

JAPAN

LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE DATA SHEET 2023

Health and climate change in Japan

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 reliable global and regional stocktakes on climate change and health. This document summarises key findings from the 2023 Report of the *Lancet* Countdown* for Japan, which reveal that:



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



Large increases in urban population has likely contributed to higher vulnerability to *Aedes*-borne disease. Additionally, climatic conditions have grown increasingly suitable for the spread of **vector-borne diseases** like malaria.



Unhealthy diets are contributing to greenhouse gas (GHG) emissions and undermining health and wellbeing. Deaths are attributable to insufficient consumption of nutritious, plant-based foods.



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

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 Japan.

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.

1.0°C

From 2018 to 2022, the average summer temperatures that people were exposed to were 1.0°C higher than the 1986–2005 baseline average (indicator 1.1.1).



From 2013–2022, children under the age of one were exposed to 98% more heatwave days annually than the equivalent demographic were on average from 1986–2005. Adults over age 65 saw a 305% increase across the same timeframe (indicator 1.1.2).

57%

Annual heat-related deaths amongst people over 65 years old increased by 57% 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.

1.6 billion potential labour hours lost due to heat exposure in 2022, an increase of 24% from 1991–2000 (indicator 1.1.4).

US\$28.6 billion potential associated income losses in 2022 (indicator 4.1.3).



Construction workers were hit the hardest, seeing 35.6% of the potential hours lost and 38.9% of the potential income losses in 2022 (indicators 1.1.4 & 4.1.3).

FUTURE THREATS

Unless urgent mitigation and adaptation action is taken, the health impacts of heat will increase drastically.

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 3 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.



Over the last decade (2013-2022), conditions have been suitable for the spread of malaria by *Anopheles* mosquitoes for an average of 3.5 months of the year (indicator 1.3).



Compared to 1951-1960, the basic reproduction number (R_0 , an indication of the transmissibility of a disease) for transmission of dengue by *Aedes aegypti* mosquitoes has more than doubled (indicator 1.3)



20.8%

The proportion of Japan's coast that is suitable for the transmission of *Vibrio* pathogens, responsible for a range of human infections including sepsis and cholera has been trending up over the last few decades, with nearly 400km of the coast suitable in 2022. This was 20.8% greater than the 1982-2010 baseline. (indicator 1.3).

Diet and health

Promoting shifts to healthier, more plant-based diets can substantially reduce agricultural GHG emissions, while also delivering major co-benefits for public health through improvements to dietary risk factors and reduced deaths due to unbalanced diets.



In 2020, nearly 300,000 deaths were attributable to dietary risks that could be reduced through balanced, low-emissions diets.



89%

Of these deaths, nearly 89% of deaths were attributable to insufficient consumption of nutritious plant-based foods (indicator 3.3.2).

Air pollution, energy transition and health co-benefits

The low adoption of clean renewable energy and the continued use of fossil fuels and biomass leads 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.



26%

In 2020, over 21,000 deaths were attributable to small particulate matter ($PM_{2.5}$) generated from human activities, a 26% decrease from 2005 (indicator 3.2.1).



Of these deaths in 2020, 38% were caused by fossil fuel burning (indicator 3.2.1).



\$324m

Japan had a net-positive carbon revenue in 2020, indicating that carbon prices were higher than fossil fuel subsidies. The country saw a net revenue of US\$324 million from carbon pricing in 2020 (indicator 4.2.4).

RENEWABLE ENERGY TRANSITION



In 2020, the carbon intensity of Japan's energy system was 1.4% higher than the prior year, and was 8% higher than 1992, the year the UNFCCC was adopted (indicator 3.1.1).



Renewable energy made up only 2.7% of total energy supply in 2020, while coal still accounted for nearly 27% of total energy supply in the same year (indicator 3.1.1).



28%

Coal use has been increasing as part of electricity output since the 2000s. In 2020, coal accounted for 28% of total electricity output, which is more than double from 1992 levels.

Transitioning energy systems to renewables would benefit human health; reduce air pollution; mitigate greenhouse gas emissions; and contribute 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.

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).