCCC process and updating of NDCs	✓ Development of a health-sector implementation and capacity-building plan ✓ Translation of relevant national mitigation and adaptation targets into health-sector targets, indicators and benchmarks ✓ Development of a health-sector monitoring and evaluation plan, and inclusion of health indicators in the overall NDC monitoring and evaluation framework

[a] Based on UNFCCC guidance where available. Certain elements are commonly included in the majority of NDCs, but the structure of individual NDCs may vary slightly, depending on nationally determined priorities and processes.

[b] A conditional contribution is a contribution that a country would undertake if international means of support are provided or other conditions are met. An unconditional contribution is financed from domestic sources.

Quality criteria for integrating health in NDCs

Leadership and enabling environment

Quality criteria

- **The ministry of health leads the health contribution to NDCs**
- **Active engagement of the ministry of health in the NDC process**
- **Climate-informed health planning and programming and health-informed climate programming in key health-determining sectors**
- **Cross-sectoral coordination and policy coherence**
- **Coherence between national climate change and health policy processes**

The NDC process may differ depending on the country's circumstances and institutional arrangements. In all cases, however, strong health-sector leadership and an enabling environment will support enhanced health integration in the process. The NDC process does not terminate when an NDC is submitted to the UNFCCC. This is an ongoing process that covers iterative enhancements, implementation, monitoring and reporting *(19)*. In most countries, the NDC process is led by the ministry of the environment or climate change (or equivalent agency), which manages cross-sectoral coordination and collaboration. This may include the establishment of a cross-sectoral technical working group.

The quality criteria described in this section relate to health-sector engagement in the ongoing process of preparing, implementing and enhancing the NDC.[4]

The ministry of health leads the health contribution to NDCs

The leadership of the ministry of health (or equivalent) is critical for legitimate integration of health in NDCs and commitment to the implementation of targets and actions. A clear ministerial mandate for NDC contributions, coordination of health-related aspects, implementation, and monitoring and evaluation, which includes assigned roles and responsibilities and allocation of adequate human and financial resources, provides a strong foundation for effective health integration in the NDC.

Ministry of health leadership in defining the health contributions to the NDC process promotes the integration of climate change and health priorities by the health sector and other key health-determining sectors. It is also critical to ensure health-related targets and policies included in the NDC are informed by sector-specific expertise.

Overall coordination of climate change and health work at the national level should be led by national stakeholders – ideally, climate change and health steering committees formed under the leadership of

[4] National climate change processes typically are all led by the same agency (e.g. ministry of the environment) and integrated to ensure consistency and avoid duplication of efforts. As such, quality criteria for health-sector leadership and enabling environment are applicable across national climate processes. The quality criteria presented in this section are based on the WHO Quality Criteria for Health National Adaptation Plans *(14)*.

the ministry of health, including representation by key health-determining sectors and relevant partners at the national and subnational levels.

Leadership by the ministry of health can be demonstrated by the integration or mainstreaming of climate change into periodic health-sector development plans and health programming processes. The leadership role also refers to ensuring the climate change and health steering committee is involved in, and advances the health contribution to, relevant climate change processes, such as NDCs. The role includes supporting health-determining sectors, such as transportation, water and waste management, food and agriculture, and energy, to ensure health is duly protected and promoted by relevant mitigation and adaptation policies and programmes promoted by them.

Formal endorsement of the NDC at the ministry of health level may be considered a signal of national-level commitment to addressing the health impacts of climate change, reducing the health sector's contribution to greenhouse gas emissions causing climate change, and working with other sectors to promote and protect health. Endorsement is also important where an external party has led the preparation of the NDC.

Active engagement of the ministry of health in the NDC process

Active engagement of the health sector in national climate change processes and agendas supports prioritization of climate change and health at the national level, cross-sectoral collaboration and synergies, and access to climate finance for health. In many countries, the ministry of health is already actively engaged – sometimes playing a leading role – in other national climate change processes, such as formulating and implementing the NAP with existing institutional mechanisms for climate change and health. For example, a climate change and health unit or focal point may be designated within the ministry of health to lead the HNAP process and the health contributions to the NDC. National climate change and health steering groups may jointly advance the health contribution of other health-determining sectors across national climate change processes.

Continued engagement of the health sector in national climate change processes, including NDCs, is critical to ensure prioritization of health in the national climate change agenda.

Climate-informed health planning and programming and health-informed climate programming in key health-determining sectors

Health-related NDC targets and policies are more likely to be implementable, sustainable and effective when climate change considerations are embedded in national health planning and programming or in the programming processes of relevant health-determining sectors.

In most cases, national disease control programmes are likely to be exacerbated by climate variability and change and can be strengthened by integrating climate and weather variables. Likewise, health-sector climate change mitigation targets are more likely to be achieved when low-carbon technologies and practices are integrated in regular health planning and programmes. The WHO Operational Framework for Building Climate Resilient and Low Carbon Health Systems is a useful tool for integrating climate change across the health system *(25)*.

Health-related targets included in adaption and mitigation targets and policies by key health-determining sectors need to be included in national relevant sectoral plans and priorities. Although these will be implemented by specific sectors, the health sector has a key role to play in supporting these sectors to define policies that can yield the greatest benefits to health.

Cross-sectoral coordination and policy coherence

Strong cross-sectoral cooperation and coordination are critical to address the health impacts of climate change and reduce health-sector greenhouse gas emissions. Cross-sectoral coordination and policy coherence are relevant for all the components usually included in NDCs and are reflected in all sections of this document. Many other sectors also have a responsibility to address the health risks of climate change and to avoid health harms inadvertently resulting from their climate change policies and measures. The ministry of health or the health community should provide health expertise contributions to the climate change plans of other sectors, such as food and agriculture, water, sanitation and hygiene (WASH), waste management, energy and urban planning, and should work with other sectors to achieve health-sector mitigation targets, including transportation, energy, industry and construction.

Close coordination between line ministries is necessary in the development and implementation phase of NDCs to maximize the availability of sectoral information and expertise, and to ensure the alignment of NDCs with existing sectoral activities *(26)*. For example, cross-sectoral collaboration is particularly important to conduct robust assessments and prioritization of health co-benefits of mitigation actions in other sectors; to identify and avoid potential negative health impacts of mitigation or adaptation actions in other sectors; to enable achievement of health-sector mitigation targets; and to promote continued engagement of the ministry of health in national climate change processes.

National climate change and health steering groups may have a key role to play in advancing this cross-sectoral coordination and whole-of-government approach to protect and promote health. The execution of NDC implementation plans requires collaboration across different levels of government, including with subnational governments and cities. Cross-sectoral collaboration should be explicitly included in the health-sector implementation plan, with specific activities and assigned responsibilities involving other sectors.

International cooperation is valuable to support and accelerate the implementation of NDCs. International initiatives such as the Alliance for Transformative Action on Climate and Health (ATACH) can play a supportive role in sharing best practices and south–south learning to achieve national targets and actions for NDCs as part of building climate-resilient and low-carbon health systems and defining and advocating for health-promoting adaptation and mitigation in other sectors *(27)*.

Coherence between national climate change and health policy processes

Health integration in the NDC process is part of a broader scope of interrelated national climate change process, plans and obligations, such as formulating and implementing the NAP, preparing national communications and adaptation communications, monitoring and evaluation, and reporting on climate plans, biennial reports and LT-LEDS. It is critical that the health contributions to these processes and obligations are aligned to reduce burden, avoid duplication of effort, and support national approaches to promote cross-sectoral climate change and health planning and implementation (e.g. through the national climate change and health steering committees). (See Box 6 later in this document for detail on aligning the NAP and NDC processes.)

National circumstances and policy priorities

Quality criteria

- **Population health and well-being is the ultimate goal and guiding principle of the NDC**
- **Description of the national health context**
- **Inclusion of existing health policy priorities and relevant climate change and health legislative and regulatory mandates**
- **Identification of health as vulnerable to climate change, and quantification of current and projected risks**

NDC documents typically include an introduction that sets out the country's national circumstances. There is no UNFCCC guidance for describing national circumstances in NDCs, which means the format and scope vary, but they typically include:

- an introduction to the country's NDC;
- the national development context;
- existing policy priorities, including any existing legislative or regulatory mechanisms;
- climate change vulnerabilities and risks;
- other country-relevant information.

Population health and well-being is the ultimate goal and guiding principle of the NDC

The health and well-being of a country's population is the ultimate outcome of successful climate mitigation and adaptation action, including implementation of NDC actions across all sectors. Applying a health lens to climate change policy priority-setting – a Health in All Policies (HiAP) approach – recognizes that population health is not only a product of health-sector interventions but also a manifestation of policies that define structures and the environment, such as transportation, food production and sanitation systems *(28)*. This is reflected in climate policy, whereby mitigation actions by key health-determining sectors translate into significant health co-benefits, defined as "the positive effects of policy or measures towards climate action that also have positive effects on health, health systems, and well-being" *(9)*. Mitigation actions in these other sectors slow the progression of climate change and can promote and maximize health co-benefits. Promoting a HiAP approach in climate policies facilitates a whole-of-government approach to better protect and promote health.

In laying out the national development context and priorities, the attainment of the health and well-being of the population can be established as the ultimate goal and guiding principle of the NDCs to be achieved by the collective action of all sectors.

Description of the national health context

The national health context should be described as part of the overall national context. This could cover current morbidity and mortality of climate-sensitive diseases, including health outcomes related to health-determining sectors, such as respiratory diseases, water-related diseases and malnutrition; universal health coverage rates; description of health-care facilities; health workforce composition and capacity; and other relevant characteristics of the health context.

Inclusion of existing health policy priorities and relevant climate change and health legislative and regulatory mandates

This section of NDCs outlines existing health policy priorities, standards and regulations (e.g. water quality, air quality and health infrastructure) and laws and mandates that underpin national health and climate goals, such as national climate change and health strategies and plans, sustainable development plans, and the right to health enshrined in the country's constitution.

Identification of health as vulnerable to climate change, and quantification of current and projected risks

It is critical to specifically identify the health sector as vulnerable to climate change impacts and describe the specific current and projected climate change-related health risks for the country, as identified in a climate change and health vulnerability and adaptation assessment *(29)*. Where feasible, it is recommended that NDCs incorporate quantitative estimates of current and future health impacts of climate change, including vector-, water- and foodborne diseases, direct injuries or death, mental health, noncommunicable diseases, respiratory diseases, heat-related illness and occupational health. The identification of negative health impacts and health risks of climate change includes the risks to a country's health system and health-care facilities, based on context-specific exposures and vulnerabilities to climate hazards *(29)*.

Example: Indonesia

The 2022 NDC of Indonesia sets out climate change policy priorities through a health lens by pointing to the Indonesian Constitution, which mandates that "every person shall have the right to enjoy a good and healthy environment". The NDC also prioritizes climate actions that will improve the quality of life of its citizens *(30)*.

Useful resources

- SDG Climate Action Nexus Tool. Cologne: NewClimate Institute (https://ambitiontoaction.net/scan_tool/, accessed 19 September 2024).
- World health statistics 2024: monitoring health for the SDGs, sustainable development goals. Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/376869, accessed 19 September 2024).
- A 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; 2023 (https://www.who.int/publications/i/item/9789240057906, accessed 4 July 2024).
- Climate change and health: vulnerability and adaptation assessment. Geneva: World Health Organization; 2021 (https://iris.who.int/handle/10665/345968, accessed 4 July 2024).
- Healthy environments for healthier populations: why do they matter, and what can we do? Geneva: World Health Organization; 2019 (https://iris.who.int/handle/10665/325877, accessed 19 September 2024).
- Health in all policies: training manual. Geneva: World Health Organization; 2015 (https://iris.who.int/handle/10665/151788, accessed 19 September 2024).
- Health and climate change country profiles. Geneva: World Health Organization (https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/evidence-monitoring/country-profiles, accessed 2 September 2024).

Mitigation

Quality criteria

- **Identification of health co-benefits of mitigation actions of key health-determining sectors**
- **Quantification of health co-benefits of mitigation actions of key health-determining sectors**
- **Prioritization of air pollution and short-lived climate pollutant reductions, including standalone health-based targets for reduction of air pollution**
- **Establishment of emission reduction targets for national health systems**

All NDCs are mandated to include a mitigation section with detailed information on mitigation targets, implementation timeframes, greenhouse gas emissions included, and any sectoral targets *(7, 17)*.

In developing the health-promoting mitigation component of the NDC, the CBDR-RC principle is applicable *(31)*. Greenhouse gas emissions from the health sector worldwide account for approximately 5% of total emissions, but individual country contributions are uneven *(32)*. For ministries of health, the critical priority is to ensure the provision of high-quality care and climate-resilient health systems. In some cases, this means ministries of health will need to increase their emissions to improve performance by, for example, ensuring access to water, sanitation or energy for health-care facilities. Overall, countries should ensure health system performance is not compromised as a result of mitigation actions *(25)*. Countries with low emissions and low-performing health systems are recommended to emphasize building health system capacity and resilience and, while doing so, to consider the possibility of reducing emissions by implementing low-emission technologies and actions. Countries with high-performing health systems with high climate-resilience capacity should aim to reach net-zero emissions as soon as possible – and no later than 2050 *(25)*.

Identification of health co-benefits of mitigation actions of key health-determining sectors

NDCs are mandated to report on co-benefits likely to result from mitigation actions across sectors. The health co-benefits from climate change actions are well evidenced, offer strong arguments for transformative change, and can be gained across many sectors, including energy generation, transport, food, agriculture, housing and buildings, industry and waste management *(30, 32–34)*.

Health co-benefits from mitigation can arise through several pathways. Beyond the reduced risk of future health threats resulting from slowed progression of climate change, health co-benefits manifest by virtue of climate policies and measures reducing harmful environmental exposures, such as reduced air pollution, promoting social equity, and facilitating healthier diets, physical activity and improved mental health *(9, 35, 36)*. Table 3 overviews examples of the main pathways for health co-benefits resulting from mitigation actions already included in NDCs.

Table 3. Examples of health co-benefits of mitigation actions in health-determining sectors

Mitigation action		Health co-benefits
Transport 	✓ Active and rapid mass transport ✓ Ultra-low-sulfur diesel with diesel particle filters ✓ Mode-shift to active transport ✓ Higher standards for vehicle emissions and efficiency	✓ Improved air quality ✓ Reduced crop damage and extreme weather ✓ Increased physical activity ✓ Reduced respiratory, cardiovascular and neurological diseases ✓ Reduced noise ✓ Improved mental health ✓ Fewer road traffic injuries
Agriculture and food systems 	✓ Alternating wet and dry rice irrigation ✓ Improved manure management ✓ Reduced open burning of agricultural fields ✓ Promotion of healthy diets low in red and processed meats and rich in plant-based foods ✓ Reduced food waste	✓ Reduced crop damage and extreme weather ✓ Reduced vector-borne diseases ✓ Improved air quality ✓ Improved indoor air quality ✓ Reduced respiratory, dermatological, renal and neoplastic hazards ✓ Reduced risk of antibiotic resistance and foodborne diseases ✓ Reduced food insecurity and undernutrition ✓ Shift to sustainable and nutritious diets, leading to a reduction in diet-exacerbated noncommunicable diseases
Household air pollution and building design 	✓ Low-emission stoves or reduced use of solid fuels ✓ Improved lighting to replace kerosene lamps ✓ Passive design principles	✓ Improved air quality ✓ Reduced crop damage and extreme weather ✓ Less violence and risk of injury during fuel collection ✓ Fewer burns

Mitigation action		Health co-benefits
Energy supply and electricity 	✓ Switch from fossil fuels to renewable energy for large-scale power production ✓ Replacement of small-scale diesel generators with renewable energy	✓ Improved air quality ✓ Reduced crop damage and extreme weather ✓ Fewer occupational injuries ✓ Reduced noise ✓ Just energy access, particularly for people who are dependent on devices such as L-VADs, nebulizer machines and mobility devices ✓ Reduced respiratory diseases, cancers, fatigue, headaches, anxiety, irritation of the eyes, nose and throat, and damage to the cardiovascular, reproductive and nervous systems ✓ Improved mental health and well-being
Waste management 	✓ Landfill gas recovery ✓ Improved wastewater treatment, including sanitation	✓ Improved air quality ✓ Reduced risk of waterborne diseases and other water-related health impacts ✓ Reduced cancer, lymphoma, malformations and mortality ✓ Reduced impacts on reproductive organs and well-being
Health sector 	✓ Climate-resilient health system ✓ Low-carbon health system ✓ Universal health coverage	✓ Improved air quality ✓ Improved health-care access ✓ Reduced health-care costs ✓ Decreased disruptions to care delivery ✓ Decreased disruptions to medical and equipment supply chain

Source: World Health Organization *(37, 38)*.

The public health gains, including in economic terms, resulting from ambitious mitigation efforts have been shown to far outweigh their costs *(33)*. The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report states: "Air quality improvements alone can substantially offset, or most likely exceed, mitigation costs at the societal level" *(39)*. Incorporating health co-benefits in NDCs can provide a strong health argument for mitigation actions in many sectors and ensure prioritized actions result in the greatest benefits to health and well-being.

