



W

wellcome

Designing global indicators

The need for Health Equity

Table of contents

Designing global indicators	3
Part 1: Principles for health-informed indicators	5
Part 2: Global indicators for prioritisation	8
Indicator 1	9
Indicator 2	10
Indicator 3	10
Indicator 4	11
Indicator 5	11

Designing global indicators



A well-designed Global Goal on Adaptation (GGA) will be a powerful tool, one that is urgently needed to elevate adaptation within the international climate negotiations, and drive adaptation action at a global level. For the indicators to be well-designed, they must prioritise health outcomes and health equity; doing so will reduce the risk of maladaptation, improve adaptation outcomes, and reduce

vulnerabilities to climate change, ultimately protecting the wellbeing and lives of communities across the globe.

We highlight five principles that Parties should embed within indicators – both thematic and dimensional under the Global Goal on Adaptation (GGA) to ensure health equity and positive health outcomes are prioritised in their design. We also

identify five global indicators which should be prioritised for selection under the GGA to support strong action on adaptation, with health equity at its core.

The WHO states that ‘health equity is achieved when everyone can attain their full potential for health and wellbeing’¹. However, climate change is threatening to reverse decades of progress by exacerbating existing health inequalities and creating new health challenges². The need and urgency for action to protect human health is already globally recognised within [the COP28 UAE Declaration on Climate and Health](#), [the WHO 14th General Programme of Work \(GPW14\)](#), and the right to health is enshrined within [the Paris Agreement](#) – but we are yet to see substantial progress.

Climate change impacts health both directly and indirectly. This includes death and disease due to heatwaves and other extreme health events, vector-borne disease, water insecurity, malnutrition, and a range of mental health impacts³. The health risks and impacts of climate change will worsen with every increase in global temperature. However, adaptation action remains insufficient with countries and communities already facing record breaking threats to wellbeing, human health, and survival⁴. This means immediate adaptation action is required alongside mitigation efforts to protect populations from severe health consequences⁵.

The lack of clear shared vision of what success looks like for adaptation is hampering progress, making the definition of globally relevant targets and metrics to assess adaptation progress an urgent global challenge⁶.

The GGA and the road to COP30

At COP28, the UAE Framework for Global Climate Resilience (UAE FGCR) was agreed as the next step forward for the GGA, establishing eleven targets to enhance adaptation action and support including a strong health target. By COP30, under the UAE-Belém work-programme, Parties will have agreed indicators to measure progress against these targets.

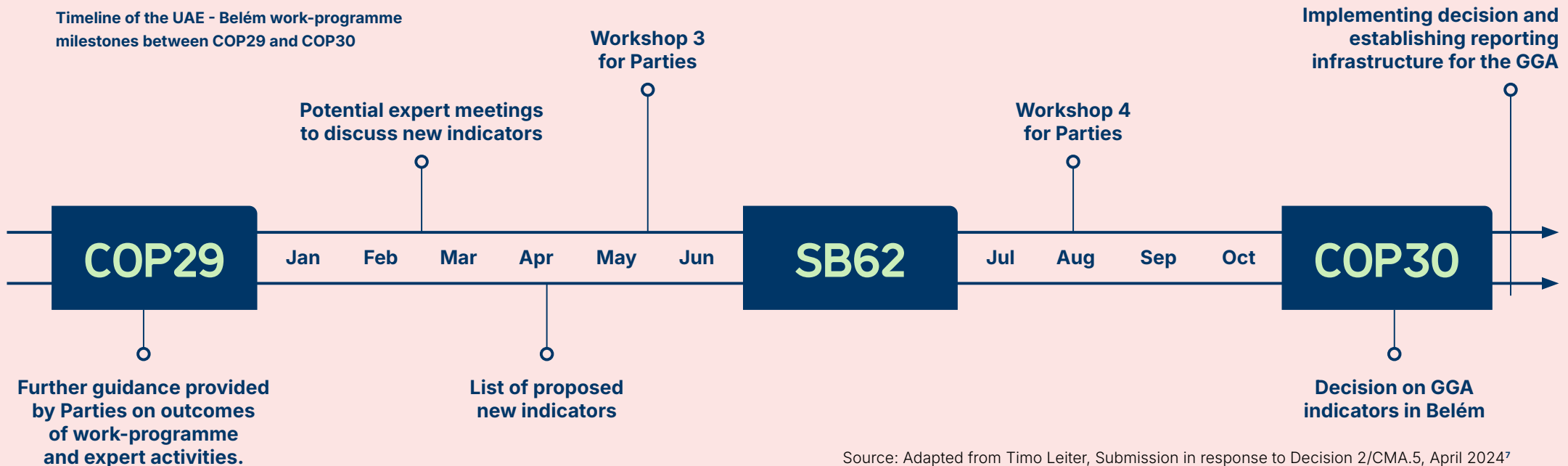
It is critical these indicators are ambitious, clear, and rigorous to drive action to support countries and the global community to prioritise resources more effectively. If achieved, this set of indicators will provide much-needed direction towards meaningful adaptation.

