

SIERRA LEONE

LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE DATA SHEET 2023

Health and climate change in Sierra Leone

The *Lancet* Countdown on Health and Climate Change is an academic collaboration of over 200 researchers from around the world, which annually takes stock of the evolving links between health and climate change through 40+ peer-reviewed indicators. Since 2016, these indicators have provided regular, reliable global and regional stocktakes on climate change and health. This document summarises key findings from the 2023 Report of the *Lancet* Countdown* for Sierra Leone, which reveal:



Populations are increasingly exposed to health-threatening **extreme heat**, with associated increases in heat-related illness and mortality.



Increasingly frequent and **intense droughts** threaten crop yields; undermine food security, water security, and sanitation; and increase the risk of malnutrition.



Improvements in healthcare access has helped lower vulnerability to *Aedes*-borne disease; however, climatic conditions remain suitable for the spread of **vector-borne diseases** including dengue and malaria.

These findings underline the urgency of strengthening local health systems, adapting to climate change, and pursuing efforts to reduce greenhouse gas emissions through interventions that simultaneously deliver health co-benefits. These actions will help build healthier, more resilient populations, and forge the way to a thriving future for Sierra Leone.



Data gap

For many of the indicators, globally comparable data were unavailable for Sierra Leone. More timely collection of data and actionable monitoring of climate change and health indicators in Sierra Leone could support the development of locally-relevant, health-promoting climate change policies.

Heat and health

Exposure to high temperatures threatens people's lives, health, and wellbeing, leading to death and heat-related disease, and increasing healthcare demand during heatwave episodes. Older people, socio-economically deprived communities, very young children, pregnant women, and those with underlying health problems are particularly at risk.



From 2013-2022, the total number of heatwave days experienced annually by children under the age of one was 6.9 times greater than the equivalent demographic from 1986-2005. Adults over age 65 experienced 7.5 times as many heatwave days across the same timeframe (indicator 1.1.2).



From 2013-2022, each infant was exposed to an average of 4.3 life-threatening heatwave days per year, while adults over age 65 were exposed to 4.9 days per year (indicator 1.1.2).

ECONOMIC IMPACT OF HEAT

Heat exposure limits labour productivity, which undermines livelihoods and the social determinants of health.

701 million potential labour hours lost due to heat exposure in 2022, an increase of 92.5% from 1991-2000 (indicator 1.1.4).

US\$827 million potential associated income loss, equivalent to 20% of Sierra Leone's GDP (indicator 4.1.3).

FUTURE PROJECTIONS

In a scenario in which temperatures are kept to under 2°C of heating, heatwave exposure for people over age 65 is projected to be 14 times greater by mid-century (2041-2060 average) (indicator 1.1.2).

2°C SCENARIO

Drought and Health

Droughts can impact crop yields and livestock, increasing the risk of food insecurity and malnutrition. They can also affect water security, impair sanitation, and increase the risk of infectious disease transmission.



Over the past five years (2018-2022), an average of 97% of Sierra Leone's land area experienced over 3 months of extreme drought (indicator 1.2.2).

Vulnerability to infectious diseases

The suitability for transmission of many infectious diseases, including vector-borne, food-borne, and water-borne diseases, is influenced by shifts in temperature and precipitation associated with climate change.



The basic reproduction number (R_0 , an indication of disease transmissibility) for dengue has been high for decades. Compared to 1951-1960, R_0 increased 12.5% by 2013-2022 (indicator 1.3).



Though the portion of the year during which conditions are suitable for the spread of malaria decreased by 10% between 1951-1960 and 2013-2022, malaria can still spread for over 7 months of the year (indicator 1.3).



Over the past five years (2018-2022), the proportion of Sierra Leone's coast that has been suitable for the spread of *Vibrio* pathogens at any one point in the year has been at least 95% each year (indicator 1.3).

Vulnerability to dengue infections is affected by physiological, social, financial, and geographical factors, as well as a community's capacity to adapt. Improvements in public health and in healthcare access can lead to reductions in vulnerability and protect populations from the negative health impacts associated with an increasing climate suitability for transmission of dengue.



After peaking in 2002, vulnerability to severe outcomes from *Aedes*-borne diseases has been decreasing, largely driven by increases in healthcare quality and access (indicator 2.3.1).

Air pollution and health co-benefits

The low adoption of clean renewable energy and the continued use of fossil fuels and biomass lead to high levels of air pollution, which increases the risk of respiratory and cardiovascular disease, lung cancer, diabetes, neurological disorders, adverse pregnancy outcomes, and leads to a high burden of disease and mortality. All of these lead to increasing demand on care services.



Household air pollution from the use of dirty fuels resulted in 76 deaths per 100,000 people in 2020 (indicator 3.2.2).

FOR FURTHER INFORMATION, VISIT:
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*Romanello M, di Napoli C, Green C et al. 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. *Lancet* 2023; published online Nov 14. [https://doi.org/10.1016/S0140-6736\(23\)01859-7](https://doi.org/10.1016/S0140-6736(23)01859-7).