It is recommended that the ministry of health and the overall health community support key health-determining sectors (e.g. energy generation, transport, food and agriculture, housing and buildings, industry, water and waste management) and the lead NDC agency in identifying the potential health co-benefits of different climate mitigation policies in their respective sectors and to promote these with the greatest benefits for health and the climate. It is important to ensure unintended health harms of policies in other sectors are avoided.

The health impact assessment method and tools could be used to work with other sectors to understand the health implications of their mitigation policies and targets *(40)*. Box 2 summarizes other WHO tools to support integrating health co-benefits in NDCs.

Box 2. WHO tools to assess health co-benefits of climate change mitigation

- **CLIMAQ-H software** (which replaces and advances the Carbon Reduction Benefits on Health tool) is used to estimate the health and economic gains achieved from domestic carbon reductions. The tool is tailored to countries from the WHO European Region. It is used to assess the outcomes of climate-driven policies and support decision-making by comparing the potential health co-benefits achieved by implementing their NDC targets *(41)*.
- **AirQ+** is a risk assessment and modelling tool that calculates the health effects of long-term exposure to ambient and household (indoor) air pollution. AirQ+ allows estimation of the reduction in life expectancy and health effects as air pollution levels change *(42)*.
- **The Health Economic Assessment Tool** calculates the health benefits and economic impact of increased proportions of urban walking and cycling. It can also account for health effects of injury risks, air pollution exposure and carbon emissions *(43)*.
- **The Integrated Sustainable Transport and Health Assessment Tool** calculates the air pollution emissions (particulate matter, nitrogen oxides, sulfur dioxide, carbon dioxide) from the existing mix of bus, car and motorcycle traffic. It also determines the health and economic impacts deriving from changes in these emissions over time *(44)*.
- **The GreenUr tool** calculates the impact of urban green spaces on health exposure, including cardiovascular diseases. GreenUr is a flexible geographic information system (GIS) plugin *(45)*.
- **The Benefits of Action to Reduce Household Air Pollution tool** is a WHO cost–benefit planning tool for quantifying and comparing the health, climate, social and economic impacts of technological and policy interventions for clean cooking *(46)*.

Quantification of health co-benefits of mitigation actions of key health-determining sectors

Assessments of the health co-benefits of mitigation actions in other sectors are useful to prioritize mitigation policies and targets included in the NDC. Where possible, it is suggested to include both forward-looking estimates (to model future potential benefits to inform policy-making) and retrospective estimates (to evaluate the effectiveness and health gains from implemented policies). Even when quantification is not possible, targets and policies with the greatest health co-benefits should be prioritized using secondary data sources and expert judgement.

Assessments of health co-benefits can be used to establish a baseline to understand the potential impact of future policies. Assessments can be combined with routine monitoring to adjust policy and intervention implementation as needed to maximize health gains. For example, WHO monitors air pollution, including exposure levels and health impacts *(47)*. Monitoring of health co-benefits should be included in the health sector monitoring and evaluation plan and the overall NDC monitoring and evaluation framework (see "Implementation and monitoring of health priorities in NDCs" below).

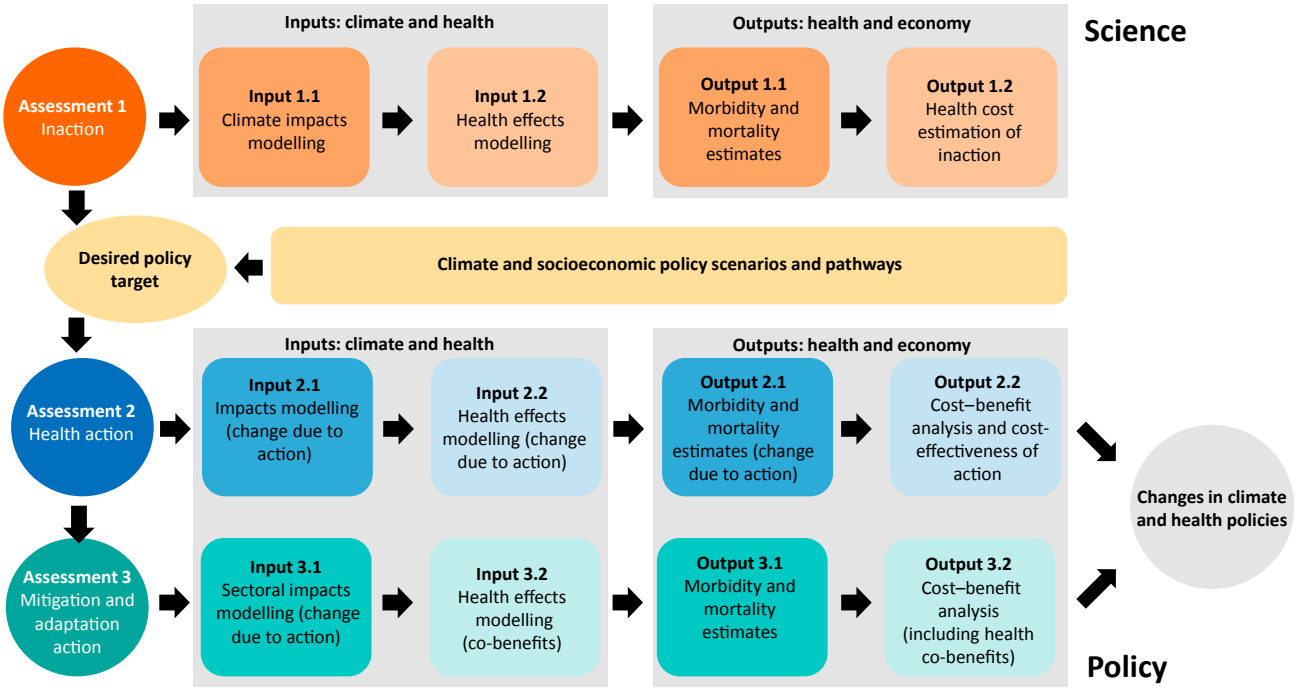
Assessing the impact of climate change mitigation policies on human health can inform and improve the development of a country's mitigation section of the NDC in several ways by:

- allowing climate change policies, targets and actions to be assessed in the country's wider context, including developmental and economic priorities;
- supporting integration of health economics and policy assessment across sectors, assisting decision-makers to identify the most cost-effective policy options;
- linking policy-making across sectors, highlighting the central role of health in development;
- informing decision-makers of potential health gains and savings that would otherwise go undocumented, such as reduced morbidity and mortality and reductions in financial costs of health care *(33)*.

Focusing on multiple co-benefits of ambitious climate policies, including environmental, health and economic benefits, highlights the advantages of such policies to policy-makers and the public and strengthens the ambition of NDCs. Some mitigation policies, however, may not maximize potential health gains, and some policies could potentially cause harm to health. As such, it is important that countries continue to strengthen the evidence of health benefits from climate mitigation action and that health stakeholders are fully involved with climate processes at all levels to ensure health considerations are well understood and accounted for when developing national policies to address climate change *(9)*.

WHO and other organizations have developed a wide range of tools to support governments to assess, quantify and monitor the health co-benefits of climate change (see Box 2) *(48)*. In addition, WHO has developed a framework for the economic valuation of health outcomes from climate action *(38)*. This framework provides a suggested process for a comprehensive assessment of climate-related health costs and co-benefits generated by climate mitigation and adaptation actions (Fig. 4). The assessments represent distinct steps in the policy analysis process that are usually conducted by different disciplines (e.g. scientists and policy-makers in the health sector and climate adaptation and mitigation domains). The assessments provide various entry points and evidence for a range of audiences. This integrated approach results in an economic valuation of the health outcomes of a particular climate policy.

Fig. 4. WHO framework for assessing health costs and co-benefits from climate mitigation actions



Source: World Health Organization *(38)*.

Prioritization of air pollution and short-lived climate pollutant reductions, including standalone health-based targets for reduction of air pollution

In addition to quantifying and reporting the health gains from air pollution reductions as part of a health co-benefits assessment, NDCs can include standalone reduction targets for air pollution and short-lived climate pollutants, which would bring considerable climate and health benefits (see Box 3). It is recommended that the ministry of health works with other sectors, such as energy generation, transport, waste management, food and agriculture, and industry, to identify and commit to health-based sectoral targets and interventions that have a large potential to reduce air pollution and short-lived climate pollutants and that are in line with the WHO air quality guidelines *(49)*. Such interventions include the adoption of clean cooking solutions, improved road vehicle standards, and strengthened waste management practices. Air quality monitoring and achievement of targets are included in the NDC monitoring and evaluation framework (see "Implementation and monitoring of health priorities in NDCs" below).

Box 3. Air pollution

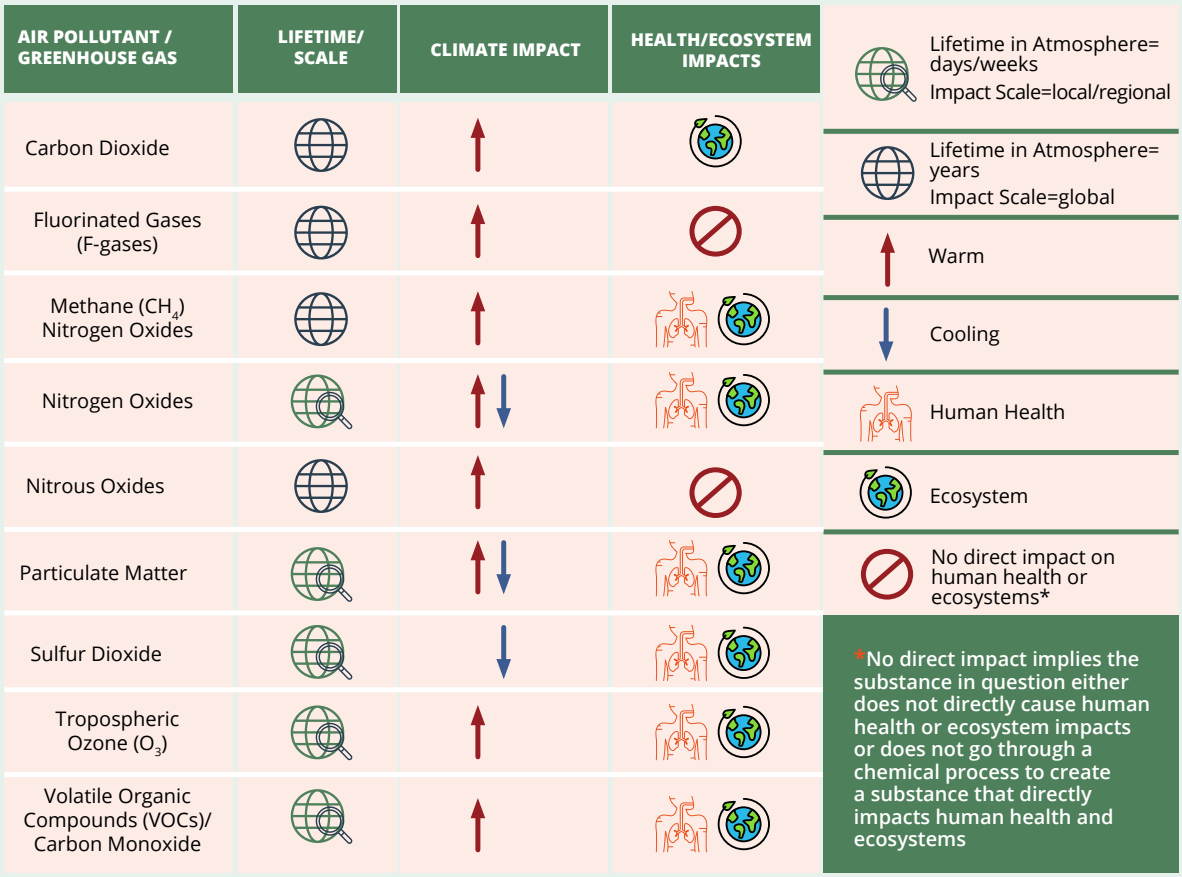
Air pollution is a complex mixture of solid particles, liquid droplets and gases that arise from different sources and sectors, including the energy, transport, industrial, agriculture, waste and health-care sectors *(49)*.

Air pollution is measured in particulate matter (PM) size. Fine particulate matter (PM2.5) comprises particles that are 2.5 micrometres or less in diameter. At this size, particles are able to travel deep into the lungs and be absorbed in the bloodstream, which can lead to respiratory diseases and exacerbate cardiovascular and cerebrovascular diseases. Effects on the nervous system and pregnancy outcomes are also observed. Short-lived climate pollutants, such as black carbon and ground-level ozone, threaten human health and contribute to global warming (Fig. 5). Tackling climate change and air pollution together yields large human health benefits.

WHO data show that nine in every 10 people breathe outdoor air that exceeds the WHO guideline limits for air pollutants. A majority of the premature deaths attributed to PM2.5 could be avoided if countries attain the annual WHO guideline levels for PM2.5 *(49)*.

Reducing air pollution levels by achieving the recommended WHO air quality guideline levels will deliver substantial health benefits globally and at the same time reduce greenhouse gas emissions.

Fig. 5. Impact of air pollutants and greenhouse gases on climate and health



Source: World Health Organization *(37)*.

Establishment of emission reduction targets for national health systems

Countries with high health-system emissions should set specific standalone emission reduction targets to contribute to reductions in the estimated 5.2% of global greenhouse gas emissions of the health sector *(32)*. The WHO report Target Setting for Low Carbon Sustainable Health Systems provides further guidance on setting ambitious and feasible emission reduction targets for health systems *(50)*.

Countries with minimal emissions are recommended to emphasize building resilience and improving health systems performance while considering a low-carbon pathway for their health systems, where feasible and without compromising quality of care *(25)*. In some cases, this means national health systems will need to increase their emissions to reach optimal performance and overall climate resilience. Low-carbon health systems often have the added benefit of reducing health-care costs, such as through decreased energy use and optimization of resources, while bolstering the health co-benefits of mitigation *(51)*.

Health-system emissions are categorized into "scopes", defined by the Greenhouse Gas Protocol *(52)*:

- Scope 1: direct emissions from health-owned or directly controlled sources (on site).
- Scope 2: indirect emissions from the generation of purchased energy (mostly electricity).
- Scope 3: other indirect emissions from production and transportation of goods and services, including all domestic and international supply chains and end-of-life disposal *(25)*.

A baseline assessment of greenhouse gas emissions of the health system, including health-care facilities, should be conducted to identify emissions hotspots and define actions to reduce emissions in those hotspots *(50)*. For countries that do not have the capacity to conduct sophisticated assessments, there are several interventions that could be implemented to reduce emissions *(53)*. The assessment can be used to understand where to target interventions and inform the identification and prioritization of emissions targets and mitigation actions for the health sector. Importantly, there are several mitigation actions to reduce emissions in health systems that can be used even in the absence of a baseline emissions assessment *(25, 53)*.

The WHO Operational Framework for Building Climate Resilient and Low Carbon Health Systems (Box 4) provides sample interventions for health systems mitigation, including related to energy access for the provision of health services; energy efficiency; procurement of products, pharmaceuticals and technologies; transport; food production and consumption; and waste management *(25)*. If an action plan or roadmap to decarbonize or achieve a net-zero emissions health system has been developed, it is recommended that the NDC is aligned with this plan.

Box 5 presents the experience of Guinea in conducting a baseline assessment of its health-system greenhouse gas emissions.

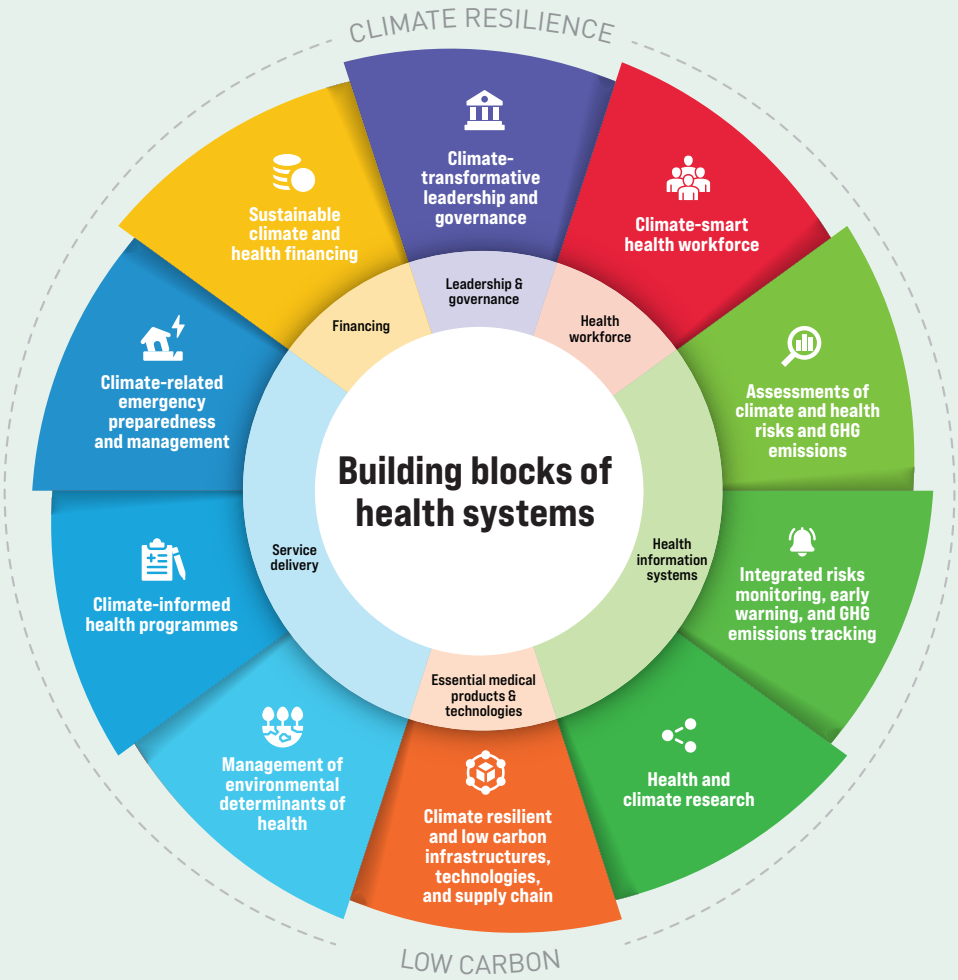
Box 4. WHO Operational Framework for Building Climate Resilient and Low Carbon Health Systems

The WHO Operational Framework for Building Climate Resilient and Low Carbon Health Systems outlines ways for the health sector to address challenges presented by climate change systematically and effectively, while prioritizing quality of care and overall climate resilience and reducing its own contribution to climate change (Fig. 6). The Operational Framework can be used to develop comprehensive plans, including NDCs and HNAPs, to build climate-resilient and low-carbon health systems *(25)*.