Over the next twelve months, we will seek to assist the conclusion of the work-programme at COP30 so that it results in a suite of indicators which have the power to protect and bolster health equity within adaptation. This will include efforts to support and foster collaboration between experts and Parties so that indicators can be country-led with a strong technical foundation.

It is important to recognise that we aren't starting from scratch. Other global indicator frameworks are already operational, collecting and reporting data on health e.g., Sustainable Development Goals (SDGs) and the UNDRR Sendai Framework

as well as a wealth of research conducted on suitable climate and health indicators represented within [Lancet Countdown on Health and Climate Change](#), and the ongoing work of the WHO on the GPW14.

This policy briefing highlights relevant indicators within these existing frameworks and draws on information from Parties and stakeholders' submissions in July to highlight how health can be prioritised through Parties and experts work over the next twelve months.



Source: Adapted from Timo Leiter, Submission in response to Decision 2/CMA.5, April 2024⁷

Part 1: Principles for health-informed indicators

Positive health outcomes and health equity must be prioritised within the design and delivery of indicators under the GGA. This will reduce the risk of maladaptation, improve adaptation outcomes, and reduce vulnerabilities to climate change. To ensure the GGA delivers positive outcomes for health and has health equity at its core, Parties must embed the following five principles across the targets of the GGA:

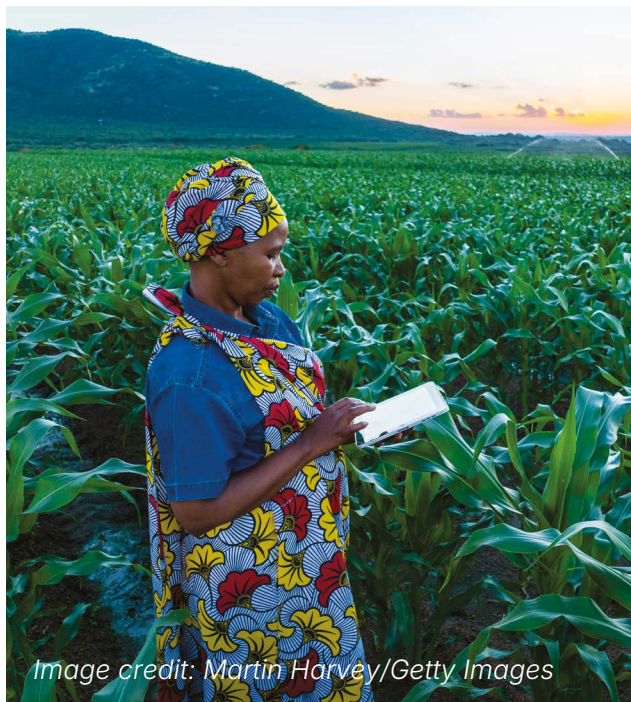


Image credit: Martin Harvey/Getty Images

5 principles for health informed indicators

1. Indicators across thematic and dimensional targets should measure health outcomes, with health equity embedded throughout indicator methodology.
2. Global and regional indicators are needed to account for the difference in climate induced health threats between countries and regions, while also allowing measurement of collective progress in building resilience.
3. To be adaptation relevant, indicators should be climate informed.
4. Indicator development should be evidence based and include the worldviews and values of Indigenous People and local and traditional knowledge.
5. Indicator discussion and development should consider means of implementation.

1. Indicators across thematic and dimensional targets should measure health outcomes, with health equity embedded throughout indicator methodology.

Ensuring adaptation action is embedded in the healthcare sector is key and should be monitored as part of the GGA. However, it is insufficient to fully protect public health in isolation as good physical and mental health are underpinned by multiple interacting sectors including food, water, infrastructure and transport. Having access to safe and potable water, for example, is essential for human health and wellbeing.

