

## Submission to Global Goal on Adaptation

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### Drugs for Neglected Diseases initiative (DNDi), March 2024

*This submission is made by the Drugs for Neglected Diseases initiative (DNDi), a not-for-profit R&D organization that discovers, develops, and delivers new treatments for neglected patients. DNDi was established in 2003 by public research institutions in Brazil, France, India, Kenya, the Ministry of Health in Malaysia, Médecins Sans Frontières and with the participation of the World Health Organization Special Programme on Research and Training in Tropical Diseases. Using an alternative, collaborative, open science, research and development model, DNDi has developed 13 new and improved treatments for six deadly diseases, that have reached millions of people.*

***In this submission DNDi recommends the development and adoption of specific health metrics on climate-sensitive diseases as part of the Global Goal on Adaptation and offers suggestions for areas that must be considered.***

### Health, climate change and adaptation

COP, hosting its first ever health day in 27 years, underpins the growing recognition of the fact that the climate crisis is a health crisis. There is an urgent need to adapt national public health systems and innovation mechanisms to respond to the adverse impact of climate change on health outcomes. The framework of the Global Goal on Adaptation (GGA) adopted at COP28 reflects this concern and contains a dedicated health target of “**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**” by 2030 and beyond.

### Climate change, infectious diseases and infections

**Consideration of climate-sensitive diseases, implementation of adaptation mechanisms to prevent and respond to them, and measuring the impacts of those adaptation strategies, are important for achieving the GGA target on health.**

**The proportion of annual global deaths due to ‘climate-sensitive diseases’ is estimated to be 69.9%.<sup>1</sup>** Climate change induced mortality and morbidity from infectious diseases are expected to rise globally in the future. Indeed, climate change is affecting the spread of infectious diseases in three ways: the changing incidence and geographical spread of vector-borne and water-borne climate-sensitive infectious diseases due to changing temperatures and rainfall patterns, climate-related migration, and the increased risk of new emerging zoonotic diseases.<sup>2</sup> IPCC’s latest [report](#) mentions “The occurrence of climate-related food-borne and water-borne diseases has increased. **The incidence of vector-borne diseases has increased from range expansion and/or increased reproduction of disease vectors.**” The synthesis report for the technical assessment component of the first global stocktake highlights

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<sup>1</sup> IPCC. Climate Change 2022: Impacts, Adaptation, and Vulnerability Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.; 2022; Available from: [https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC\\_AR6\\_WGII\\_Chapter07.pdf](https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_Chapter07.pdf)

<sup>2</sup> Twin threats: climate change and zoonoses. The Lancet Infectious Diseases. 8 December, 2022

that increases in waterborne, vector-borne and new diseases were major concerns for countries. While the incidence of some infectious diseases might be reduced as the environment may become too warm for vector survival, climate change effects will most likely propagate infectious diseases. The most recent report of the Lancet Countdown on climate change and health states that changing climatic conditions are altering the transmission potential of many vector-borne infectious diseases and predicts for example, that at the current rate of temperature rise, transmission potential for dengue will increase by 36–37% by 2050.<sup>3</sup> WHO, in 2021, undertook a qualitative assessment of 31 national health and climate change strategies. 23 of the 31 health and climate change strategies reviewed, identified vector borne diseases as climate-sensitive health risks.<sup>4</sup>

**Climate-sensitive diseases often disproportionately impact vulnerable populations, including children, pregnant women, those with pre-existing health conditions, and communities with limited resources, access to healthcare, proper hygiene and sanitation measures.** Taking the example of Neglected Tropical Diseases (NTDs) - these diseases affect 1.65 billion people, mostly in the least developed economies and most impoverished communities. They can bring financial devastation to those affected, feeding vicious cycles of ill-health and poverty.<sup>5</sup> As [a recent WHO communique](#) states, **many NTDs are climate-sensitive.** Nearly half (11 out of 25) of the vector or waterborne diseases listed by the WHO, which might be impacted by climate change, are also classified as NTDs.

In addition, **the effects of climate change on drug resistance are also likely to be profound.** For bacteria and fungi, a warmer planet could improve conditions for its growth and spread. Not only are higher temperatures associated with increased growth and infection rates of bacteria, but it can also put selective pressure on microbes to mutate and develop antibiotic resistance<sup>6</sup>. Extreme weather, and the flooding it brings, can not only lead to increases in outbreaks of water-borne disease, like cholera and typhoid, but it can make it easier for other infections and drug resistance to spread. That is because a lack of access to clean water and sanitation makes it more challenging to maintain infection prevention and control.

### Adaptation strategies for climate-sensitive diseases

Health services and tools are needed to protect people from impacts of climate variability and change. The IPCC report states that “Climate-sensitive food-borne, water-borne, and vector-borne disease risks are projected to increase under all levels of warming without additional adaptation”, and presents “...strengthening public health programs related to climate-sensitive diseases...” as an adaptation option that human health will benefit from. The report also suggested that for vector-borne diseases, effective adaptation options could include integrated vector control, disease surveillance, early warning and response systems that can identify potential outbreaks, improvement in socioeconomic factors and vaccine development. Whilst the aforementioned adaptation measures are important, they will not suffice. **Availability of and access to health tools to test and treat climate-sensitive diseases will also be important,** to minimize the impact of climate change, particularly on vulnerable communities, and to stay ahead of emerging challenges to prevent illness and save lives.