A climate-resilient and low-carbon health system is one that is "capable of anticipating, responding to, coping with, recovering from, and adapting to climate-related shocks and stress, while minimizing [greenhouse gas] emissions and other negative environmental impacts to deliver quality care and protect the health and well-being of present and future generations" *(25)*.

In NDCs, the Operational Framework is particularly useful in integrating health in the mitigation and adaptation components.

Fig. 6. WHO Operational Framework for Building Climate Resilient and Low Carbon Health Systems

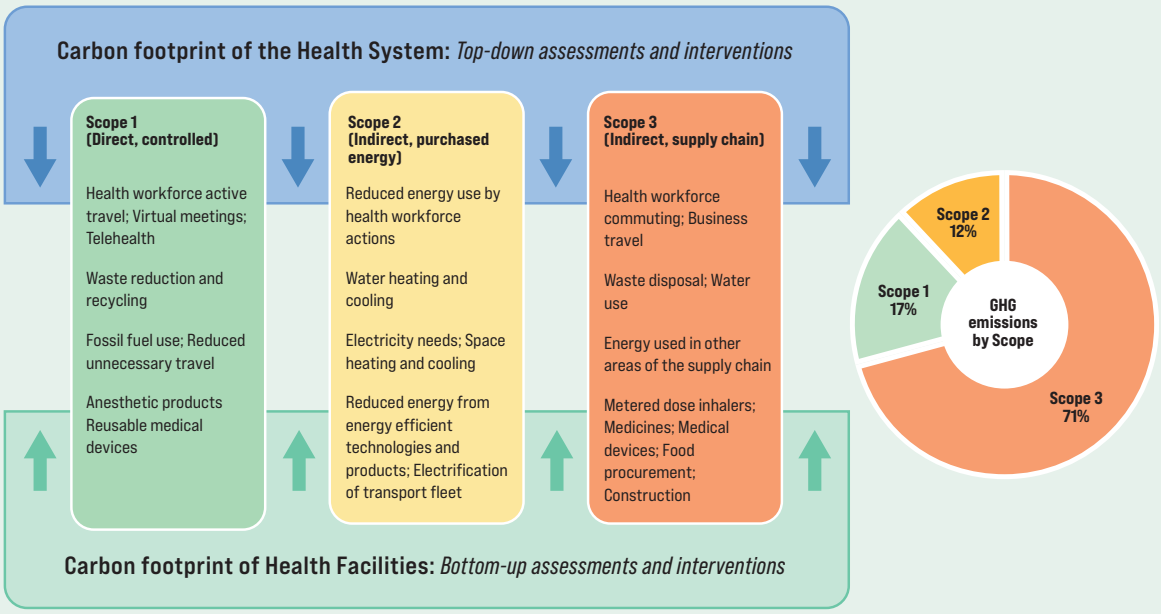


Source: World Health Organization *(25)*.

National health systems may need to implement interventions at the national, subnational and health-care facility levels (Fig. 7):

- Greenhouse gas emissions:
  - Conduct a baseline assessment of greenhouse gas health-sector emissions by scopes.
  - Publicly report a greenhouse gas inventory for a base year of emissions.
  - Identify low-regret interventions for reduction of greenhouse gas emissions for key greenhouse gas emission hotspots.
  - Implement interventions to reduce supply chain emissions identified, such as more efficient use of resources, low-carbon substitutions and product innovation, and requirements for health-system suppliers to reduce greenhouse gas emissions.
  - Facilitate agreements with health-system suppliers to reduce greenhouse gas emissions.
  - Measure number of health facilities with greenhouse gas emissions assessed.
- Tracking progress:
  - Identify key indicators and iterative assessments to track reductions in greenhouse gas emissions over time.
  - Establish a dedicated climate change team responsible for coordinating implementation of the climate strategy and monitoring progress across the system.
  - Assess results to prioritize allocation of resources for low-carbon sustainability.

Fig. 7. Conceptual framework for low-carbon health systems and health facilities linked to health system areas, scopes and approaches



Source: World Health Organization *(25)*.

Box 5. Case study: Guinea[5]

© Ministry of Health and Public Hygiene, Republic of Guinea

Training workshop on emissions calculation for health facilities in the Kindia region of the Republic of Guinea.

Guinea is one of many African countries where health is already affected by climate change. Disrupted precipitation patterns, rising temperatures and extreme weather events increasingly impact population health and the health system in Guinea, amid resource constraints and development needs. Guinea submitted its NDC to the UNFCCC in 2015 along with two national communications in 2001 and 2018. Recognizing the growing challenges of climate change, the Ministry of Health and Public Hygiene of Guinea committed to the COP26 Health Programme commitments and joined ATACH. Guinea conducted the first baseline assessment of greenhouse gas emissions of health-care facilities in 2022.

With WHO support, the Ministry of Health and Public Hygiene developed a roadmap towards a climate-resilient and low-carbon sustainable health system. The roadmap outlines a comprehensive approach to integrate climate adaptation and mitigation into the development of the health system. As part of this work, a baseline assessment of greenhouse gas emissions was conducted in 51 health-care facilities to estimate the climate footprint of facilities in the health system, estimate carbon emissions linked to supply chains, identify emissions hotspots, and identify mitigation measures.

Key stakeholders across sectors and levels were consulted in the development of the national roadmap, including the Ministry of Health and Public Hygiene and the Ministry of the Environment and Sustainable Development.

The following participatory phases were undertaken to assess emissions and identify priority actions for low-carbon development in the health system:

- Various types of health facility across the country were included in the scope of the assessment.
- A total of 66 health officials and facility representatives were trained in the use of a health-care emissions calculation tool developed by the Aga Khan Development Network *(54)*.
- Data were collected by trained representatives in 51 health-care facilities across Guinea over 18 days.

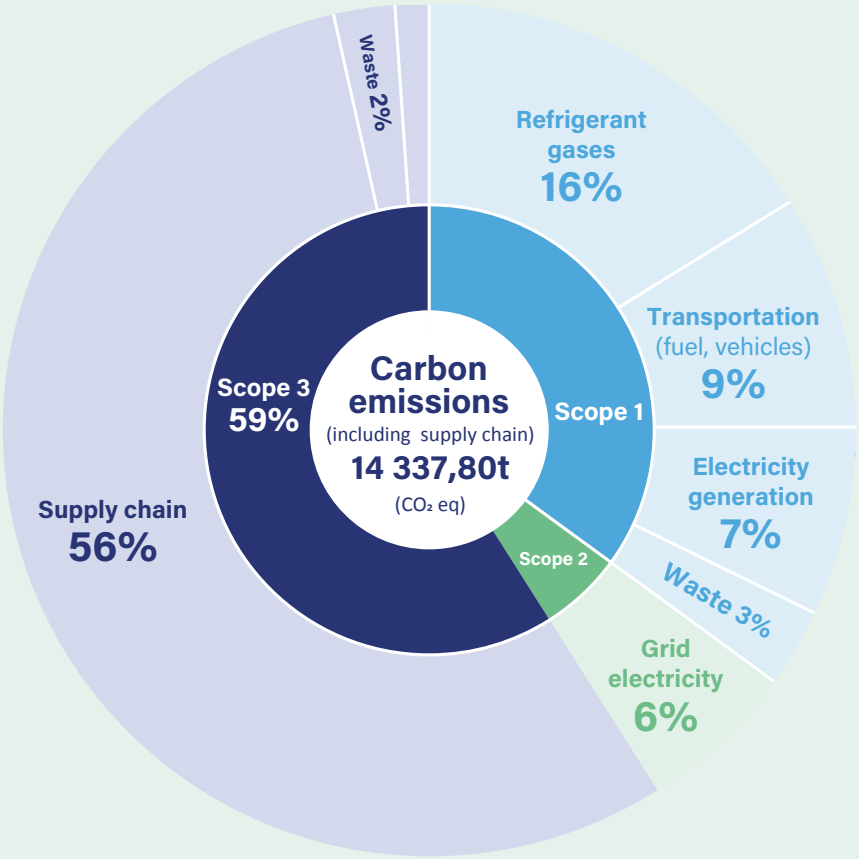
[5] The full case study can be found at https://www.atachcommunity.com/our-impact/case-studies/health-system-ghg-emissions-baseline-assessment-in-the-republic-of-guinea/.

- Data were validated, compiled and analysed by a group of key experts and facility representatives. Data were classified by type of facility to estimate total emissions from health-care facilities and identify major sources of emissions.
- A health-care facilities emissions assessment report was developed, and low-carbon health system development strategies were identified considering emissions hotspots.

The key results of the assessment estimated the greenhouse gas emissions of these 51 health-care facilities at 14 337.8 tonnes of carbon dioxide equivalent (CO_2eq) annually. This was distributed unevenly among the three scopes (Fig. 8):

- Scope 1: 35% (5002.2 tonnes CO_2eq) from direct activities of health facilities.
- Scope 2: 6% (917.1 tonnes CO_2eq) from indirect emissions – the majority from supplied electricity.
- Scope 3: 59% (8418.4 tonnes CO_2eq) from other entities that provide products or services for health facility operations, including professional travel , inhalers, health-care waste transfers to small and medium-sized enterprises, and the supply chain.

Fig. 8. Breakdown of greenhouse gas emissions of 51 health-care facilities in Guinea



Based on the assessment, 46 areas of action to mitigate emissions from the health system, including health-care facilities, were identified. Actions include addressing refrigerants, energy, transport, supply chain, research and policy integration within national climate plans, in collaboration with the Ministry of the Environment and Sustainable Development.

This assessment was conducted between the first submission of Guinea's NDC and the next round of enhancements (*2025*), presenting an opportunity to build on these results and integrate the key outcomes and related targets into the next NDC.

Example: Colombia

To enhance its current NDC (*2021*), the Government of Colombia, with support from WHO and other partners, conducted an analysis to quantify the health and economic co-benefits of raising the ambition of its NDC *(54, 55)*. Three modelling tools were used to estimate the health benefits of changes in air pollution associated with the implementation of the NDC:

- the Low Emissions Analysis Platform tool to quantify the emissions reduction potential of different mitigation measures *(56)*;
- an integrated benefits calculator to quantify the impact of changes in air pollutant emissions on air pollution exposure and health impacts;
- the Carbon Reduction Benefits on Health tool, an economic assessment tool developed by WHO, to model health effects from air pollutants *(57)*.

The study found that an increased mitigation pathway – consisting of a CO_2 reduction of approximately 58% by 2030 – could prevent more than 3800 premature deaths annually by 2030 due to the simultaneous reduction in air pollutants. In economic terms, health gains from the higher mitigation pathway would save the equivalent of 0.64% of Colombia's projected gross domestic product in 2030 (saving approximately US$ 1.9 billion). The higher mitigation scenario was estimated to provide 20% more health and economic benefits than the lower mitigation scenario *(55)*.

The use of these tools allowed the Government to make a more informed decision to optimize its climate policies for the largest possible benefits and deliver win–win outcomes. This will be achieved by simultaneously limiting emissions of climate-altering pollutants and delivering gains in healthy life-years for citizens, while maximizing economic savings in the health sector.

Example: Chile

The updated NDC of Chile (*2020*) strengthened the country's previous climate targets through greater integration of climate and clean air policies. The NDC recognizes air quality as a national priority for environmental management and emphasizes the importance of linking climate objectives with air quality goals. The NDC makes two air quality commitments *(58)*:

- improved air quality policies, including air quality regulations applied to public and private transport systems; improved household energy efficiency policies and practices; and setting emission and quality standards for the industry sectors;
- a standalone short-lived climate pollutants mitigation target to reduce total black carbon emissions by at least 25% by 2030, compared with 2016 levels.

Although it is not quantified, the NDC asserts that these commitments will bring multiple health benefits to the population, including improved quality of life, cleaner cities, reduced local pollution, and reduced greenhouse gas emissions.

Example: Sudan

The NDC of Sudan (*2022*) commits to providing solar energy to health centres. This will improve basic health services to communities in remote areas without access to electricity and help to put the health system on a low-carbon pathway *(59)*.

Example: Viet Nam

The NDC of Viet Nam (*2020*) commits to energy-saving and energy efficiency measures in hospitals and community health centres, which will improve basic services and result in cost-savings for facilities *(60)*.

Useful resources

Health co-benefits

- A 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; 2023 (https://iris.who.int/handle/10665/367385, accessed 4 July 2024).
- Health in the green economy: health care facilities. Geneva: World Health Organization; 2021 (https://www.who.int/publications/m/item/health-in-the-green-economy-health-care-facilities, accessed 19 September 2024).
- Health in the green economy: occupational health. Geneva: World Health Organization; 2021 (https://www.who.int/publications/m/item/health-in-the-green-economy-occupational-health, accessed 19 September 2024).
- Health in the green economy: health co-benefits of climate change mitigation – transport sector. Geneva: World Health Organization; 2012 (https://www.who.int/publications/i/item/9789241502917, accessed 19 September 2024).
- Health in the green economy: health co-benefits of climate change mitigation – housing sector. Geneva: World Health Organization; 2011 (https://www.who.int/publications/i/item/9789241501712, accessed 19 September 2024).
- Climate change and health toolkit. Geneva: World Health Organization (https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/capacity-building/toolkit-on-climate-change-and-health/cobenefits, accessed 20 February 2024).

Air quality targets

- Pathfinder Initiative. London: London School of Hygiene & Tropical Medicine (https://www.lshtm.ac.uk/research/centres-projects-groups/pathfinder-initiative, accessed 19 September 2024).
- LEAP. Stockholm: Stockholm Environment Institute (https://leap.sei.org/, accessed 19 September 2024).
- Ambient (outdoor) air pollution. Geneva: World Health Organization; 2024 https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health, accessed 19 September 2024).
- Air pollution data portal. Geneva: World Health Organization (https://www.who.int/data/gho/data/themes/air-pollution?lang=en, accessed 19 September 2024).
- Clean Household Energy Solutions Toolkit (CHEST). Geneva: World Health Organization (https://www.who.int/tools/clean-household-energy-solutions-toolkit, accessed 19 September 2024).
- Health and Energy Platform of Action (HEPA). Geneva: World Health Organization (https://www.who.int/initiatives/health-and-energy-platform-of-action, accessed 19 September 2024).
- Household energy policy repository. Geneva: World Health Organization (https://www.who.int/tools/household-energy-policy-repository, accessed 19 September 2024).

Health-sector mitigation

- First wins library. Geneva: Alliance for Transformative Action on Climate and Health (https://www.atachcommunity.com/resources/first-wins-library/, accessed 29 July 2024).
- Global road map for health care decarbonization. Arlington, TX: Health Care Without Harm (https://healthcareclimateaction.org/roadmap, accessed 19 September 2024).
- Energizing health: accelerating electricity access in health-care facilities. Geneva: World Health Organization; 2023 (https://www.who.int/publications/i/item/9789240066960, accessed 19 September 2024).
- Operational framework for building climate resilient and low carbon health systems. Geneva: World Health Organization; 2023 (https://www.who.int/publications/i/item/9789240081888, accessed 19 September 2024).
- Target setting for low carbon sustainable health systems. Geneva: World Health Organization; 2021 (https://iris.who.int/handle/10665/377724, accessed 29 July 2024).
- WHO guidance for climate resilient and environmentally sustainable health care facilities. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/9789240012226, accessed 4 July 2024).

Health adaptation and climate resilience

Quality criteria

- **Health is a priority sector for adaptation**
- **The NDC complements and supports national approaches to adaptation planning and implementation**
- **Integration of health in the adaptation targets of health-determining sectors**
- **Identification of synergies between mitigation and adaptation for health**

The UNFCCC 2023 NDC synthesis report found that 81% of NDCs included an adaptation component *(16)*. According to the 2023 WHO assessment of health in NDCs, approximately 63% of NDCs include health adaptation priorities *(10)*.