To ensure positive health outcomes are prioritised across sectors, the following principles should be embedded across the indicators:

- a. **Indicators should enable the identification and measurement of inequalities affecting vulnerable and disproportionately affected populations.** Parties have already highlighted the importance of disaggregated data under paragraph 12 (d) of the SB60 Draft Conclusions. For health equity, this is vital to allow assessment of progress in providing resilience to vulnerable and marginalised populations from the health impacts of climate change.

a. **Indicators should measure adaptation actions and outcomes to enhance resilience and reduce vulnerability to climate hazards and impacts, extending beyond only measuring these hazards and impacts.** This allows an assessment of progress to protect health from climate change and modification of approaches where required to ensure adaptation action delivers equitable outcomes for human health and wellbeing.

b. **Indicators should not inadvertently incentivise maladaptation including the risk of long-term damage to health by prioritising short-term development or adaptation gains.** Since health is determined by action across sectors, maladaptation in a health-determining sector can also damage health. To address this, different thematic experts should review indicators under other targets to support the identification of trade-offs or unintended consequences from the different indicators.

2. Global and regional indicators are needed to account for the difference in climate induced health threats between countries and regions, while also allowing measurement of collective progress in building resilience.

As climate induced health threats vary significantly between countries and regions, it is not essential for all indicators to be monitored by all Parties. In addition, excessive global aggregation in indicator reporting risks masking needs of individual countries and may distort priorities or specific vulnerabilities which need to be addressed⁸.

A combination of global indicators applicable to all Parties alongside specific regional ones reflective of the context specific nature of climate impacts, would be valuable.

Regional indicators allow the development of a comprehensive understanding of adaptation progress within a region experiencing or anticipating similar climate and health impacts.

This can enable a coordinated policy response across the region and targeted resource allocation within the region. For example, infectious disease risks and required responses are highly variable across and within regions and require different indicators with different methodologies depending on the specific risk. [The Lancet Countdown on Climate and Health](#) recognised this need and established specific “regional hubs” with regionally specific indicators to capture this variation.

Global indicators remain valuable in understanding collective adaptation progress in protecting human health from climate risks and impacts.

They will also be vital in tracking progress under the Global Stocktake, as required under the Paris Agreement, the second of which will take place in 2028. Specifically, global indicators allow the monitoring of attributes for resilience which are relevant to adaptation policy approaches (e.g. the accessibility of climate services) or within a specific sector (e.g. inclusion of health within National Adaptation Plans).

3. To be adaptation relevant, indicators should be climate informed.

Adaptation relevance is a core criterion for the indicators to be assessed against, as highlighted under paragraph 12 of the SB60 Draft Conclusion. To ensure action is adaptation relevant, one needs to know the history of the climate in context and what the future climate will likely be in that location over multiple decision timeframes – months, years, decades.

Locally relevant climate information is needed to inform what actions are required to protect human health and strengthen resilience of the infrastructure which underpins human health. This will ensure that when progress of an indicator is measured, it reflects progress in providing resilience against observed and forecasted climate – a central component of adaptation. This will allow health decision makers to understand progress and inform policy that can protect communities’ months, seasons and even years ahead. To support this, the availability and accessibility of climate services are critical.

To achieve this, existing health indicators under frameworks like the SDGs or Sendai Framework, may require modification to ensure they are adaptation relevant, and that the methodology incorporates timely and robust climate data and projections.

4. Indicator development should be evidence based and include the worldviews and values of Indigenous People and local and traditional knowledge.

The UAE FCGR already requests that indicators consider the best available science and traditional knowledge, Indigenous Peoples knowledge, and local knowledge systems under the criteria outlined in para 12 of the SB60 Draft Conclusions on the GGA. However, both experts and Parties have recognised the challenges in defining these criteria and reaching consensus for how these should apply.

In the absence of clear guidance on how these criteria apply, Parties should consider the following:

- a. Indicators should and can be guided by agreed methodology and definitions where available.** The Sustainable Development Goals (SDGs) tackle this problem by providing metadata under each indicator, with a transparent framework for updating methodology when required, which GGA design can learn from. Health knowledge should also be prioritised to ensure health equity remains a strong principle in delivery of adaptation action.
- b. The GGA should integrate indigenous peoples' and local and traditional knowledge, ensuring there are routes for these to inform the design of indicators and adaptation strategies emerging from the GGA.** To enable this, the GGA must promote the active inclusion of Indigenous Peoples' and local communities in decision making and designing adaptation solutions⁹.

