

SOUTH AFRICA

LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE
DATA SHEET 2023

Health and climate change in South Africa

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 South Africa, which reveal:



Trends in **heat and health** are particularly concerning, with increases in exposure to high temperatures, undermining livelihoods and threatening people's health and wellbeing.



Climatic conditions have grown increasingly suitable for the spread of **vector-borne diseases** including dengue and malaria.



Air pollution is affecting the health of local populations, with a high burden of disease and deaths that could be avoided by transitioning to zero-emission, clean energy sources.



The persistent net **subsidising of fossil fuels** for billions of dollars restricts funds available for health-supportive services, and hampers a transition towards clean, zero-emission energy.

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 South Africa.

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.

0.3°C

From 2018 to 2022, the average summer temperatures that people were exposed to were 0.3°C higher than the 1986–2005 baseline average (indicator 1.1.1).



From 2013–2022, children under the age of one were exposed to 94% more heatwave days annually than the equivalent demographic were on average from 1986–2005. Adults over age 65 saw a 145% increase across the same timeframe (indicator 1.1.2).

55%

Annual heat-related deaths among people over 65 years old increased by 55% from 2000–2004 to 2018–2022, with the health threat of rising temperatures compounded by a growing over-65 population (indicator 1.1.5).

ECONOMIC IMPACT OF HEAT

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

148million potential labour hours lost due to heat exposure in 2022, an increase of 7% from 1991–2000 (indicator 1.1.4).

US\$241million potential associated income loss (indicator 4.1.3).



Construction workers were hit the hardest, seeing 51.4% of the potential hours lost and 53.4% of the potential income losses in 2022 (indicators 1.1.4 & 4.1.3).

FUTURE THREATS

2°C SCENARIO
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 11 times greater by mid-century (2041–2060 average) (indicator 1.1.2).

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.



In 2013-2022, the amount of time that the highlands (elevation > 1500 metres) of South Africa were suitable for transmission of *Plasmodium falciparum* parasites that transmit malaria was 94.2% higher, compared to 1951-1960 (indicator 1.3).



In South African lowlands (elevation < 1500m), conditions were suitable for the transmission of malaria for more than two months of the year on average, from 2013-2022 (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.



From 2012-2021 vulnerability to *Aedes*-borne disease was 45% higher than in the 1990s (indicator 2.3.1).

Air pollution, energy transition 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.



In 2020, more than 10,000 deaths were attributable to small particulate matter (PM_{2.5}) generated from human activities, a 15.3% decrease from 2005 (indicator 3.2.1).



Of these deaths in 2020, 64% were caused by fossil fuel burning, including 53.6% of deaths caused by coal specifically (indicator 3.2.1).



In 2020, South Africa had a net-negative carbon revenue (fossil fuel subsidies were higher than carbon prices), allocating a net total of US\$5.2 billion in fossil fuel subsidies. This was the largest net fossil fuel subsidy of the last ten years and is equivalent to 16% of the national health budget (indicator 4.2.4).

RENEWABLE ENERGY TRANSITION



In 2020, the carbon intensity of South Africa's energy system was 8% lower than the prior year. However, this was still 16% higher than 1992, the year the UNFCCC was adopted (indicator 3.1.1).



In 2020, coal accounted for 90.2% of South Africa's electricity output. This is only a 3% decrease from 2015, the year that the Paris Agreement was adopted.



Renewable sources of energy made up less than 5% of electricity output, and made up only 1% of total energy sources in 2020 (indicator 3.1.1).

Transitioning energy systems to renewables would benefit human health, simultaneously reducing air pollution; mitigating greenhouse gas emissions; and contributing towards universal, affordable, and clean energy.

Carbon prices help economies transition away from high-carbon fuels, whereas fossil fuel subsidies provide incentives for health-harming emissions and slow the low-carbon transition. Redirecting fossil fuel subsidy funds to incentivising the expansion and affordability of low-carbon power and to health-promoting interventions would deliver net benefits to local populations and support a just transition.

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.



In 2022, 25.5% of South Africa's land area experienced over 1 month of extreme drought. The amount of land experiencing at least one month of extreme drought per year has increased 10 times from 1951-1960 to 2013-2022 (indicator 1.2.2).

*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).