The adaptation component of the NDC may include:

- impacts, risks and vulnerabilities;
- adaptation priorities, including timebound quantitative adaptation measures and targets;
- adaptation policies and plans;
- sectoral adaptation actions;
- synergies with national mitigation goals and other international frameworks and conventions;
- gender-responsive adaptation action and traditional knowledge, Indigenous Peoples' knowledge, and local knowledge systems related to adaptation;
- support needs for adaptation implementation of developing countries;
- monitoring and evaluation of adaptation, including indicator frameworks (see "Implementation and monitoring of health priorities in NDCs" below) *(10, 16)*.

Opportunities exist to integrate health in the adaptation section of the NDC, and there is significant flexibility for the format.

Health is a priority sector for adaptation

The adaptation component of the NDC provides an opportunity to integrate and elevate national health adaptation priorities.

Many countries that contribute the least to greenhouse gas emissions are experiencing the greatest health impacts *(1)*. In line with the principle of CBDR-RC, many countries have a stronger emphasis on resilience and adaptation than mitigation in their NDC. These countries will likely pursue a development pathway focusing on improving health system resilience to climate change and, in doing so, will have the possibility of adopting low-carbon technologies where possible (e.g. increasing access to clean and reliable energy in health-care facilities) *(25)*.

It is critical that health is included in the national adaptation planning process and that this is integrated in the NDC. The adaptation component of the NDC may include a summary of the current and future

health risks of climate change specific to the country context, as identified in a climate change and health vulnerability and adaptation assessment *(29)*. This section could also outline the country's existing health adaptation landscape, including a summary of health adaptation plans and interventions and health-sector engagement in national adaptation planning processes, such as the process to formulate and implement the NAP or to develop a national climate change and health strategy or a standalone HNAP.

The NDC complements and supports national approaches to adaptation planning and implementation

The inclusion of an adaptation component in NDCs, even for countries focusing on mitigation action, can raise the profile of adaptation and promote alignment and synergies across the various national climate and health processes and plans. It is recommended that the development of the adaptation section of the NDC is fully aligned with, and continues to support, existing national adaptation planning processes mechanisms, including for health. This process of alignment will differ according to country context. Box 6 and Fig. 9 outline considerations to support existing national health adaptation processes.

Box 6. Aligning NAPs to NDCs

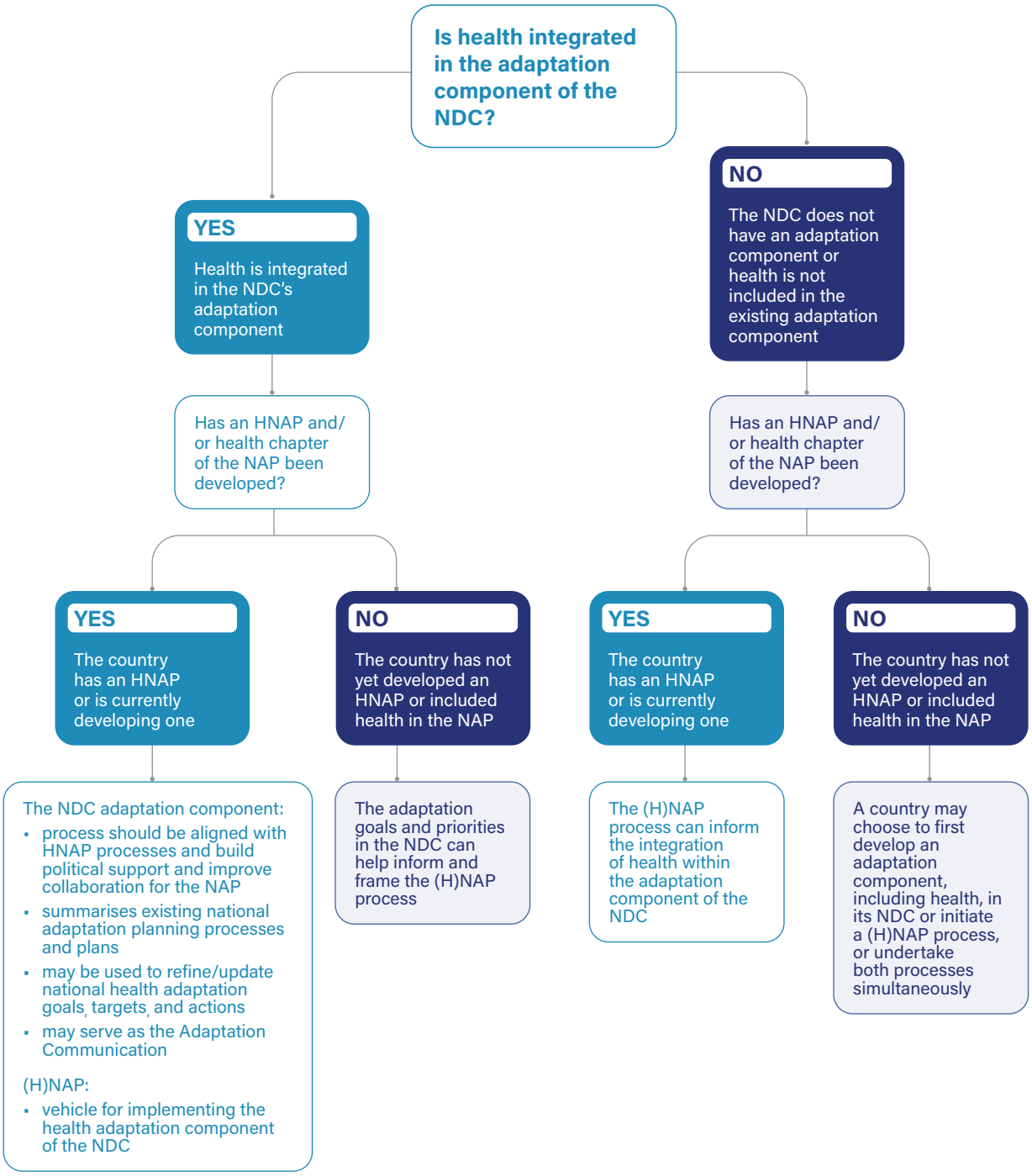
Although the process to formulate and implement the NAP is the main adaptation planning process in many countries, at the national level there may be other climate change policy processes where national adaptation priorities, including for health, can be integrated or advanced. These include national development plans such as LT-LEDS and NDCs. The health chapter of the NAP and the standalone HNAP are key policies to advance health adaptation to climate change, but including health in LT-LEDs and NDCs can serve to make this priority visible and to advance national priorities for health adaptation to climate change.

Alignment of these different processes and targets can increase coherence and effectiveness towards health adaptation goals. For example, many countries include adaptation priorities in their NDCs, even when a separate NAP or HNAP exists *(10, 16)*. At the same time, the NAP process provides a domestic planning process that can set out in more detail how NDC adaptation goals are implemented. Ensuring alignment of these two policy processes and applying expertise drawn from the NAP or HNAP process and linking it with the NDC can accelerate enhanced health adaptation action.

Approaches to align health adaptation goals in NDCs and NAPs include:

- using the NAP or HNAP process as a means to operationalize adaptation commitments in the NDC (e.g. by providing a detailed timeline, budget and establishment of roles);
- using the NDC process to complement the existing adaptation planning process and build political support for the NAP or HNAP process;
- using the NDC process to refine or update adaptation goals and priorities;
- using the NAP or HNAP process to inform the development of NDCs.

Fig. 9. Alignment of the HNAP and NDC



Source: adapted from NDC Partnership *(61)*.

National health adaptation priorities are often outlined in the health chapter of the NAP or HNAP, or both *(14)*. In most cases, the NDC adaptation component should align with the priorities and measures outlined in the HNAP (see Box 6). Development of the adaptation component of the NDC may present an opportunity to refine or update national health adaptation priorities – it is recommended that this complements and supports the existing NAP or HNAP or other national adaptation planning processes, such as contributions to the Global Goal on Adaptation (Box 7). Extensive guidance on identifying and prioritizing adaptation measures for health and developing a comprehensive adaptation plan is available in the WHO Quality Criteria for Health National Adaptation Plans *(14)* (Box 7) and the WHO Guidance to Protect Health from Climate Change through Health Adaptation Planning *(18)*. See Table 2 earlier in this document for a summary of criteria for developing a high-quality HNAP.

Box 7. Quality criteria for HNAPs

Section 1: leadership and enabling environment

1.1 Ministry of Health leads HNAP development

1.2 Government endorsement/approval

1.3 Active engagement of the health sector in the process to formulate and implement the NAP

1.4 Climate-informed health planning and programming

Section 2: cross-sectoral coordination and policy coherence

2.1 Coordination and synergy with health-determining sectors

Section 3: comprehensive coverage of climate-sensitive health risks

3.1 Evidence-based HNAP

3.2 Comprehensive coverage of context-specific climate-sensitive health risks

3.3 Prioritization of climate-sensitive health risks

Section 4: comprehensive coverage of adaptation options and actions

4.1 Comprehensive adaptation options to address climate-sensitive health risks

4.2 Consideration of vulnerability factors to design and target adaptation actions

4.3 Prioritization of health adaptation actions

Section 5: resourcing

5.1 Estimation of the required resources for HNAP implementation

5.2 Resource mobilization strategy

Section 6: monitoring, evaluation and reporting

6.1 HNAP monitoring, evaluation and reporting plan

6.2 Mechanism for periodic HNAP iterations

The HNAP typically outlines the country-specific health impacts, risks and vulnerabilities of climate change identified in the climate change and health vulnerability and adaptation assessment. These could be included in the "National circumstances and policy priorities" section of the NDC outlined above and referred to or summarized in the adaptation section.

To further streamline national adaptation planning processes, countries can submit their adaptation communications as a component of, or in conjunction with, another document such as the NDC, NAP or national communication *(62–64)*. As part of the Paris Agreement, countries "submit and update periodically an adaptation communication, which may include information on its priorities, implementation and support needs, plans and actions" *(62)*. Guidance on developing an adaptation communication is provided in UNFCCC Decision 9/CMA.1 *(63)* and summarized in Annex 2. The UNFCCC synthesis of NDCs showed that 13% of countries considered the adaptation component of

their NDC to serve as their adaptation communication *(16)*. Submitting the adaptation communication in conjunction with the NDC presents an opportunity to integrate health.

Integration of health in the adaptation targets of health-determining sectors

It is critical to take a strong cross-sectoral approach in the adaptation section during the process to formulate and implement the NAP, and as part of the NDC process. Ministries of health and other health stakeholders should be engaged with sectors such as energy generation, food and agriculture, and water and waste management and national processes to ensure the health implications (benefits and potential harms) are considered in relevant sectoral adaptation targets and measures. Social and other determinants of health and equity perspectives are critical considerations for adaptation planning in all sectors to ensure meaningful protection and promotion of health.

Identification of synergies between mitigation and adaptation for health

Mitigation co-benefits and synergies should be highlighted in the adaptation section of the NDC *(6)*. For health adaptation, for example, numerous countries include the solarization of health-care facilities as a measure for providing critical energy access and increasing the climate resilience of their facilities, while at the same time reducing current or future emissions.

NDCs often assess and describe the alignment of adaptation actions with other international frameworks and conventions. For example, health adaptation efforts generally contribute to many of the SDGs and other national and subnational development goals, including universal health coverage, and contribute to the Sendai Framework *(65)*.

Box 8. Monitoring health progress towards the Global Goal on Adaptation

The 2015 Paris Agreement established the Global Goal on Adaptation to ensure an adequate adaptation response and to enhance adaptative capacity, strengthen resilience and reduce vulnerability to climate change, in the context of the mitigation goal of keeping temperature rises to a maximum of 2 °C or 1.5 °C *(7)*.

Health has been included as one of the thematic areas and targets of the Global Goal on Adaptation *(66)*. By defining this global goal, countries aim to monitor and capture progress on "enhanced adaptation" for health and other thematic areas, with a view to enhancing adaptation action and support *(67)*.

"The Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation outlines the following specific health target by 2030 … attaining resilience against climate change related health impacts, promoting climate-resilient health services, and significantly reducing climate-related morbidity and mortality, particularly in the most vulnerable communities" *(66)*.

The 2023 WHO Review of Health in NDCs found that many NDCs already include quantifiable metrics and targets for health adaptation actions and policies *(10)*. These national health targets help countries to effectively monitor progress towards ensuring healthy and resilient populations, and in turn can inform the global progress towards the Paris Agreement goals on adaptation, as captured in the Global Goal on Adaptation process.

The WHO Health and Climate Change Global Survey *(68)*, conducted every two to three years, and the related climate change and health country profiles *(69)*, provide a snapshot of climate change and health risks at the country level and of progress towards increased action on climate change and health. Other relevant sources of climate change indicators include the Lancet Countdown *(70)*, the Lancet Commission on Sustainable Healthcare *(71),* and the Organisation for Economic Co-operation and Development *(72)*.

The WHO Fourteenth General Programme of Work for 2025–2028 includes climate change and health as its first strategic priority *(73)*. This priority promotes two joint outcomes –building climate-resilient health systems and lower-carbon health systems and societies. WHO will report progress towards the achievement of these outcomes.

Example: Lao People's Democratic Republic

The NDC of the Lao People's Democratic Republic (*2021*) includes a detailed results-based framework for health adaptation, facilitating the effective design, implementation and monitoring of the country's long-term health adaptation objectives. With support from WHO, health adaptation targets for all 10 components of the WHO Operational Framework were included in the NDC, providing comprehensive coverage of health adaptation action areas. The NDC also commits to adaptation actions in health-determining sectors such as water, sanitation and hygiene, and includes dedicated targets on how interventions in these sectors will contribute to public health, gender equality and other development goals *(74)*.

Example: Uganda

The NDC of Uganda (*2022*) includes detailed health adaptation metrics, allowing the country to effectively monitor progress towards achieving its health adaptation goals. The NDC defines the ultimate outcome of Uganda's adaptation efforts as having a "sustainable resilient health sector" and sets out six health adaptation indicators with 2025 and 2030 targets. This includes the number of district-level climate health profiles developed (30 by 2030); the level of connection between the emergency medical call system and the national disaster response call system (100% by 2030); the number of climate-smart hospitals (seven by 2030); and the level of implementation of the HNAP (50% by 2030) *(75)*.

Useful resources

- NDC-NAP alignment. Winnipeg: NAP Global Network (https://napglobalnetwork.org/themes/ndc-nap-linkages/, accessed 19 September 2024).
- Operational framework for building climate resilient and low carbon health systems. Geneva: World Health Organization; 2023 (https://www.who.int/publications/i/item/9789240081888, accessed 19 September 2024).
- Climate change and health: vulnerability and adaptation assessment. Geneva: World Health Organization; 2021 (https://iris.who.int/handle/10665/345968, accessed 19 September 2024).
- Quality criteria for health national adaptation plans. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240018983, accessed 4 July 2024).
- WHO guidance for climate resilient and environmentally sustainable health care facilities. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/9789240012226, accessed 4 July 2024).
- WHO guidance to protect health from climate change through health adaptation planning. Geneva: World Health Organization; 2014 (https://iris.who.int/handle/10665/137383, accessed 29 July 2024).

Loss and damage to health

Quality criteria

- **Quantification of climate-sensitive health risks and outcomes, including in health systems and facilities**
- **Quantification of financial implications of health-related loss and damage**
- **Inclusion of priority interventions to avert, minimize and address loss and damage to health and health systems and facilities**

Climate change is having widespread social, economic, environmental and cultural impacts across the world. In the UNFCCC and the Paris Agreement, this is captured in the concept of loss and damage, referring to the destructive impacts of climate change that cannot be – or have not been – avoided by mitigation or adaptation *(76–78)*.

The Paris Agreement recognizes the importance of averting, minimizing and addressing the loss of life and damage to health and health systems caused by climate change. Various mechanisms have been established to respond to loss and damage, including the Warsaw International Mechanism for Loss and Damage, the Santiago Network, and the Loss and Damage Fund *(7)*.

The UNFCCC divides loss and damage into two broad categories *(79, 80)*:

- Economic losses – loss of resources, goods and services typically traded in economic markets.
- Noneconomic losses – losses not otherwise commonly part of economic markets at the individual (e.g. loss of life, loss of health or displacement), societal (e.g. loss of local knowledge or territory) or environmental (e.g. biodiversity degradation) levels.

Noneconomic losses are not always quantifiable in economic terms (e.g. loss of cultural identity), but they can have a financial impact *(76, 80)*. The impact of climate change on loss of life, health, well-being and health systems represents a profound noneconomic loss, the consequences of which are not felt equally among countries and communities *(9)*.

There is no dedicated UNFCCC guidance on the inclusion of information on loss and damage, but countries may include detailed information in their NDCs *(10)*. Information on loss and damage in the NDC may include climate impacts; country efforts to avert, minimize and address loss and damage from climate change; and financial considerations of loss and damage.

Although only 11% of countries include health-related loss and damage in their NDCs, a country's approach to loss and damage in its NDC is instrumental to comprehensively assess risks and vulnerabilities, specify financial needs, and mobilize increased ambition to implement climate and health goals *(10)*.