5. Indicator discussion and development should consider means of implementation.

As parties collectively decide on indicators, means of implementation should be considered with specific reflection on the capacity, capability and resource of countries to begin data collection and reporting on the selected indicators. This cannot wait until after the indicators have been selected as it may influence the final outcomes of the work-programme.

In developing means of implementation for the indicators, Parties should consider the following:

- a. Tiered indicators** could be presented for each target reflecting the different capacity of Parties for reporting in the immediate term, as well as the available infrastructures and tested methodology for reporting on specific areas.
- a. Additional supplementary indicators could be identified where reporting capacity is stronger and as methods and capacity improves. Again, lessons can be learned from the framework established under the SDGs where methodological development and data readiness of each indicator are assessed and updated periodically.

“To achieve this, existing health indicators under frameworks like the SDGs or Sendai Framework, may require modification to ensure they are adaptation relevant, and that the methodology incorporates timely and robust climate data and projections.”

- b. Drawing on existing monitoring frameworks** should be prioritised where possible to reduce reporting burden on Parties such as relevant indicator under UNDRR Sendai Framework, SDGs and WHO Global Survey.
- c. Assessment is needed to ensure indicators** which are selected from different frameworks are sufficiently adaptation relevant and climate informed, and methodologies adjusted where feasible.
- d. The custodian agency or agencies** responsible for supporting at the country level to collate the data and hold the central database for targets needs to be considered and discussed in advance of COP30.
- e. For example, the SDGs have different custodian agencies** to oversee different targets. A similar model may be suitable under the GGA given the diversity of targets which need to be monitored. However, to avoid coordination and fragmentation challenges, Parties should consider nominating a lead agency with a clear mandate to manage and coordinate reporting¹⁰. Resource will be required to support this.

Part 2: Global indicators for prioritisation

As mentioned, global indicators are vital in tracking progress under the Global Stocktake. There are existing and globally applicable indicators measuring the key actions, attributes and capabilities countries need to protect human health that can be incorporated in thematic targets 9 (a) – (g) and the dimensional policy targets 10 (a) – (d) which are highlighted below.

These indicators were selected because of their global applicability and their ability to promote and deliver positive health outcomes and health equity if measured and implemented effectively. We consider these indicators critical for prioritisation and selection under the UAE Belém work-programme to ensure health equity is reflected and measured as part of adaptation action.

Given the variation of health impacts of climate change across regions, a diverse range of regional indicators is required to track progress to protect health across regions. It is important to note that the indicators presented (top right) do not represent a complete list of suitable global indicators for health. Indicators which specifically monitor individual and population health also need further consideration and there are many more potential indicators outlined in the [GGA health submission from June](#) as well as the WHO submission on indicators for GWP14. Further assessment and subsequent modification of the indicators will be needed to ensure they align with the criteria for GGA indicators as outlined in paragraph 12 of the Draft Conclusion and can adequately support the principles of the GGA.

To note: The World Health Organisation are developing Climate Resilience Indicators for Health Systems based on the WHO Operational Framework for Climate Resilient and Low Carbon Health System as part of the 14th General Programme of Work 14 (GPW14) which are due to be finalised imminently. Many of the indicators under this framework would also be applicable to target 9 (c) and some are specifically highlighted below.

Indicator 1

Number of countries where climate services are available and accessible and are being used within countries to predict health risks and to support adaptation responses.

Relevance: Target 9 (c) Target 10 (a).

Climate information and services are fundamental for adaptation as they provide the core information on the climate risks that adaptation responses are designed to mitigate¹¹. They are indispensable for multiple adaptation policy tools including the evaluation of climate sensitive health outcomes – early warning systems, risk assessments (including insurance), disaster risk reductions, climate sensitive disease prevention as well as national infrastructure planning.

Under the GGA, we need an indicator which monitors the capacity and capability of all countries to use, interpret and respond proactively to climate information and forecasts/projections to protect human health and wellbeing. We support the indicators recommended and tracked by the World Meteorological Organisation (WMO), [as highlighted in their submission](#). We request parties to consider a tiered indicator approach, to reflect the varying levels of existing capacity for climate services across parties. Examples of tiered indicators include:

Indicator 1.1: Basic weather and climate data are collected and internationally exchanged.

