Adaptation Gap Report 2023 – Case Study

Health-related loss and damage: Lessons from the Caribbean

This case study is part of the publication "Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed" (ISBN No: 978-92-807-4092-9). Suggested citation: United Nations Environment Programme (2023). Health-related loss and damage: Lessons from the Caribbean. An online resource of *Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed.* Nairobi. https://doi.org/10.59117/20.500.11822/43796

Amid a global surge in heatwaves, wildfires, floods, sea level rise and vector-borne diseases, the interdisciplinary and multisectoral approach to climate-resilient health systems used by the Caribbean provides a model for public health agencies to follow (Drewry and Oura 2022).

In the Caribbean, mild temperatures and isolated storms have given way to more extreme weather patterns due to climate change: droughts followed by destructive hurricanes, flooding and landslides. Changing temperatures and rainfall patterns are increasing the risk of mosquito-borne diseases, with dengue fever outbreaks now occurring every 1–3 years instead of in 7–10-year cycles (Climate Studies Group Mona 2020; Colón-González *et al.* 2021). Climate crisis-related air pollution, heat and food and water insecurity are also exacerbating the impacts of non-communicable conditions and diseases on health systems in the region (Intergovernmental Panel on Climate Change 2023). Globally, climate-related disasters affected approximately 185 million people and caused over 30,000 deaths in 2022 (Centre for Research on the Epidemiology of Disasters 2023). The impacts disproportionately affect tropical low- and middle-income countries.

To tackle these issues, the Caribbean Public Health Agency and its partners are developing national food and water safety plans, sharing quarterly climate-related health bulletins and piloting climate-integrated early warning health systems, which can forecast infectious disease outbreaks like dengue up to three months in advance (Lowe *et al.* 2020). The Caribbean Public Health Agency's interdisciplinary and multisectoral regional approach has supported health vulnerability and adaptation assessments across eight Caribbean countries, financing plans, public awareness campaigns and coordinated leadership.

Embedding health as a cross-cutting consideration in international climate and development frameworks will enable much-needed technical and financial resources and policy coherence in responding to loss and damage (Climate Studies Group Mona 2020).

Without effective adaptation, health-care infrastructure will continue to be overwhelmed by demand and damaged during climate-related disasters. By the end of this century, a projected increase of 2.7°C will expose a third of the world's population to unprecedented temperatures and uninhabitable environments (Lenton *et al.* 2023). While the health sector has begun to contend with these challenges, only one in ten nationally determined contributions explicitly reference health-related loss and damage (World Health Organization [WHO] 2023). Current responses also do not sufficiently address inequitable impacts on vulnerable countries (WHO 2022). In addition, there is very little knowledge on how unavoidable non-economic loss and damage affects mental and emotional health and well-being.

World Health Organization assessment tools can help integrate health-specific economic and non-economic loss and damage considerations into national adaptation plans (WHO 2021). These include upgrading health infrastructure, improving the capacity of health workforces, enhancing disease surveillance and conducting health-specific vulnerability and risk assessments. Extreme heat impacts can be mitigated through short-term measures, such as heat warnings, cooling stations, public announcements and relief services, and long-term adaptation actions, such as urban greening, institutional capacity-building and public awareness campaigns (Turek-Hankins *et al.* 2021; Singh 2023).

The Caribbean Public Health Agency's success underscores the importance of coordinated adaptation planning – combining capacity-building and risk awareness, targeted investments, combined political intent, scientific know-how and local participation.

Contributors:
Kathryn Bowen, Professor and Deputy Director, Melbourne Climate Futures; Professor of Environment, Climate and Global Health, Melbourne School of Population and Global Health, University of Melbourne
Janine Felson, Enterprise Fellow, Melbourne Climate Futures, University of Melbourne
Chandni Singh, Senior Researcher, School of Environment and Sustainability, Indian Institute for Human Settlements
Joy St John, Executive Director, Caribbean Public Health Agency
Elise Moo, Research Fellow, Melbourne School of Population and Global Health, University of Melbourne

References

Centre for Research on the Epidemiology of Disasters (2023). *2022 Disasters in numbers*. Brussels: CRED. https://cred.be/sites/default/files/2022_EMDAT_report.pdf.

Climate Studies Group Mona (eds.) (2020). *The State of the Caribbean Climate*. The Caribbean Development Bank. http://dx.doi.org/10.13140/RG.2.2.16732.92808.

Colón-González, F.J., Sewe, M.O., Tompkins, A.M., Sjödin, H., Casallas, A., Rocklöv, J. *et al.* (2021). Projecting the risk of mosquito-borne diseases in a warmer and more populated world: a multi-model, multi-scenario intercomparison modelling study. *The Lancet Planetary Health*, 5(7), e404-e414. https://doi.org/10.1016/S2542-5196(21)00132-7.

Drewry, J. and Oura, C.A.L. (2022). Strengthening climate resilient health systems in the Caribbean. *The Journal of Climate Change and Health* 6, 100135. https://doi.org/https://doi.org/10.1016/j.joclim.2022.100135.

Intergovernmental Panel on Climate Change (2023). Health, wellbeing and the changing structure of communities. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Pörtner, H.-O., Roberts, D.C., Tignor, M., Poloczanska, E.S., Mintenbeck, K., Alegría, A. *et al.* (eds.). Cambridge, UK and New York, NY, USA: Cambridge University Press.1041–1170. https://doi.org/doi:10.1017/9781009325844.009.

Lenton, T.M., Xu, C., Abrams, J.F. Ghadiali, A., Loriani, S., Sakschewski, B. *et al.* (2023). Quantifying the human cost of global warming. *Nature Sustainability* 6, 1237–1247. https://doi.org/10.1038/s41893-023-01132-6.

Lowe, R., Ryan, S.J., Mahon, R., Van Meerbeeck, C.J., Trotman, A.R., Boodram, L.-L.G. *et al.* (2020). Building resilience to mosquito-borne diseases in the Caribbean. *PLOS Biology* 18(11), e3000791. https://doi.org/10.1371/journal.pbio.3000791.

Singh, C. (2023). Facing a familiar foe: adapting to heat in South Asia. *International Journal of Urban and Regional Research*, Spotlight on Extreme Heat in Urban South Asia. https://www.ijurr.org/spotlight-on/extreme-heat/facing-a-familiar-foe-adapting-to-heat-in-south-asia/.

Turek-Hankins, L.L., Coughlan de Perez, E., Scarpa, G., Ruiz-Diaz, R., Schwerdtle, P.N., Joe, E.T. *et al.* (2021). Climate change adaptation to extreme heat: A global systematic review of implemented action. *Oxford Open Climate Change* 1(1), kgab005. https://doi.org/10.1093/oxfclm/kgab005.

World Health Organization (2021). *Climate Change and Health: Vulnerability and Adaptation Assessment*. Geneva. https://www.who.int/publications/i/item/9789240036383.

_____ (2022). *WHO Policy Brief: Loss and Damage*. Geneva. https://www.who.int/publications/m/item/who-policy-brief--loss-and-damage.

_____ (2023). *2023 WHO Review of Health in Nationally Determined Contributions and Long-term Strategies: Health at the Heart of the Paris Agreement*. Geneva. https://iris.who.int/handle/10665/372276.

UN environment programme

Click here to view the full report.
Adaptation Gap Report 2023: Underfinanced. Underprepared. Inadequate investment and planning on climate adaptation leaves world exposed.