Quantification of climate-sensitive health risks and outcomes, including in health systems and facilities

Climate-sensitive health risks, including loss and damage, should be quantified. This may include loss of life as a result of climate extremes, and indirect loss and damage to health, such as mental health impacts related to loss of cultural heritage and way of life *(76)*. Examples of noneconomic losses to health are outlined in Fig. 10. Estimating the proportion of these risks attributable to climate change strengthens the quantification, but this is complex and may not be feasible in many cases.

Fig. 10. Examples of observed and potential noneconomic loss and damage to health and well-being

Resulting from

sudden and emergent events: heatwaves, storms, floods, landslides, hurricanes, cyclones, tsunamis, wildfires

slow-onset events: increasing mean temperature, drought, desertification, sea-level rise, ocean acidification, glacial retreat, loss of pollinators, habitat, and biodiversity, loss of land and forests, salinization

Impact		Health Condition	
		Acute and emergent	Slow-onset and chronic
Direct loss and damage	injury or trauma	✓ physical injury or death	✓ mobility impairment ✓ post-traumatic stress disorder
reduced	water quality	✓ water-borne disease ✓ drinking water scarcity ✓ decline in sanitation and hygiene	✓ increased incidence of vector-borne disease (e.g. mosquitoes transmitting malaria) ✓ increased incidence of water-related diseases (e.g. cholera) ✓ food safety risks from new pathogens and/or soil and water contaminants ✓ malnutrition
	air quality	✓ new-onset lung disease ✓ exacerbation of asthma or chronic obstructive pulmonary disease ✓ allergic response	✓ increased likelihood of adult lung disease ✓ heart attack, and/or stroke ✓ increased incidence of chronic allergies
	food availability	✓ food scarcity ✓ macronutrient deficiency	✓ dietary change ✓ micronutrient deficiency ✓ increased incidence of stunting and wasting ✓ increased susceptibility to diabetes, obesity, heart disease ✓ decreased cognitive development of children ✓ depression
Indirect loss and damage	✓ non-economic impacts of reduced agricultural productivity ✓ degradation to biodiversity and ecosystems ✓ loss or degradation to territory, cultural heritage/artifacts, indigenous or local knowledge ✓ loss of cultural way of life, and/or societal or cultural identity, loss of safety networks	✓ grief ✓ stress	✓ increased multidimensional vulnerability ✓ broad, negative impacts on social determinants of health ✓ dietary change ✓ depression ✓ anxiety ✓ solastalgia[a] ✓ loss of agency[b] ✓ loss of sense of place ✓ reduced social cohesion ✓ intimate partner violence ✓ decreased access to traditional medicines ✓ weakened immune systems

[a] Distress produced by environmental change. Also known as ecological grief.

[b] Agency is a component to psychological stability. It is the sense of control over one's own life, and faith in one's own ability to handle tasks andsituations.

Source: adapted from World Health Organization *(76)*.

Quantification of financial implications of health-related loss and damage

Estimates of the financial implications of loss and damage to health should be included. These can be included in overall national finance plans and funding requests, provide an estimate of the cost of inaction on climate change, and contribute to critical international climate negotiations (Box 9).

Box 9. Quantification of loss and damage for flooding in Pakistan and Brazil

Pakistan in 2022 *(81)* and Brazil in 2024 *(82)* experienced prolonged, severe flooding. Some aspects of the loss and damage from these extreme weather events were quantified (Table 4). They included direct health losses such as deaths and injuries, financial implications from crop losses, and other estimates likely to have indirect impacts on health such as displacement and road infrastructure damage.

Table 4. Loss and damage for flooding in Pakistan and Brazil

	Pakistan 2022	Brazil 2024
Number of people affected	**33 million**	**2.4 million**
Climate-sensitive health risks	**1600 deaths**	**806 people** injured **31 people** missing **182 deaths**
Financial implications (health-related)	US$ **2.3 billion** of crop losses	
Other	**2 million** houses destroyed 13 000 km of roads damaged	**575 people** displaced

Inclusion of priority interventions to avert, minimize and address loss and damage to health and health systems and facilities

Health-related loss and damage should be included in national efforts to avert, minimize and respond to loss and damage. A NAP Global Network report describes averting, minimizing and addressing loss and damage as "protecting and strengthening the resilience of communities, livelihoods and ecosystems in the face of climate change, ensuring they are safeguarded for future generations" *(83)*. Countries' efforts often include disaster and humanitarian responses, disaster risk reduction actions and adaptation measures (Box 10).

Specific interventions to address loss and damage to health should be identified and prioritized as part of the national response to loss and damage. Actions to avert and minimize loss and damage to health are, for the most part, covered by mitigation and adaptation measures, but specific actions need to be identified to address loss and damage to health (Fig. 11) *(84)*. This process should be aligned with, complement and harness national adaptation processes and national disaster risk management processes.

The NAP Global Network report highlights the critical importance of ensuring the loss and damage response does not duplicate adaptation efforts. Instead, it comprises actions addressing impacts that adaptation cannot tackle and will likely also involve compensation or restitution *(83)*. Actions to respond to loss and damage for health and health systems and facilities include quantifying health loss and damage for compensation or reparations, strengthening mental health services to manage climate change-related impacts, or using measures to preserve cultural heritage such as traditional medicines and foods.

Box 10. Recommendations: addressing loss and damage

The NAP Global Network report Addressing Loss and Damage: What Can We Learn from Countries' National Adaptation Plans? makes a series of valuable recommendations for aligning and leveraging NAP processes for loss and damage responses that are also applicable to the health sector *(83)*:

"1. Recognize the contribution of NAP processes in minimizing loss and damage. Essentially, NAPs are countries' plans for minimizing losses and damages. Continued and increased investment in NAP processes is critical if countries' efforts to minimize loss and damage are to be realized in an equitable and sustainable manner.

2. Build on the extensive work that has already been done by countries to assess risks and vulnerabilities through their NAP processes. Existing vulnerability and risk assessments should be the starting point for the assessment of loss and damage in particular countries.

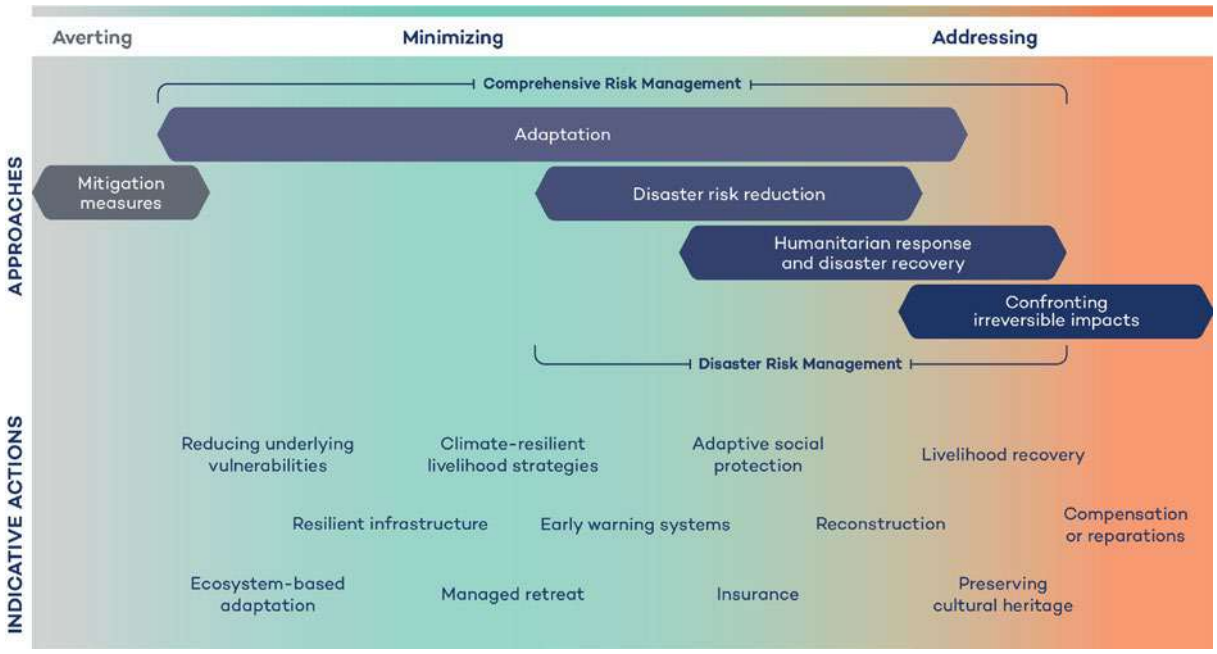
3. Support countries in assessing the potential for irreversible impacts. NAP documents contain limited information on scenarios beyond the limits of adaptation. Countries may need support to assess existential threats associated with climate change as a basis for identifying appropriate actions to respond to loss and damage.

4. Allow flexibility for countries to leverage their NAP processes for planning to address loss and damage. Countries may choose to capture and communicate their loss and damage needs through their NAP processes, and/or they may opt to conduct additional assessments and/or planning processes for loss and damage – both options should be made possible, particularly in accessing funding.

5. Focus efforts to address loss and damage on the impacts of climate change that go beyond adaptation limits. Efforts to address loss and damage must not replicate or take resources away from adaptation action. Instead, they should tackle the impacts that go beyond the limits of adaptation.

6. Collaborate and coordinate with the humanitarian system to avoid parallel systems and duplication of efforts. It is important for efforts to respond to loss and damage associated with climate hazards to be undertaken in collaboration not only with adaptation actors but also with humanitarian actors, both within countries and at the international level."

Fig. 11. NAP Global Network: spectrum of approaches to respond to loss and damage



Source: Qi, Dazé and Hammill *(83)*.

Example: Vanuatu

The NDC of Vanuatu (*2022*) includes specific loss and damage actions for health. It commits to providing continuing support for lifesaving and essential health care to populations affected by extreme weather and slow-onset events. This includes rapid measures to repair or rebuild health facilities damaged by extreme weather events, and to erect temporary health facilities, with particular attention on restoring WASH infrastructure. It estimates the upfront finance required for this response at US$ 25.4 million *(84)*.

Vanuatu's NDC includes a relocation policy, detailing its efforts to address the needs of people affected by climate-induced displacement – including people who are displaced or at risk of displacement, internal migrants, people living in informal settlements, and host communities – by enabling ministries to work together to provide protection for people at each stage of the displacement cycle. The impacts of climate change on migration, displacement and planned relocation are a key area of focus for loss and damage discussions in the UNFCCC, and a growing number of NDCs reference this *(10)*.

Example: Saint Kitts and Nevis

The NDC of Saint Kitts and Nevis (*2021*) provides an overview of the economic and noneconomic loss and damage that is already occurring in the country due to extreme weather events. It highlights damage to health infrastructure, the rise of vector- and waterborne diseases, mental health issues, and a decline in labour productivity due to extreme heat. Other noneconomic loss and damage highlighted in the NDC includes loss of culture, lifestyle, traditions and heritage; negative impacts on physical, mental and emotional well-being; loss of sense of place and identity; and a decline in self-determination, dignity and sovereignty *(85)*.

Useful resources

- Fiji Clearing House for Risk Transfer. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/process-and-meetings/bodies/constituted-bodies/executive-committee-of-the-warsaw-international-mechanism-for-loss-and-damage-wim-excom/fiji-clearing-house-for-risk-transfer, accessed 19 September 2024).
- Santiago Network. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/santiago-network, accessed 19 September 2024).
- Loss and damage: WHO policy brief. Geneva: World Health Organization; 2022 (https://cdn.who.int/media/docs/default-source/climate-change/who-unfccc-cop27-loss-and-damage.pdf?sfvrsn=b8a652a0_4&download=true, accessed 19 September 2024).

Finance for health

Quality criteria

- **Estimation of resources required to implement health-related actions and policies in the NDC, including in other sectors**
- **Specification of the conditionality of climate finance for health actions and plans[6]**
- **Use of health impacts and indicators as a basis to prioritize investments in key health-determining sectors**

Many NDCs include budgets, cost estimates and other financial information. This is critical to facilitate the implementation of activities and achievement of NDC targets *(10, 16)*. Dedicated guidance exists for some other finance reporting requirements under the UNFCCC, such as biannual finance communications, which can help inform a country's finance reporting in NDCs *(86)*. For example, 46% of NDCs include information estimates of financial support needs *(16)*, and 29% of NDCs allocate climate finance for health actions or plans *(10)*. NDCs often include information on other means of implementation beyond finance, including technology transfer and capacity-building, which are essential for achieving targets and implementing policies *(16)*.

Health priorities are often well documented in many NDCs and other national climate plans such as NAPs and HNAPs but not translated into action due to significant barriers, including insufficient finance *(87)*. Health is the sector for which climate finance needs are most frequently left unmet. Reviews of financial flows have indicated that approximately only 2% of adaptation funding and 0.5% of overall funding from multilateral climate finance sources is allocated to projects that explicitly aim to protect or improve human health *(9, 37)*. Scaling up financing of mitigation and adaptation for the health sector is needed urgently *(9, 88)*. Additionally, health finance (i.e. funding earmarked for the health sector) should be optimized for achieving a country's climate targets, such as by ensuring the activities it funds contribute to building more climate-resilient and sustainable health systems.

The countries most vulnerable to the impacts of climate change are often those with the highest burden of disease and reduced capacity and resources to adequately prepare for and protect against the scale of climate impacts they face *(1)*. If climate financing does not meet the level required, health inequities will be exacerbated at the global, regional and local levels.

Estimation of resources required to implement health-related actions and policies in the NDC, including in other sectors

To understand financing needs and to adequately allocate resources, it is necessary to estimate the cost of the health-related actions included in NDCs. These estimates should include other needs for implementation, including human resources, capacity-building, and technology transfer and development. It is recommended that the ministry of health works with other sectors to ensure

[6] A conditional contribution is one that a country would undertake if international means of support are provided or other conditions are met. An unconditional contribution is financed from domestic sources.

health-related actions across sectors are appropriately costed. This costing could include information related to domestic budget allocation for health-related actions, existing international sources of funding, and identification of funding gaps.

Specification of the conditionality of climate finance for health actions and plans

The identification of funding gaps will contribute to the determination of some actions as conditional, meaning these actions will be implemented only if international resources are provided or other conditions are met. These conditional actions and identified funding gaps can form the foundation of climate change and health funding proposals to climate finance funds, health funds, development banks, bilateral donors, philanthropic organizations and other donors.

Use of health impacts and indicators as a basis to prioritize investments in key health-determining sectors

Many countries will face a shortfall of resources to implement their NDCs. Given that the health and well-being of populations, communities and individuals is the ultimate goal and guiding principle of NDCs, health impacts and indicators should be used as the foundation for prioritizing investments. The results of the assessments of climate-sensitive health risks, health co-benefits, and health loss and damage recommended in earlier sections should be used in prioritization exercises to ensure investments prioritize actions that have clear climate change mitigation or adaptation impact and the greatest health benefits.

Example: Sierra Leone

The NDC of Sierra Leone (*2021*) includes an action plan with estimated indicative costs for all activities, including health actions. The need for international financing and domestic budget allocation is clearly highlighted in the NDC, and a summary of the resource mobilization approach is provided. The NDC specifies the conditionality of each strategy included in the action plan. Estimated budgets for the health sector actions are designated as 30% unconditional and 70% conditional on international climate finance *(89)*.

Useful resources

- Bridging the climate–health gap. Incheon: Green Climate Fund (https://www.greenclimate.fund/insights/bridging-climate-health-gap, accessed 19 September 2024).
- COP28. Guiding principles for financing climate and health solutions. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://www.cop28.com/en/guiding-principles, accessed 19 September 2024).
- A 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; 2023 (https://iris.who.int/handle/10665/367385, accessed 4 July 2024).
- Climate change and health: WHO tool to estimate health and adaptation costs. Geneva: World Health Organization (https://www.who.int/europe/tools-and-toolkits/climate-change-and-health---who-tool-to-estimate-health-and-adaptation-costs#:~:text=What%20does%20the%20tool%20do,national%20and%20subnational%20levels%3B%20and, accessed 19 September 2024).
- Finance for health and climate change. Geneva: World Health Organization (https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/country-support/finance-for-health-and-climate-change, accessed 19 September 2024).

Implementation and monitoring of health priorities in NDCs

Quality criteria

- **Development of a health-sector implementation and capacity-building plan**
- **Translation of relevant national mitigation and adaptation targets into health-sector targets, indicators and benchmarks**
- **Development of a health-sector monitoring and evaluation plan, and inclusion of health indicators in the overall NDC monitoring and evaluation framework**

The previous sections describe opportunities to articulate health targets and actions for concrete action areas in the NDC (e.g. mitigation, adaptation, finance, loss and damage), including health contributions to national targets. These targets and actions are often high-level and need to be broken down into a plan for implementation. This section suggests actions to achieve health targets across these action areas through effective implementation, collaboration and monitoring of progress.

The implementation section of the NDC may include the following elements at the sectoral level to help achieve the NDC targets: sectoral implementation plans, including translation of national targets to sectoral targets; cross-sectoral collaboration; international cooperation; and monitoring and evaluation of progress. It is helpful to clarify any existing efforts on implementation, collaboration and monitoring of progress in the NDCs to promote alignment and synergies *(90)*. Similar mechanisms may already be in place for the NAP or HNAP process.