The availability of basic climate data is critical to allow countries to understand and respond to climate risks. However, there remains significant gaps in the availability and coverage of basic climate and weather observation in certain regions including many African countries and Small Island Developing States¹². This limits countries' capacity to understand and adapt to relevant climate hazards, limiting their adaptive capacity and ability to build climate resilience. Parties to the WMO agreed to establish the Global Basic Observing Network (GBON) which sets basic criteria for the generation and international exchange of global weather and climate data. Countries report against these criteria within the GBON compliance. This reporting could be expanded to the GGA with an indicator to track a foundational component of adaptive capacity for Parties.

Indicator 1.2: Climate services are available and accessible for decision makers to support policy and planning for health.

Once countries have the basic availability of climate observation services, assessment is needed on whether they can use climate services to support policy and planning in the health sector. The health sector currently underutilises climate information in how it makes its decisions, despite being identified as key to public health efforts. The availability of climate services does not guarantee the useability of these services for the health sector, with discrepancies in the temporal and spatial scale of climate data to allow it to be integrated within the health decision making.

The WMO has previously assessed the capacity of national meteorological services to provide climate and weather service functionalities to health service actors under the [State of Climate Services for Health report](#) and associated survey. The criteria from the survey and subsequent assessment of climate services for health could be used for the GGA, with an indicator established to ensure countries have adequate and usable climate services to inform their adaptation responses.

Indicator 2

Number of countries completing Climate Change and Health Vulnerability Adaptation Assessments (CCHVA) and responding to the risks and vulnerabilities from the assessment within their national adaptation planning.

Relevance: Target 9 (c) Target 10 (a).

To attain resilience for health against climate impacts and risks, Parties need to understand the impacts and risks as well as the specific vulnerabilities in their populations and services which need to be addressed. CCHVA's are effective tools to understand which populations and geographical areas are most vulnerable to different kinds of health impacts from climate change and the capacity of the health system to manage these impacts. It allows countries to identify interventions to increase the resilience of their health system and allows proactive and effective management of health risks.

As part of the GPW14 initiative to develop indicators for measuring health system resilience, WHO has proposed an indicator to track the completion of CCHVAs. This could be used under the GGA to assess the completion of these effective policy tools.

Indicator 3

Number of people who access effective end-to end early warning systems for extreme climate, weather and water events as measured under the Early Warning 4 All Maturity Index.

Relevance: Target 9 (c) Target 10 (a).

Early warning systems are identified as a priority by 88% of SIDs and LDCs that submitted their Nationally Determined Contributions (NDCs) and are critical for adapting to the increasing extreme weather events caused by climate change and protecting human health from climate risks and impacts. It is also directly highlighted under target 10 (a) of the UAE FGCR. However, a major gap exists with only 50% of countries reporting adequate systems¹³.

The Early Warning 4 ALL (E4ALL) Maturity Index has since been established to measure global progress in effective coverage of Early Warning Systems. There are also pre-established indicators under the UNDRR Sendai Framework which measure capacity against some of the E4ALL pillars which could be used as indicators under the GGA such as indicator G-1, G-2 and G-5 of [the Sendai Framework](#). Further assessment is needed to ensure the indicators align with principles of the GGA, specifically ensuring they are adaptation relevant.

Indicator 4

Number of countries who have climate-informed early warning systems for the prediction and surveillance systems for climate sensitive health risks to inform action.

Relevance: Target 9 (c) Target 10 (a).

Climate change is altering the transmission potential of many vector-borne, water-borne, foodborne, and airborne infectious diseases, meaning an indicator assessing capacity for countries to respond to climate-sensitive health risks should also be prioritised¹⁴. However, a global indicator to reflect climate-sensitive health risks is challenging, given the regional and local variation in climate impacts creating diverse health risks across and within regions. Therefore, specific regional sub-indicators should be developed to reflect climate-sensitive disease risks for different regional and local populations.

However, a global indicator measuring the world's capacity to respond to climate sensitive health risks remains important to track progress globally and push forward action on the international agenda. Under the GPW14 the WHO have proposed an indicator which assesses the availability of climate-informed early warning systems to allow for the prediction of the risks of specific climate-sensitive health outbreaks. This could be used as a global indicator under the GGA, with sub-indicators relating to specific climate sensitive health risks relevant to specific landscapes and regions supporting it.

Indicator 5

Number of countries that have effectively incorporated health within NDCs, NAPs or have completed a HNAP.

Relevance: Target 9 (c) Target 10 (b).

There are several planning tools which could support strong and integrated climate change and health adaptation planning within national governments including, National Adaptation Plans, NDCs and more specifically Health National Adaptation Plans (HNAPs). The effective integration and consideration of health within these planning tools ensures that once the risks and hazards are identified by countries, that they have the tools and services available to them to respond to those risks. This will ultimately strengthen their resilience and reduce their vulnerability to those climate induced health risks.