Therefore, increased integrated efforts must be given to incorporate strategies to manage such impacts in adaptation efforts for the changing burden of climate-sensitive infectious diseases. The

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<sup>3</sup> 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. The Lancet Countdown. November 2023. Available from: <https://www.lancetcountdown.org/2023-report/>

<sup>4</sup> World Health Organization. 2021 WHO Health and Climate Change Survey Report. 2021

<sup>5</sup> World Health Organization. Global Report on Neglected Tropical Diseases 2023.

<sup>6</sup> Burnham JP. Climate change and antibiotic resistance: a deadly combination. Therapeutic Advances in Infectious Disease. 2021;8. doi:10.1177/2049936121991374

Global Goal on Adaptation is an important opportunity for measuring and monitoring progress in this area.

### **Suggestions for development of metrics to measure adaptation to vulnerabilities from climate-sensitive diseases**

Indicators on progress of action on climate-sensitive infectious diseases are essential component of measuring progress on adaptation efforts. As part of the process for developing such indicators, we suggest that the following are taken into account:

- Consultations should be held with countries that are highly endemic for climate-sensitive diseases, communities that are impacted by them, and organisations who have been involved in developing adaptation tools and strategies
- The process of development of indicators should recognise that certain populations may be more vulnerable to climate-sensitive diseases. Therefore, data must be comprehensive, inclusive and representative of all population groups, including those that are historically marginalized or underrepresented.
- Wherever possible, existing indicators for climate-sensitive disease, including those for NTDs, should be considered, so as to not increase the reporting burden on countries

For development of indicators under the health target, we suggest considering a mix of both output and impact indicators to measure both short to medium- and long-term impacts of adaptation efforts. Below are the following categories that Parties can consider while developing indicators related to climate-sensitive diseases.

#### **Short to medium term: Measuring adaptation strategies being undertaken by countries**

- **Surveillance:** Integrating real time disease surveillance for climate-sensitive diseases into broader health adaptation planning would allow for outbreak identification, detection of emerging trends, enabling timely response, and adapting response measures, if needed. However, limited surveillance infrastructure, data fragmentation, or lack of trained personnel may hamper surveillance efforts. Therefore, consideration should be given to how countries can be supported to report on these indicators- for example, integrating surveillance for these diseases into existing surveillance systems and building capacity to collect and report such data.
- **Availability of health tools:** For many climate-sensitive infectious diseases, lack of health tools threatens the world's ability to adapt to the effects of climate change on these diseases. For example, for dengue, treatment consists primarily of supportive care, with no specific treatment yet available to prevent progression to severe disease, and, potentially death. Adaptation efforts must include the development and availability of appropriate health tools, to prevent, test and treat climate-sensitive diseases, to support affected communities in their efforts to adapt to the impacts of climate change. To that effect, countries may consider reporting on the availability of vaccines and first-line treatments and diagnostics for country-relevant climate-sensitive diseases, and their inclusion in essential medicines and diagnostics lists and national immunization schedules.
- **Investments:** Investments in addressing climate-sensitive diseases are critical for enhancing resilience of affected communities and help populations at-risk cope with the health impacts of climate change. Therefore, it would be useful to track and report on investments made for

example, in integrated disease surveillance systems for climate-sensitive diseases and infections including NTDs, in research and development on tools to prevent, test and treat climate-sensitive diseases and in infection prevention and control and access to clean water and sanitation. Gathering investment data will also help highlight gaps in financing for implementation of adaptation strategies.

- **Coverage:** Strategies undertaken, and tools developed to prevent and respond to climate-sensitive diseases should benefit at-risk populations. For example, coverage data on vector control approaches, vaccine deployment or test and treat strategies can help assess whether health tools are reaching those intended and also help governments direct resources and target interventions to protect vulnerable populations.

#### **Long term: Measuring impacts of climate adaptation initiatives**

- **Disease prevalence:** In a national context, the list of climate-sensitive diseases may vary depending on geographical features, climate variability, ecosystems, presence of vectors etc. National public health priorities and policies also play a crucial role in determining which diseases are prioritized for surveillance, control, and prevention efforts. Therefore, any indicator developed to track disease prevalence needs to be relevant and agreed to with countries first. Data on disease prevalence is crucial for countries to be able to track disease trends, shifting disease patterns and transmission of these diseases over time.
- **Morbidity and mortality:** Data on disease mortality rates, estimated number of people requiring treatments, and healthcare utilisation could be an important way to measure impacts of adaptation efforts.
- **Costs:** Climate-sensitive diseases impose direct healthcare expenditure related to diagnosis, treatment, and management of illness. It can also impose indirect costs due to productivity loss and long-term health impacts. Including an indicator under this category could measure the extent to which adaptation efforts are reducing these costs.

DNDi is keen and willing to be a part of the UAE – Belém work programme, on the development of indicators for measuring progress achieved towards the targets outlined in the GGA framework- and share its experiences to help develop these indicators.