Development of a health-sector implementation and capacity-building plan

Sectoral plans for the health sector and health-determining sectors describe how to implement the actions needed to achieve NDC targets. Sectoral implementation plans may be separate documents from the NDC, and these plans may be developed after the NDC is submitted. These plans could include *(90)*:

- a situation analysis of existing climate change and health work;
- an assessment of resource needs (this will also be used to describe the overall financial and other needs as outlined in the "Finance for health" section above);
- an assessment of capacity-building needs;
- identification and prioritization of activities to achieve the high-level targets and actions;
- timeframes for each activity;
- assigned responsibilities, including for the ministry of health and key health-determining sectors.

Synergy with existing plans such as NAPs, HNAPs and adaptation plans of health-determining sectors must be considered to avoid duplication and reduce burden. Health-sector implementation plans may already exist (e.g. an HNAP or action plan to develop a low-carbon health system), and it is important to incorporate these in the NDC health-sector implementation plan to ensure alignment and avoid duplication of efforts.

Translation of relevant national mitigation and adaptation targets into health-sector targets, indicators and benchmarks

The health-sector implementation plan will detail actions and activities to be implemented by the health sector and actions to be implemented by key health-determining sectors. Cross-sectoral action will be essential to achieve the health targets and policies described in the NDC. In addition to implementing policies related to adaptation and mitigation within the health sector, the ministry of health will need to take stock of national mitigation and adaptation targets that may have implications for the health sector. For example, a national target to achieve 100% renewable energy by 2050 will have significant implications for the health sector and will need to be translated into health-specific sectoral targets and actions.

Development of a health-sector monitoring and evaluation plan, and inclusion of health indicators in the overall NDC monitoring and evaluation framework

Countries are expected to transparently communicate the progress made on the targets and policies in their NDCs so that government institutions and other stakeholders can engage at appropriate times and support with implementation *(91)*. There are also UNFCCC monitoring processes that require input from parties on their progress towards actions in their NDCs and other national climate plans, such as the Global Stocktake and the Global Goal on Adaptation (see Box 8). The UNFCCC provides guidance to facilitate the communication of information captured in the NDCs through the Enhanced Transparency Framework *(92)*.

The development and implementation of an NDC monitoring and evaluation framework is managed by the lead agency for the NDC at the national level. It is recommended that the ministry of health is meaningfully engaged in the process and provides health-sector contributions. The ministry of health can strengthen health monitoring and evaluation of the NDC by contributing to the relevant UNFCCC processes that track global progress, such as the global stocktake and the Global Goal on Adaptation. Cross-sectoral collaboration is critical. As part of developing the monitoring and evaluation framework, it will be necessary to identify and designate the relevant ministries, agencies or independent bodies to assess health progress of NDC implementation across sectors, including through the collection, compilation and analysis of health and climate data. In many cases, monitoring will be part of broader efforts led by the ministry of health (e.g. through cross-sectoral climate change and health national steering groups) that feed not only into relevant UNFCCC planning and reporting processes but also into health and other health-determining sector strategic planning processes.

The health-sector implementation plan and monitoring and evaluation framework for the NDC should assign roles and responsibilities for achieving policies and targets, with a clear timeline, indicators and a mechanism to monitor progress. It is recommended that the overall NDC monitoring and evaluation framework considers, and ideally aligns with, existing health monitoring and surveillance systems and other climate and health monitoring processes, such as the HNAP monitoring and evaluation framework.

NDCs are expected to be updated regularly. Clear monitoring and reporting practices play a crucial role in the enhancement of NDCs over time.

Example: Ecuador

Ecuador submitted its first NDC in 2019 and then developed and adopted a whole-of-government NDC implementation plan with sectoral plans for 11 sectors, including health. The development was led by the Ministry of Public Health and focuses on the health adaptation section of the NDC. The sectoral implementation plans outline milestones, outputs, domestic funding and international support required to implement the NDC *(93)*.

Useful resources

- ATACH. Alliance for Transformative Action on Climate and Health (https://www.atachcommunity.com/, accessed 4 July 2024).
- Planning for NDC implementation: quick start guide and reference manual. Cape Town: Climate and Development Knowledge Network; 2016 (https://ndc-guide.cdkn.org/wp-content/uploads/2021/08/Quick-Start-Guide-Final-2016.pdf, accessed 4 July 2024).
- Quality criteria for health national adaptation plans. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240018983, accessed 4 July 2024).

Conclusion

The climate crisis is a health crisis. NDCs represent countries' ambitions to reduce greenhouse gas emissions and address the impacts of climate change, ultimately to protect the health and well-being of populations and future generations.

The integration of health in NDCs is critical to ensure health gains are maximized across sectors and potential unintended harms are minimized and to address the widespread health impacts of climate change.

This guidance was developed to support ministry of health staff, the health community and other health-determining sectors to identify and action key points for health leadership and health integration within the components of their countries' NDCs.

Enhancement of health integration in NDCs can strengthen the health sector's voice and participation in climate policy processes and raise the quality of NDCs. This will lead to NDCs that are more ambitious and better equipped to address the health impacts of climate change, support climate-resilient and low-carbon sustainable health systems, and identify and maximize the health co-benefits of climate action to better protect health in the face of climate change.

References

1. Climate change. Geneva: World Health Organization; 2023 (https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health, accessed 30 July 2024).
2. Climate change negotiations and health. Geneva: United Nations Institute for Training and Research (https://www.unitar.org/courses/climate-change-negotiations-and-health-7687, accessed 9 August 2024).
3. Jackson P. From Stockholm to Kyoto: a brief history of climate change. New York: United Nations; 2007 (https://www.un.org/en/chronicle/article/stockholm-kyoto-brief-history-climate-change, accessed 23 August 2023).
4. About the secretariat. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/about-us/about-the-secretariat, accessed 29 July 2024).
5. United Nations Framework Convention on Climate Change. New York: United Nations; 1992 (https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf, accessed 25 September 2024).
6. The Paris Agreement. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/process-and-meetings/the-paris-agreement, accessed 29 July 2024).
7. Paris Agreement. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2015 (https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf, accessed 20 February 2024).
8. UNFCCC resource guide for preparing the national communications of non-Annex I parties: module 1 – the process of national communications from non-Annex I parties. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2009 (https://unfccc.int/resource/docs/publications/09_resource_guide1.pdf, accessed 2 September 2024).
9. COP26 special report on climate change and health: the health argument for climate action. Geneva: World Health Organization; 2021 (https://iris.who.int/handle/10665/346168, accessed 4 July 20240).
10. 2023 WHO review of health in Nationally Determined Contributions and long-term strategies: health at the heart of the Paris Agreement. Geneva: World Health Organization; 2023 (https://iris.who.int/bitstream/handle/10665/372276/9789240074729-eng.pdf, accessed 10 July 2024).
11. Health in the Nationally Determined Contributions (NDCs): a WHO review. Geneva: World Health Organization; 2020 (https://iris.who.int/bitstream/handle/10665/330656/9789240000674-eng.pdf?sequence=1, accessed 4 July 2024).
12. Guidelines for National Adaptation Plans (NAPs): technical guidelines for the NAP process. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2012 (https://unfccc.int/topics/adaptation-and-resilience/workstreams/national-adaptation-plans-naps/guidelines-for-national-adaptation-plans-naps, accessed 23 August 2024).
13. Katowice climate package. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2019 (https://unfccc.int/process-and-meetings/the-paris-agreement/the-katowice-climate-package/katowice-climate-package, accessed 29 July 2024).
14. Quality criteria for health national adaptation plans. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240018983, accessed 4 July 2024).
15. Key aspects of the Paris Agreement. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/most-requested/key-aspects-of-the-paris-agreement, accessed 4 July 2024).

16. Nationally determined contributions under the Paris Agreement: synthesis report by the secretariat. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2023 (https://unfccc.int/documents/632334, accessed 29 July 2024).

17. Explaining the Paris Agreement Rulebook. Washington, DC: World Resources Institute; 2022 (https://files.wri.org/d8/s3fs-public/2022-10/unpacking-paris-rulebook-english.pdf, accessed 29 July 2024).

18. WHO guidance to protect health from climate change through health adaptation planning. Geneva: World Health Organization; 2014 (https://iris.who.int/handle/10665/137383, accessed 29 July 2024).

19. Nationally Determined Contributions (NDCs): the Paris Agreement and NDCs. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs, accessed 31 July 2024).

20. Global stocktake. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/topics/global-stocktake, accessed 29 July 2024).

21. Technical dialogue of the first global stocktake: synthesis report by the co-facilitators on the technical dialogue. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2023 (https://unfccc.int/documents/631600, accessed 29 July 2024).

22. Outcome of the first global stocktake. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2023 (https://unfccc.int/sites/default/files/resource/cma2023_L17_adv.pdf, accessed 29 July 2024).

23. National Adaptation Plans. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/topics/adaptation-and-resilience/workstreams/national-adaptation-plans, accessed 2 September 2024).

24. Long-term strategies portal. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/process/the-paris-agreement/long-term-strategies, accessed 20 February 2024).

25. Operational framework for building climate resilient and low carbon health systems. Geneva: World Health Organization; 2023 (https://www.who.int/publications/i/item/9789240081888, accessed 18 September 2024).

26. Sectoral implementation of nationally determined contributions (NDCs). Cologne: NewClimate Institute; 2017 (https://newclimate.org/resources/publications/sectoral-implementation-of-nationally-determined-contributions-ndcs, accessed 4 July 2024).

27. Alliance for Transformative Action on Climate and Health (ATACH). Geneva: World Health Organization (https://www.who.int/initiatives/alliance-for-transformative-action-on-climate-and-health, accessed 20 February 2024).

28. Promoting Health in All Policies and intersectoral action capacities. Geneva: World Health Organization (https://www.who.int/activities/promoting-health-in-all-policies-and-intersectoral-action-capacities, accessed 2 September 2024).

29. Climate change and health vulnerability and adaptation assessment. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240036383, accessed 4 July 2024).

30. Enhanced Nationally Determined Contribution: Republic of Indonesia. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2022 (https://unfccc.int/sites/default/files/NDC/2022-09/ENDC%20Indonesia.pdf, accessed 30 July 2024).

31. The explainer: the Paris Agreement. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/news/the-explainer-the-paris-agreement, accessed 29 July 2024).

32. Romanello M, Di Napoli C, Drummond P, Green C, Kennard H, Lampard P, et al. The 2022 report of the Lancet Countdown on health and climate change: health at the mercy of fossil fuels. Lancet. 2022;400(*10363*):1619–1654. doi:10.1016/S0140–6736(22)01540–9.

33. Pizarro-Irizar C, Phd A, González-Eguino M, Markandya A, Sampedro J, Smith SJ, et al. Health co-benefits from air pollution and mitigation costs of the Paris Agreement: a modelling study. Lancet Planet Health. 2018;2:e126–e133. doi:10.1016/S2542–5196(18)30029–9.

34. Tirado MC, Biesbroek GR, Pelling M, Hess J, Creutzig F, Kerr RB, et al. Co-benefits of climate actions for human health, wellbeing and equity. In: Pörtner HO, Roberts DC, Tignor M, Poloczanska ES, Mintenbeck K, Alegría A, et al., editors. Climate change 2022: impacts, adaptation and vulnerability. Cambridge: Cambridge University Press; 2022.

35. WHO manifesto for a healthy recovery from COVID-19: prescriptions for a healthy and green recovery from COVID-19. Geneva: World Health Organization; 2020 (https://www.who.int/news-room/feature-stories/detail/who-manifesto-for-a-healthy-recovery-from-covid-19, accessed 4 July 2024).

36. Milner J, Hamilton I, Woodcock J, Williams M, Davies M, Wilkinson P, et al. Health benefits of policies to reduce carbon emissions. BMJ. 2020;368:l6758. doi:10.1136/bmj.l6758.

37. COP24 special report: health and climate change. Geneva: World Health Organization; 2018 (https://www.who.int/publications/i/item/9789241514972, accessed 4 July 2024).

38. A 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; 2023 (https://iris.who.int/handle/10665/367385, accessed 4 July 2024).

39. Climate change 2022: impacts, adaptation and vulnerability. Working Group II contribution to the IPCC Sixth Assessment Report. Geneva: Intergovernmental Panel on Climate Change; 2022 (https://www.ipcc.ch/report/ar6/wg2/, accessed 4 July 2024).

40. Health impact assessment (HIA) methods. Geneva: World Health Organization; 2023 (https://www.who.int/tools/health-impact-assessments, accessed 23 August 2024).

41. Climate Change Mitigation, Air Quality and Health (CLIMAQ-H). Geneva: World Health Organization (https://www.who.int/europe/tools-and-toolkits/climate-change-mitigation--air-quality-and-health-(climaq-h), accessed 25 September 2024).

42. AirQ+: software tool for health risk assessment of air pollution. Geneva: World Health Organization (https://www.who.int/europe/tools-and-toolkits/airq---software-tool-for-health-risk-assessment-of-air-pollution, accessed 25 September 2024).

43. Health Economic Assessment Tool (HEAT) for walking and cycling. Geneva: World Health Organization (https://www.who.int/europe/tools-and-toolkits/health-economic-assessment-tool-for-walking-and-cycling, accessed 25 September 2024).

44. iSThAT: the Integrated Sustainable Transport and Health Assessment Tool. Geneva: World Health Organization (https://www.who.int/europe/tools-and-toolkits/isthat--the-integrated-sustainable-transport-and-health-assessment-tool, accessed 25 September 2024).

45. GreenUr: the Green Urban spaces and health tool. Geneva: World Health Organization (https://www.who.int/europe/tools-and-toolkits/greenur--the-green-urban-spaces-and-health-tool, accessed 25 September 2024).

46. Benefits of Action to Reduce Household Air Pollution (BAR-HAP) tool. Geneva: World Health Organization (https://www.who.int/tools/benefits-of-action-to-reduce-household-air-pollution-tool, accessed 25 September 2024).

47. Air pollution. Geneva: World Health Organization (https://www.who.int/data/gho/data/themes/theme-details/GHO/air-pollution, accessed 3 September 2024).

48. Climate change and health toolkit. Geneva: World Health Organization (https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/capacity-building/toolkit-on-climate-change-and-health/cobenefits, accessed 20 February 2024).

49. WHO global air quality guidelines: particulate matter (PM2.5 and PM10), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide – executive summary. Geneva: World Health Organization; 2021 www.who.int/publications/i/item/9789240034433, accessed 4 July 2024).

50. Target setting for low carbon sustainable health systems. Geneva: World Health Organization; 2021 (https://iris.who.int/handle/10665/377724, accessed 29 July 2024).

51. WHO guidance for climate resilient and environmentally sustainable health care facilities. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/9789240012226, accessed 4 July 2024).

52. Greenhouse Gas Protocol. Washington, DC: Greenhouse Gas Protocol (https://ghgprotocol.org/, accessed 20 February 2024).

53. First wins library. Geneva: Alliance for Transformative Action on Climate and Health (https://www.atachcommunity.com/resources/first-wins-library/, accessed 29 July 2024).

54. AKDN carbon management tool. Geneva: Aga Khan Development Network (https://www.atachcommunity.com/resources/resource-repository/aga-khan-development-networks-tool-to-calculate-health-operations-emissions/, accessed 2 September 2024).

55. Health benefits of raising ambition in Colombia's Nationally Determined Contribution (NDC): WHO technical report. Geneva: World Health Organization; 2023. (https://www.who.int/publications/i/item/9789240068834, accessed 4 July 2024).

56. LEAP. Stockholm: Stockholm Environment Institute (https://leap.sei.org/, accessed 19 September 2024).

57. Achieving health benefits from carbon reductions: manual for CaRBonH calculation tool. Geneva: World Health Organization; 2018 (https://www.who.int/europe/publications/i/item/WHO-EURO-2018-3005-42763-59659, accessed 25 September 2024).

58. Chile's Nationally Determined Contribution: update 2020. Santiago: Government of Chile; 2020 (https://unfccc.int/sites/default/files/NDC/2022-06/Chile%27s_NDC_2020_english.pdf, accessed 31 July 2024).

59. Republic of the Sudan: first Nationally Determined Contribution under the Paris Agreement – updated October 2021. Khartoum: Higher Council for Environment and Natural Resources of Sudan; 2021 (https://unfccc.int/sites/default/files/NDC/2022-10/Sudan%20Updated%20First%20NDC-12102021.pdf, accessed 31 July 2024).

60. Socialist Republic of Viet Nam: Nationally Determined Contribution (NDC) (updated in 2022). Hanoi: Government of Viet Nam; 2022 (https://unfccc.int/sites/default/files/NDC/2022-11/Viet%20Nam_NDC_2022_Eng.pdf, accessed 31 July 2024).

61. Using NDCs, NAPs and the SDGs to advance climate-resilient development. Washington, DC: NDC Partnership; 2021 (https://ndcpartnership.org/using-ndcs-naps-and-sdgs-advance-climate-resilient-development, accessed 2 September 2024).

62. Adaptation communications. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/topics/adaptation-and-resilience/workstreams/adaptation-communications, accessed 23 August 2024).

63. Decision 9/CMA.1. Further guidance in relation to the adaptation communication, including, inter alia, as a component of nationally determined contributions, referred to in Article 7, paragraphs 10 and 11, of the Paris Agreement. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2018 (https://unfccc.int/sites/default/files/resource/9-CMA.1_English.pdf, accessed 23 August 2024).