All NAPs highlight health as a high-priority sector vulnerable to climate change¹⁵. However, the extent to which health risks are considered and addressed varies across countries and regions.

Therefore, an indicator needs to go beyond considering whether health is included within adaptation planning, to assess how it is included and include specific actions to improve health's integration within these plans. This could be in the form of a composite indicator which include different sub-indicators of the different elements required. There are several suitable indicators under the WHO's GPW-14 proposed framework which would be suitable to measure the different actions and tools required to improve the role of health within NAPs and other adaptation planning tools. These are identified within the GPW-14 draft indicators within the [WHO GGA submission](#).

Endnotes

1. World Health Organization (n.d.) Health equity. Retrieved from https://www.who.int/health-topics/health-equity#tab=tab_1
2. Romanello, M. et al. (2023) The 2023 report of the Lancet Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms. Retrieved from [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(23\)01859-7/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(23)01859-7/fulltext)
3. Intergovernmental Panel on Climate Change. (2022). Climate change 2022: Impacts, adaptation and vulnerability. Working Group II contribution to the IPCC Sixth Assessment Report. Retrieved from https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter07.pdf
4. Romanello M, Walawender M, Hsu SC et al. The 2024 report of the Lancet Countdown on health and climate change: Facing record-breaking threats from delayed action. Lancet 2024; published online October 2024. [https://doi.org/10.1016/S0140-6736\(24\)01822-1](https://doi.org/10.1016/S0140-6736(24)01822-1)
5. United Nations Environment Programme (2023) Adaptation Gap Report 2023. Retrieved from <https://www.unep.org/resources/adaptation-gap-report-2023>
6. United Nations Environment Programme (2023) Adaptation Gap Report 2023. Retrieved from <https://www.unep.org/resources/adaptation-gap-report-2023>
7. Leiter, Timo (2024) Modalities for the Indicator Work Programme under the Global Goal on Adaptation: Submission in response to Decision 2/CMA.5 para 41. Retrieved from: https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2024/04/Modalities-for-the-Indicator-Work-Programme-under-the-Global-Goal-on-Adaptation_LSE-consultation-submission.pdf
8. World Health Organisation (2024) WHO GGA Submission to the UNFCCC. Retrieved from <https://www4.unfccc.int/sites/SubmissionsStaging/Documents/202407311007--WHO-GGA%20submission31072024.pdf>
9. World Resources Institute (2023) Global Goal on Adaptation Explained. Retrieved from <https://www.wri.org/insights/global-goal-on-adaptation-explained>
10. van Driel, M., Biermann, F., Kim, R. E., & Vijge, M. J (2022) International organisations as ‘custodians’ of the sustainable development goals? Fragmentation and coordination in sustainability governance. Global Policy.
11. World Meteorological Organization (2023) 2023 State of Climate Services: Health. Retrieved from: <https://wmo.int/publication-series/2023-state-of-climate-services-health>
12. Evans, J. P., Belmadani, A., Menkes, C., Stephenson, T., Thatcher, M., Gibson, P. B., & Peltier, A. (2024). Higher-resolution projections needed for small island climates. Nature Climate Change.
13. World Meteorological Organization (2023) 2023 State of Climate Services – Health. Retrieved from: <https://public.wmo.int/en/our-mandate/climate/state-of-climate-services-report-for-health>
14. Romanello, M. et al. (2023) The 2023 report of the Lancet Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms. Retrieved from [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(23\)01859-7/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(23)01859-7/fulltext)
15. World Health Organisation (2021) Review: Health in National Adaptation Plans. Retrieved from: <https://www.who.int/publications/i/item/9789240023604>

Wellcome supports science to solve the urgent health challenges facing everyone. We support discovery research into life, health and wellbeing, and we're taking on three worldwide health challenges: mental health, infectious disease, and climate and health.

**Wellcome Trust, 215 Euston Road, London NW1 2BE, United Kingdom
T +44 (0)20 7611 8888, E contact@wellcome.org, [wellcome.org](https://www.wellcome.org)**

The Wellcome Trust is a charity registered in England and Wales, no. 210183.
Its sole trustee is The Wellcome Trust Limited, a company registered in England and Wales, no. 2711000
(whose registered office is at 215 Euston Road, London NW1 2BE, UK). SP-7654/10-2024/KO