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, communities experiencing income inequality and structural racism, very young children, pregnant women, and those with underlying health problems are particularly at risk.

**Heat and health**

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- **2.3°F**
  - 2022 was the warmest year ever recorded in the U.S. Average U.S. summer temperatures in 2022 were 2.3°F (1.3°C) warmer as compared to 1986-2005 (indicator 1.1.1).

- **138%**
  - Adults over age 65 years experienced a 138% increase in total exposure to heatwaves annually (172 million more person-days) in 2013-2022 compared to the same demographic in 1986-2005, meaning that each older adult, on average, was exposed to an additional 2.8 heatwave days per year as compared to the historical baseline.

- **61%**
  - U.S. infants under 1 year experienced a 61% increase in total exposure to heatwaves (19 million more person-days), meaning that each infant, on average, was exposed to an additional 3.2 heatwave days per year from 2013-2022 compared to 1986-2005 (indicator 1.1.2).

Green space promotes numerous health benefits and reduces heat exposure.

In a study of 49 U.S. urban centers, 25 were classified as having moderate or higher levels of greenness in 2022. This was a decline from 30 urban centers with moderate or higher greenness in 2015 (indicator 2.2.3).

**ECONOMIC IMPACT OF HEAT**

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

- **2.9 billion**
  - potential labour hours lost due to heat exposure in 2022, an increase of 54% from 1991-2000 (indicator 1.1.4).

- **US$81 billion**
  - potential loss of income from reduced labor due to extreme heat. 45% of the losses occurred in the construction industry (indicator 4.1.3).
The amount of land classified as experiencing at least three months of extreme drought per year increased 22% from 1951–1960 to 2013–2022. In 2022, 11% of U.S. land area experienced over 3 months of extreme drought (indicator 1.2.2).

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.

The ability of Aedes aegypti – the mosquito that can carry the dengue virus – to transmit dengue had more than doubled in 2013–2022 compared to 1951–1960 in the U.S. (as defined by the basic reproductive number, R0). It is now greater than 1, signifying the potential for the disease to spread (indicator 1.3).

The transmission season for Plasmodium falciparum and Plasmodium vivax – two parasites that cause malaria – lengthened by 39% and 33.7%, respectively, in U.S. lowland areas in 2013–2022 compared to 1951–1960 (indicator 1.3).

9.3% of total U.S. coastline was suitable for Vibrio transmission at any one point in 2022. This was 44.4% higher than average suitability from 1982–2010 (indicator 1.3).

In 2022, the monetized value of these heat-related deaths in adults 65 years and older in the U.S. was estimated to be more than $11 billion (indicator 4.1.2).

In 2021, the U.S. was one of the five leading emitters of primary PM$_{2.5}$, by both production- and consumption-based accounting, contributing 2.9% of the world’s production-based PM$_{2.5}$ emissions and 5.2% of the world’s consumption-based PM$_{2.5}$ emissions (indicator 4.2.5).

In 2021, the U.S was the second-highest emitter of CO$_2$ by both production- and consumption-based accounting, contributing 13.4% and 16.0% of the world’s production- and consumption-based CO$_2$ emissions, respectively (indicator 4.2.5).

FUTURE PROJECTIONS

3.7°F (2°C) SCENARIO

In a scenario in which temperatures are kept to under 3.7°F (2°C) of heating, heatwave exposure for people over age 65 is projected to be 5 times greater by mid-century (2041-2060 average) (indicator 1.1.2).
As of February 2023, ExxonMobil’s planned operations would generate 55% more GHG emissions than would be compatible with their annual share of an “emissions budget” aligned with 1.5°C of average global heating in 2030. In 2040, expected emissions would rise to 217% more than a 1.5°C emissions budget (indicator 4.2.6).

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