64. Ledwell C, Hammill A, Grey O. Leveraging the national adaptation plan process for adaptation communications. Winnipeg: NAP Global Network; 2023 (https://napglobalnetwork.org/resource/leveraging-naps-for-adcoms/, accessed 2 September 2024).

65. Fact sheet on Sustainable Development Goals (SDGs): health targets – climate change and health. Copenhagen: World Health Organization Regional Office for Europe; 2018 (https://iris.who.int/bitstream/handle/10665/340820/WHO-EURO-2018-2374-42129-58024-eng.pdf?sequence=1, accessed 31 July 2024).

66. Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation referred to in decision 7/CMA.3: revised draft decision CMA.4. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2022 (https://unfccc.int/documents/624436, accessed 4 July 2024).

67. Decision 7/CMA.3 Glasgow–Sharm el-Sheikh work programme on the global goal on adaptation. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2022 (https://unfccc.int/sites/default/files/resource/CMA2021_10_Add3_E.pdf, accessed 4 July 2024).

68. WHO health and climate change global survey. Geneva: World Health Organization; 2021 (https://www.who.int/data/gho/data/themes/topics/2021-who-health-and-climate-change-survey, accessed 4 July 2024).

69. Health and climate change country profiles. Geneva: World Health Organization; 2022 (https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/evidence-monitoring/country-profiles, accessed 2 September 2024).

70. The Lancet Countdown on health and climate change. London: The Lancet (https://www.thelancet.com/countdown-health-climate, accessed 2 September 2024).

71. Lancet Commission on Sustainable Healthcare (LCSH). New Haven, CT: Yale School of Public Health (https://ysph.yale.edu/yale-center-on-climate-change-and-health/healthcare-sustainability-and-public-health/lancet-commission-on-sustainable-health-care/, accessed 2 September 2024).

72. Climate change and health indicator development. Presented at the OECD Workshop on Climate Change and Health, Paris, 4 October 2023.

73. A77/16. Draft fourteenth general programme of work, 2025–2028. Geneva: World Health Organization; 2024 (https://apps.who.int/gb/ebwha/pdf_files/WHA77/A77_16-en.pdf, accessed 2 September 2024).

74. Lao People's Democratic Republic Nationally Determined Contribution. Vientiane: Government of the Lao People's Democratic Republic; 2021 (https://unfccc.int/sites/default/files/NDC/2022-06/NDC%202020%20of%20Lao%20PDR%20%28English%29%2C%2009%20April%202021%20%281%29.pdf, accessed 30 July 2024).

75. Republic of Uganda: updated Nationally Determined Contribution (NDC). Kampala: Ministry of Water and Environment of Uganda; 2022 (https://unfccc.int/sites/default/files/NDC/2022-09/Updated%20NDC%20_Uganda_2022%20Final.pdf, accessed 30 July 2024).

76. Loss and damage: WHO policy brief. Geneva: World Health Organization; 2022 (https://cdn.who.int/media/docs/default-source/climate-change/who-unfccc-cop27-loss-and-damage.pdf?sfvrsn=b8a652a0_4&download=true, accessed 4 July 2024).

77. Climate change 2023: synthesis report – summary for policymakers. Geneva: Intergovernmental Panel on Climate Change; 2023 (https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf, accessed 4 July 2024).

78. Introduction: loss and damage. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2023 (https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/introduction#loss-and-damage, accessed 4 July 2024).

79. Loss and damage: online guide. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2024 (https://unfccc.int/sites/default/files/resource/loss_and_damage_online_guide.pdf, accessed 31 July 2024).

80. Approaches to address loss and damage associated with climate change impacts in developing countries. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2023 (https://unfccc.int/topics/adaptation-and-resilience/workstreams/approaches-to-address-loss-and-damage-associated-with-climate-change-impacts-in-developing-countries, accessed 4 July 2024).

81. Nabeel R. Loss and damage: a perspective from Pakistan. Islamabad: Research Society of International Law; 2022 (https://rsilpak.org/wp-content/uploads/2023/12/Loss-and-Damage-Perspective-from-Pakistan.pdf, accessed 2 September 2024).

82. Pelissari D. Presentation at the fourth Health Working Group Meeting. Natal, Brazil: Ministry of Health of Brazil; 2024.

83. Qi J, Dazé A, Hammill A. Addressing loss and damage: what can we learn from countries' national adaptation plans? Winnipeg: NAP Global Network; 2023 (https://napglobalnetwork.org/resource/loss-and-damage-national-adaptation-plans/, accessed 26 August 2024).

84. Vanuatu's revised and enhanced 1st Nationally Determined Contribution 2021–2030. Port Vila: Government of Vanuatu; 2021 (https://unfccc.int/sites/default/files/NDC/2022-08/Vanuatu%20NDC%20Revised%20and%20Enhanced.pdf, accessed 30 July 2024).

85. St. Kitts and Nevis updated Nationally Determined Contribution. Basseterre: St Kitts and Nevis; 2021 (https://unfccc.int/sites/default/files/NDC/2022-06/St.%20Kitts%20and%20Nevis%20Revised%20NDC_Updated.pdf, accessed 30 July 2024).

86. Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the third part of its first session, held in Katowice from 2 to 15 December 2018. Addendum 1. Part two: action taken by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2019 (https://unfccc.int/documents/193407, accessed 23 August 2024).

87. 2021 WHO health and climate change global survey report. Geneva: World Health Organization; 2021 (https://iris.who.int/bitstream/handle/10665/348068/9789240038509-eng.pdf?sequence=1, accessed 29 July 2024).

88. Sectoral guide: health and wellbeing. Incheon: Green Climate Fund: 2022 (https://www.greenclimate.fund/document/sectoral-guide-health-wellbeing, accessed 4 July 2024).

89. The Republic of Sierra Leone: updated Nationally Determined Contribution (NDC). Freetown: Government of Sierra Leone; 2021 (https://unfccc.int/sites/default/files/NDC/2022-06/210804%202125%20SL%20NDC%20%281%29.pdf, accessed 30 July 2024).

90. Planning for NDC implementation: quick start guide and reference manual. Cape Town: Climate and Development Knowledge Network; 2016 (https://ndc-guide.cdkn.org/wp-content/uploads/2021/08/Quick-Start-Guide-Final-2016.pdf, accessed 4 July 2024).

91. Reporting and review. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/reporting-and-review, accessed 30 July 2024).

92. FAQ: moving towards the enhanced transparency framework. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2023 (https://unfccc.int/enhanced-transparency-framework, accessed 4 July 2024).

93. Ecuador expands NDC implementation. Washington, DC: NDC Partnership; 2020 (https://ndcpartnership.org/news/ecuador-expands-ndc-implementation, accessed 31 July 2024).

Bibliography

National circumstances and policy priorities

A 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; 2023 (https://www.who.int/publications/i/item/9789240057906, accessed 4 July 2024).

Climate change and health: vulnerability and adaptation assessment. Geneva: World Health Organization; 2021 (https://iris.who.int/handle/10665/345968, accessed 4 July 2024).

Health and climate change country profiles. Geneva: World Health Organization (https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/evidence-monitoring/country-profiles, accessed 2 September 2024).

Health in all policies: training manual. Geneva: World Health Organization; 2015 (https://iris.who.int/handle/10665/151788, accessed 19 September 2024).

Healthy environments for healthier populations: why do they matter, and what can we do? Geneva: World Health Organization; 2019 (https://iris.who.int/handle/10665/325877, accessed 19 September 2024).

SDG Climate Action Nexus Tool. Cologne: NewClimate Institute (https://ambitiontoaction.net/scan_tool/, accessed 19 September 2024).

World health statistics 2024: monitoring health for the SDGs, sustainable development goals. Geneva: World Health Organization; 2024 (https://iris.who.int/handle/10665/376869, accessed 19 September 2024).

Mitigation

Health co-benefits

A 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; 2023 (https://iris.who.int/handle/10665/367385, accessed 4 July 2024).

Climate change and health toolkit. Geneva: World Health Organization (https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/capacity-building/toolkit-on-climate-change-and-health/cobenefits, accessed 20 February 2024).

Health in the green economy: health care facilities. Geneva: World Health Organization; 2021 (https://www.who.int/publications/m/item/health-in-the-green-economy-health-care-facilities, accessed 19 September 2024).

Health in the green economy: health co-benefits of climate change mitigation – housing sector. Geneva: World Health Organization; 2011 (https://www.who.int/publications/i/item/9789241501712, accessed 19 September 2024).

Health in the green economy: health co-benefits of climate change mitigation – transport sector. Geneva: World Health Organization; 2012 (https://www.who.int/publications/i/item/9789241502917, accessed 19 September 2024).

Health in the green economy: occupational health. Geneva: World Health Organization; 2021 (https://www.who.int/publications/m/item/health-in-the-green-economy-occupational-health, accessed 19 September 2024).

Air quality targets

Air pollution data portal. Geneva: World Health Organization (https://www.who.int/data/gho/data/themes/air-pollution?lang=en, accessed 19 September 2024).

Ambient (outdoor) air pollution. Geneva: World Health Organization; 2024 https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health, accessed 19 September 2024).

Clean Household Energy Solutions Toolkit (CHEST). Geneva: World Health Organization (https://www.who.int/tools/clean-household-energy-solutions-toolkit, accessed 19 September 2024).

Health and Energy Platform of Action (HEPA). Geneva: World Health Organization (https://www.who.int/initiatives/health-and-energy-platform-of-action, accessed 19 September 2024).

Household energy policy repository. Geneva: World Health Organization (https://www.who.int/tools/household-energy-policy-repository, accessed 19 September 2024).

LEAP. Stockholm: Stockholm Environment Institute (https://leap.sei.org/, accessed 19 September 2024).

Pathfinder Initiative. London: London School of Hygiene & Tropical Medicine (https://www.lshtm.ac.uk/research/centres-projects-groups/pathfinder-initiative, accessed 19 September 2024).

Health-sector mitigation

Energizing health: accelerating electricity access in health-care facilities. Geneva: World Health Organization; 2023 (https://www.who.int/publications/i/item/9789240066960, accessed 19 September 2024).

First wins library. Geneva: Alliance for Transformative Action on Climate and Health (https://www.atachcommunity.com/resources/first-wins-library/, accessed 29 July 2024).

Global road map for health care decarbonization. Arlington, TX: Health Care Without Harm (https://healthcareclimateaction.org/roadmap, accessed 19 September 2024).

Operational framework for building climate resilient and low carbon health systems. Geneva: World Health Organization; 2023 (https://www.who.int/publications/i/item/9789240081888, accessed 19 September 2024).

Target setting for low carbon sustainable health systems. Geneva: World Health Organization; 2021 (https://iris.who.int/handle/10665/377724, accessed 29 July 2024).

WHO guidance for climate resilient and environmentally sustainable health care facilities. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/9789240012226, accessed 4 July 2024).

Health adaptation and climate resilience

Climate change and health: vulnerability and adaptation assessment. Geneva: World Health Organization; 2021 (https://iris.who.int/handle/10665/345968, accessed 19 September 2024).

NDC-NAP alignment. Winnipeg: NAP Global Network (https://napglobalnetwork.org/themes/ndc-nap-linkages/, accessed 19 September 2024).

Operational framework for building climate resilient and low carbon health systems. Geneva: World Health Organization; 2023 (https://www.who.int/publications/i/item/9789240081888, accessed 19 September 2024).

Quality criteria for health national adaptation plans. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240018983, accessed 4 July 2024).

WHO guidance for climate resilient and environmentally sustainable health care facilities. Geneva: World Health Organization; 2020 (https://www.who.int/publications/i/item/9789240012226, accessed 4 July 2024).

WHO guidance to protect health from climate change through health adaptation planning. Geneva: World Health Organization; 2014 (https://iris.who.int/handle/10665/137383, accessed 29 July 2024).

Loss and damage to health

Fiji Clearing House for Risk Transfer. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/process-and-meetings/bodies/constituted-bodies/executive-committee-of-the-warsaw-international-mechanism-for-loss-and-damage-wim-excom/fiji-clearing-house-for-risk-transfer, accessed 19 September 2024).

Loss and damage: WHO policy brief. Geneva: World Health Organization; 2022 (https://cdn.who.int/media/docs/default-source/climate-change/who-unfccc-cop27-loss-and-damage.pdf?sfvrsn=b8a652a0_4&download=true, accessed 19 September 2024).

Santiago Network. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://unfccc.int/santiago-network, accessed 19 September 2024).

Finance for health

A 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; 2023 (https://iris.who.int/handle/10665/367385, accessed 4 July 2024).

Bridging the climate–health gap. Incheon: Green Climate Fund (https://www.greenclimate.fund/insights/bridging-climate-health-gap, accessed 19 September 2024).

Climate change and health: WHO tool to estimate health and adaptation costs. Geneva: World Health Organization (https://www.who.int/europe/tools-and-toolkits/climate-change-and-health---who-tool-to-estimate-health-and-adaptation-costs#:~:text=What%20does%20the%20tool%20do,national%20and%20subnational%20levels%3B%20and, accessed 19 September 2024).

COP28. Guiding principles for financing climate and health solutions. Bonn: United Nations Framework Convention on Climate Change Secretariat (https://www.cop28.com/en/guiding-principles, accessed 19 September 2024).

Finance for health and climate change. Geneva: World Health Organization (https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/country-support/finance-for-health-and-climate-change, accessed 19 September 2024).

Implementation and monitoring of health priorities in NDCs

ATACH. Alliance for Transformative Action on Climate and Health (https://www.atachcommunity.com/, accessed 4 July 2024).

Planning for NDC implementation: quick start guide and reference manual. Cape Town: Climate and Development Knowledge Network; 2016 (https://ndc-guide.cdkn.org/wp-content/uploads/2021/08/Quick-Start-Guide-Final-2016.pdf, accessed 4 July 2024).

Quality criteria for health national adaptation plans. Geneva: World Health Organization; 2021 (https://www.who.int/publications/i/item/9789240018983, accessed 4 July 2024).

Annex 1. Checklist for integrating health in Nationally Determined Contributions

This checklist aims to support governments, policy-makers and stakeholders within the health community during the design, review and enhancement of Nationally Determined Contributions (NDCs). The checklist provides a set of guiding questions based on the quality criteria to be considered to strengthen an NDC through the inclusion of health considerations, commitments and actions.

The checklist is a reference and guide, but it is not intended to be prescriptive or complete. The checklist respects the country-driven nature of the United Nations Framework Convention on Climate Change (UNFCCC), in light of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC).

Table A1.1. Leadership and enabling environment

Within the NDC process and broader national climate change planning processes:	Yes	No	Partially	N/A
Does the ministry of health lead the health contribution to the NDC?				
Is the ministry of health actively engaged in cross-sectoral coordination?				
Is climate change integrated into national health planning and programming?				
Is the ministry of health actively engaged with key health-determining sectors in the development and implementation of relevant policies and targets in the NDC?				
Is health considered in the climate planning and programming of key health-determining sectors?				
Is there a coherence between national climate change and health policy process (e.g. NAP/HNAP process)?				

Table A1.2. Policy priority-setting for health

Does the NDC:	Yes	No	Partially	N/A
Consider the attainment of health and well-being for its population as the ultimate goal and guiding principle of the NDC?				
Describe the national health context?				
Include existing health policy priorities?				
Include existing legislative and regulatory mandate to protect and promote the health and well-being of its population in the face of a changing climate (e.g. include the human right to health, constitutional provisions, and regulations related to health impact assessments)?				
Identify health as a priority sector vulnerable to climate change?				
Describe the country's climate-sensitive health risks and vulnerable populations?				
Quantify current and projected climate-sensitive health risks?				

Table A1.3. Mitigation

Does the NDC:	Yes	No	Partially	N/A
Identify the potential health co-benefits that can be gained from its climate mitigation policies or targets, across key health-determining sectors?				
Quantify the health co-benefits that will be gained from mitigation policies or targets?				
Prioritize the climate mitigation policies or targets with the highest potential health co-benefits?				
Include standalone health-based targets for air pollution reduction in relevant sectoral plans?				
Include emissions reduction targets for health systems?				

Table A1.4. Health adaptation

Does the NDC:	Yes	No	Partially	N/A
Identify health as a priority sector for adaptation?				
Complement and support national approaches to adaptation planning and implementation (e.g. NAP/ HNAP process)?				
Include health adaptation actions or targets across all 10 components of the WHO Operational Framework for Building Climate Resilient and Low-carbon Health Systems?				
Component 1: climate-transformative leadership and governance				
Component 2: climate-smart health workforce				
Component 3: assessment of climate and health risks and greenhouse gas emissions				
Component 4: integrated risks monitoring, early warning and greenhouse gas emissions tracking				
Component 5: health and climate research				
Component 6: climate-resilient and low-carbon infrastructures, technologies and supply chain				
Component 7: management of environmental determinants of health				
Component 8: climate-informed health programmes				
Component 9: climate-related emergency preparedness and management				
Component 10: sustainable climate and health financing				
Integrate health in the adaptation targets of health-determining sectors?				
Identify synergies between mitigation and adaptation actions for health in the health sector and other health-determining sectors?				
Identify and promote considerations of equity and social determinants of health across sectors?				
Gender				
Children's health				
Sexual and reproductive health and rights				
Traditional knowledge systems				
Identify the synergies with the Sustainable Development Goals for health (Goal 3)?				
Identify synergies with other international frameworks and conventions?				

Table A1.5. Loss and damage to health

Does the NDC:	Yes	No	Partially	N/A
Identify specific climate-sensitive health risks or outcomes?				
Airborne and respiratory illnesses				
Heat-related illness				
Injury and mortality from extreme weather events				
Malnutrition and foodborne diseases				
Impacts to mental and psychosocial health				
Noncommunicable diseases				
Vector-borne diseases				
Waterborne diseases and other water-related health impacts				
Zoonoses				
Impacts on health systems and health-care facilities?				
Socially mediated health impacts (e.g. through conflict, migration or health inequities)				
Other				
Quantify climate-sensitive health risks and outcomes for its population?				
Refer to the concept of loss and damage in relation to the impacts of climate change on human health?				
Quantify the proportion of climate-sensitive health risks and outcomes that can be attributed to climate change?				
Quantify the financial implications of health-related loss and damage?				
Identify interventions to avert, minimize and address loss and damage to health?				

Table A1.6. Finance for health

Does the NDC:	Yes	No	Partially	N/A
Estimate the resources to implement the health actions and policies included in the NDC, including in other sectors?				
Specify the conditionality of climate finance for health actions or plans?				
Unconditional finance (percentage)				
Estimate needs for other means of implementation for climate and health actions (e.g. include capacity-building, technology transfer or development, or communication efforts for health)?				
Use health impacts and indicators to prioritize investments in key health-determining sectors?				

Table A1.7. Implementation

Does the NDC:	Yes	No	Partially	N/A
Include an implementation and capacity-building plan for the health sector?				
Does this implementation plan include:				
Gap analysis				
Assessment of resource needs				
Assessment of capacity-building needs				
Identification and prioritization of activities				
Timeframes				
Assigned responsibilities				
Include health-sector targets to contribute to national mitigation and adaptation targets?				
Include a health-sector implementation plan where the ministry of health leads the implementation of health-specific policies and targets and that defines the responsibilities of all relevant sectors?				
Include sectoral implementation plans for other sectors that define the responsibilities of the ministry of health?				
Include a health-sector monitoring and evaluation plan?				
Include health targets in the national NDC monitoring and evaluation framework?				

Annex 2. United Nations Framework Convention on Climate Change guidance on design and communication of Nationally Determined Contributions

The tables below provide an overview of guidance adopted by the United Nations Framework Convention on Climate Change (UNFCCC) to facilitate clarity, transparency and understanding of Nationally Determined Contributions (NDCs). This guidance is adapted from the Katowice Climate Package (Paris Rulebook) *(1)* and is based on decisions taken at the Conference of the Parties (COP) 21, COP24 and other UNFCCC meetings. Although this guidance is not specific to health, it can be used to inform health targets and policies included in the NDC.

Where possible, recommendations include a reference to the original mandate in the relevant article of the Paris Agreement (PA) or COP decision (CP). For the original UNFCCC decisions related to NDCs, see Annex 3.

Table A2.1. UNFCCC guidance on inclusion of information for mitigation section of NDCs[a]

Quantifiable information on reference point (including, as appropriate, a base year)
Reference year(s), base year(s), reference period(s) or other starting point(s)
Quantifiable information on reference indicators used, and their values in the reference year(s), base year(s), reference period(s) or other starting point(s), and, as applicable, in the target year
For strategies, plans and actions of least developed countries and small island developing states, or polices and measures as components of Nationally Determined Contributions that are not quantifiable, parties to provide other relevant information (as per Paris Agreement Article 4, Paragraph 6)
Target relative to reference indicator, expressed numerically (e.g. percentage or amount of reduction)
Information on sources of data used in quantifying reference point(s)
Information on circumstances under which party may update values of reference indicator
Timeframe or period for implementation
Timeframe or period for implementation, including start and end date, consistent with any further decision adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA)
Single-year or multi-year target, as applicable
Scope and coverage
General description of target
Sectors, gases, categories and pools covered by the NDC, including, as applicable, consistent with Intergovernmental Panel on Climate Change (IPCC) accounting guidelines
How the party has strived to include all categories of anthropogenic emissions or removals – and their sources, sinks and activities – in their NDCs; if, for any reason, they are not included provide an explanation why (as per 1/CP.21, Paragraphs 31c and d)

Mitigation co-benefits resulting from parties' adaptation actions or economic diversification plans, including descriptions of specific projects, measures and initiatives of parties' adaptation actions or economic diversification plans

Planning processes

Information on planning processes that the party undertook to prepare its NDC and, if available, on the party's implementation plans, including:

- domestic institutional arrangements, public participation and engagement with local communities and Indigenous Peoples, in a gender-responsive manner
- contextual matters, including, inter alia, as appropriate:
  - national circumstances, such as geography, climate, economy, sustainable development and poverty eradication
  - best practices and experiences related to preparation of the NDC
  - other contextual aspirations and priorities acknowledged when joining the Paris Agreement

Specific information applicable to parties, including regional economic integration organizations and their member states, that have reached an agreement to act jointly on their NDC (e.g. for the European Union, which acts on behalf of all its Member States) (as per Paris Agreement Article 4, Paragraphs 16–18)

How the party's preparation of its NDC has been informed by the outcomes of the global stocktake (as per Paris Agreement Article 4, Paragraph 9)

Each party with a NDC that consists of adaptation action or economic diversification plans resulting in mitigation co-benefits to submit information on:

- how the economic and social consequences of response measures have been considered in developing the NDC
- specific projects, measures and activities to be implemented to contribute to mitigation co-benefits, including information on adaptation plans that also yield mitigation co-benefits and economic diversification actions

Assumptions and methodological approaches, including for estimating and accounting for anthropogenic greenhouse gas emissions and removal

Assumptions and methodological approaches used for accounting for anthropogenic greenhouse gas emissions and removal corresponding to the party's NDC (as per 1/CP.21, Paragraph 31)

Assumptions and methodological approaches used for accounting for implementation of policies and measures or strategies in the NDC

If applicable, information on how the party will take into account existing methods and guidance under the UNFCCC to account for anthropogenic emissions and removal (as per Paris Agreement Article 4, Paragraph 14)

IPCC methodologies and metrics used for estimating anthropogenic greenhouse gas emissions and removal

Sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, including:

- approach to address emissions and subsequent removal from natural disturbances on managed lands
- approach to account for emissions and removal from harvested wood products
- approach to address effects of age-class structure in forests

Other assumptions and methodological approaches used for understanding the NDC and, if applicable, estimating corresponding emissions and removal, including: ▪ how the reference indicators, baseline(s) or reference level(s), including the sector-, category- or activity-specific reference levels, are constructed, such as key parameters, assumptions, definitions, methodologies, data sources and models used ▪ for parties with NDCs that contain non-greenhouse-gas components, information on assumptions and methodological approaches used in relation to those components ▪ for climate forcers included in NDC not covered by IPCC guidelines, information on how climate forcers are estimated ▪ further technical information, as necessary
Intention to use voluntary cooperation such as carbon markets, if applicable (as per Paris Agreement Article 6)
How the party considers that its NDC is fair and ambitious in light of its national circumstances
How the party considers that its NDC is fair and ambitious in light of its national circumstances
Fairness considerations, including reflecting on equity
How the party has addressed the requirement for each successive NDC to be a progression reflecting the highest possible ambition (as per Paris Agreement Article 4, Paragraph 3)
How the party has addressed the requirement for developed country parties to lead and for all parties to move towards economy-wide emission reduction targets (as per Paris Agreement Article 4, Paragraph 4)
How the party has addressed the provision for the special circumstances of least developed countries or small island developing states, if applicable (as per Paris Agreement Article 4, Paragraph 6)
How the NDC contributes towards achieving the objective of the Convention, namely to prevent dangerous anthropogenic interference with the climate system
How the NDC contributes towards achieving the objective of the UNFCCC (as per UNFCCC Article 2)
How the NDC contributes towards the goal of the Paris Agreement to limit global warming to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C, and to reach a global peaking of greenhouse gas emissions and rapid reductions thereafter (as per Paris Agreement Article 2, Paragraph 1(a) and Article 4, Paragraph 1)

[a] Based on UNFCCC decision 4/CMA.1.

Table A2.2. UNFCCC guidance on inclusion of information for the adaptation section of NDCs[a]

National circumstances, institutional arrangements and legal frameworks
Impacts, risks and vulnerabilities, as appropriate
National adaptation priorities, strategies, policies, plans, goals and actions
Implementation and support needs of, and provision of support to, developing country parties
Implementation of adaptation actions and plans, including: ▪ Progress and results achieved ▪ Adaptation efforts of developing countries for recognition ▪ Cooperation on enhancing adaptation at the national, regional and international levels, as appropriate ▪ Barriers, challenges and gaps related to implementation of adaptation ▪ Good practices, lessons learnt and information-sharing ▪ Monitoring and evaluation
Adaptation actions or economic diversification plans, including those that result in mitigation co-benefits
How adaptation actions contribute to other international frameworks or conventions
Gender-responsive adaptation action and traditional knowledge, knowledge of Indigenous Peoples and local knowledge systems related to adaptation, where appropriate
Any other information related to adaptation

[a] Based on UNFCCC decision 9/CMA.1.

Table A2.3. UNFCCC guidance on finance communication relevant to NDCs[a]

Enhanced information to increase clarity on projected levels of public financial resources to be provided to developing countries, as available
Indicative quantitative and qualitative information on programmes, including projected levels, channels and instruments, as available
Information on policies and priorities, including regions and geography, recipient countries, beneficiaries, targeted groups, sectors and gender-responsiveness
Information on purposes and types of support: mitigation, adaptation, cross-cutting activities, technology transfer and capacity-building
Information on factors that providers of climate finance look for in evaluating proposals to help inform developing countries
Indication of new and additional resources to be provided, and how it determines such resources as being new and additional
Information on national circumstances and limitations relevant to provision of ex ante information
Information on relevant methodologies and assumptions used to project levels of climate finance
Information on challenges and barriers encountered in the past, lessons learnt, and measures taken to overcome challenges
Information on how parties are aiming to ensure balance between adaptation and mitigation, taking into account country-driven strategies and the needs and priorities of developing country parties, especially those that are particularly vulnerable to the adverse effects of climate change and have significant capacity constraints, such as least developed countries and small island developing states, considering the need for public and grant-based resources for adaptation
Information on action and plans to mobilize additional climate finance as part of global efforts to mobilize climate finance from a wide variety of sources, including on the relationship between public interventions to be used and private finance mobilized

Information on how financial support effectively addresses the needs and priorities of developing country parties and supports country-driven strategies
Information on how support provided and mobilized is targeted at helping developing countries in their efforts to meet the long-term goals of the Paris Agreement, including by assisting them in efforts to make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development
Information on efforts to integrate climate change considerations, including resilience, into development support
Information on how support is to be provided to developing country parties enhances their capacities

[a] UNFCCC guidance for biannual finance communications to be provided by Parties in accordance with Article 9, Paragraph 5 of the Paris Agreement. This guidance does not strictly apply to NDCs but could inform their development and implementation.

Table A2.4. Elements in the Paris Agreement referring to NDCs[a]

What does the Paris Agreement say on NDCs?
Article 3 calls for ambitious NDCs, representing progression over time, and recognizes the need to support developing country parties for their effective implementation
Article 4 goes into greater detail on the structure of the NDC process, including that: ▪ Each party shall prepare, communicate and maintain successive NDCs (Article 4.2) ▪ Successive NDCs will represent a progression beyond the party's current NDC, and reflect its highest possible ambition, in light of common but differentiated responsibilities and respective capabilities (CBDR-RC) (Article 4.3) ▪ Developed country parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets, with developing countries encouraged to move towards such targets over time (Article 4.4) ▪ Support shall be provided to developing country parties for the implementation of NDCs (Article 4.5) ▪ The country groupings of least developed countries and small island developing states, which are particularly vulnerable to the impacts of climate change, have the flexibility to prepare and communicate strategies, plans and actions for low greenhouse gas emissions development rather than fully fledged NDCs (Article 4.6) ▪ All parties shall provide the information in their NDCs necessary for clarity, transparency and understanding (Article 4.8) ▪ Each party shall communicate a NDC every five years (Article 4.9), which will be recorded in a public registry maintained by the UNFCCC Secretariat (Article 4.12) ▪ Parties shall promote environmental integrity, transparency, accuracy, completeness, comparability and consistency, and ensure the avoidance of double-counting in accounting for their anthropogenic emissions and removals in their NDCs (Article 4.13)
Article 6 discusses "voluntary cooperation" in the implementation of NDCs, including through "internationally transferred mitigation outcomes", a market-based emissions trading mechanism, and non-market approaches for collaborative climate actions
Article 7 states, among other things, that adaptation efforts can be part of, or submitted in conjunction to, NDCs and other communications to the UNFCCC (Article 7.11)
Article 13 lays out a framework of transparency, necessary to provide a clear understanding of global climate change action, including through clear and regular communication from parties and tracking of progress towards achieving their NDCs (Article 13.7(b))
Article 14 calls for a global stocktake every five years to assess collective progress and inform the next round of NDCs

[a] Based on UNFCCC decision 1/CP.21.

Reference

1. Katowice climate package. Bonn: United Nations Framework Convention on Climate Change Secretariat; 2019 (https://unfccc.int/process-and-meetings/the-paris-agreement/the-katowice-climate-package/katowice-climate-package, accessed 29 July 2024).

Annex 3. United Nations Framework Convention on Climate Change decisions relevant to Nationally Determined Contributions

Decision	Title	Source
1/CMA.3	Glasgow Climate Pact	https://unfccc.int/documents/460950
1/CMA.2	Chile Madrid Time for Action	https://unfccc.int/documents/210477
20/CMA.1	Modalities and procedures for the effective operation of the committee to facilitate implementation and promote compliance referred to in Article 15, Paragraph 2, of the Paris Agreement	https://unfccc.int/documents/193408
18/CMA.1	Modalities, procedures and guidelines for the transparency framework for action and support referred to in Article 13 of the Paris Agreement	https://unfccc.int/documents/193408
10/CMA.1	Modalities and procedures for the operation and use of a public registry referred to in Article 7, Paragraph 12, of the Paris Agreement	https://unfccc.int/documents/193407
9/CMA.1	Further guidance in relation to the adaptation communication, including, inter alia, as a component of nationally determined contributions, referred to in Article 7, Paragraphs 10 and 11, of the Paris Agreement	https://unfccc.int/documents/193407
5/CMA.1	Modalities and procedures for the operation and use of a public registry referred to in Article 4, Paragraph 12, of the Paris Agreement	https://unfccc.int/documents/193407
4/CMA.1	Further guidance in relation to the mitigation section of decision 1/CP.21	https://unfccc.int/documents/193407
1/CP.21	Adoption of the Paris Agreement	https://unfccc.int/documents/9097

Annex 4. Process and methods

Development of the quality criteria

This guidance presents key entry points for health integration in Nationally Determined Contributions (NDCs). The quality criteria were informed by the two previous WHO reviews of health in NDCs[7, 8]; and key WHO guidance documents on climate change and health[9, 10, 11]. The development of the quality criteria was also based on WHO's leadership and experience in the field, including experience gained from supporting countries since 2012 in such activities as developing and implementing climate change and health plans and interventions; and international climate change processes, including over 20 years of participation in the UNFCCC Conference of the Parties.

These criteria provide further details on the NDC process and document, to assist countries in developing comprehensive, feasible and implementable actions for health across all key health-determining sectors. Experiences from countries that have begun the process, started integrating health in their NDC, and/or started implementation, serve as a base for shared learning. The criteria are also intended to guide countries in setting the foundation for ongoing engagement of the health sector in national and international climate change processes. The proposed criteria are not prescriptive and should be adapted to dynamic country contexts, uncertain and changing climatic conditions, and new knowledge and technologies. Country case studies are incorporated throughout the document to demonstrate various practical applications of the criteria.

Expert review

The document was reviewed by internal WHO experts across various relevant technical areas and by one external expert. Feedback and comments provided by reviewers were assessed for relevance, feasibility, and alignment with WHO guidance documents and policies and incorporated in the final manuscript as appropriate.

Management of conflicts of interest

The external expert submitted to WHO a declaration of interest disclosing potential conflicts of interest that might affect, or might reasonably be perceived to affect, their objectivity and independence in relation to the subject matter of the meeting / guidance. WHO reviewed the declaration and concluded that none could give rise to a potential or reasonably perceived conflict of interest related to the subjects covered by the guidance.

---

7 Health in the Nationally Determined Contributions (NDCs): a WHO review. Geneva: World Health Organization; 2020

8 2023 WHO review of health in Nationally Determined Contributions and long-term strategies: health at the heart of the Paris Agreement. Geneva: World Health Organization; 2023.

9 Quality criteria for health national adaptation plans. Geneva: World Health Organization; 2021

10 Operational framework for building climate resilient and low carbon health systems. Geneva: World Health Organization; 2023.

11 WHO guidance for climate-resilient and environmentally sustainable health care facilities. Geneva: World Health Organization; 2020.

World Health Organization
Department of Environment, Climate Change and Health
20 Avenue Appia
CH-1211 Geneva 27
Switzerland
www.who.int/teams/environment-climate-change-and-health