IRAN

LANCET COUNTDOWN ON HEALTH AND CLIMATE CHANGE
DATA SHEET 2024

Health and climate change in Iran

The *Lancet* Countdown on Health and Climate Change annually takes stock of the evolving links between health and climate change through 50+ peer-reviewed indicators. Since 2016, these indicators have provided regular, reliable global and regional stocktakes on climate change and health. Data in this year's report reveal that people all around the world are facing record-breaking threats to their wellbeing, health and survival from the rapidly changing climate. This document summarises key country-level findings from the 2024 report of the *Lancet* Countdown for Iran, which reveal that:

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

Increasingly frequent and intense **wildfires, droughts, and sand and dust storms** threaten crop yields, undermine food security, water security and sanitation, and increase the risk of malnutrition and infectious disease transmission.

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, and contributes significantly to air pollution at the local level.

These findings underline the urgency of redirecting finance away from health-harming fossil fuels; and towards strengthening local health systems, adapting to climate change, and pursuing efforts to reduce greenhouse gas (GHG) emissions through interventions that simultaneously deliver health co-benefits.

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 people, and those with underlying health problems are particularly at risk.

From 2014-2023, the total number of heatwave days experienced annually by children under the age of one in Iran was 128% greater than the equivalent demographic from 1986-2005. Adults over the age 65 experienced close to a 343% increase in heatwave days across the same timeframe (indicator 1.1.1).

From 2014-2023, each infant under the age of one and adults over the age of 65 were exposed to over 16.8 heatwave days per year. This is around a 168% increase in heatwave days per person, respectively, compared to 1986-2005 (indicator 1.1.1).

ECONOMIC IMPACT OF HEAT

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

US$1.28 billion was the potential income loss from labour capacity due to heat in 2023 (indicator 4.1.3).

1.18 billion potential labour hours were lost due to heat exposure in 2023, an increase of 125% from 1990-1999 (indicator 1.1.3).

Construction and agriculture workers were hit the hardest, seeing 37% and 36% of the potential hours lost respectively (indicator 1.1.3) and close to 43% and 33% of the potential income losses, respectively, in 2023 (indicator 4.1.3).

Vulnerability to infectious diseases

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

From 2014-2023, the average annual population living within 100 km from coastal waters with conditions suitable for Vibrio transmission reached nearly 2.2 million, representing a 22.7% increase from the annual averages from 1990-1999 (indicator 1.3.3).

Extreme weather and health

Increasingly frequent and intense wildfires, droughts, and sand and dust storms threaten crop yields, undermine food security, water security and sanitation, and increase the risk of malnutrition and infectious disease transmission.

The annual average exposure of all people to active wildfires in Iran increased 63% in 2019-2023 compared to 2003-2007. Across the same time period, each person experienced an average 162 days with exposure to very high or extremely high risk of wildfires (indicator 1.2.1).

Each year from 2019-2023, an average 50% of Iran's land area experienced at least one month of extreme drought, while 32% experienced at least three months of extreme drought (indicator 1.2.2).

From 2018-2022, over 83 million people in Iran were exposed to dust levels that exceeded the WHO threshold at least once during the 5-year period, with nearly the entire population exposed (indicator 1.2.4).

Air pollution, energy transition and health co-benefits

The continued use of fossil fuels 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. 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.

$131.6 bn

In 2022, Iran had a net-negative carbon revenue, indicating that fossil fuel subsidies were higher than carbon prices. The country allocated a net total of over US$131.6 billion in fossil fuel subsidies in 2002 alone, an amount equivalent to 296% of the nation's health expenditure (indicator 4.3.3). (indicator 4.3.3).

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.

HEALTH IMPACTS OF AIR POLLUTION

30,800 deaths were attributable to anthropogenic air pollution ($PM_{2.5}$) in 2021. Fossil fuels contributed to 40% of these deaths (indicator 3.2.1).

US$7.6 billion was the monetised value of premature mortality due to anthropogenic air pollution in 2021 (indicator 4.1.4).

Diet, food security 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 2021, over 3,200 deaths were associated with excessive consumption of red meat and dairy, and over 31,000 deaths were associated with insufficient consumption of nutritious plant-based foods (including fruits, vegetables, legumes, wholegrains, nuts and seeds). Together, these accounted for 43% of all diet-related deaths that year (indicator 3.3.2).

In 2021, consumption of red meat and dairy led to emissions of 0.28 tCO_2e per person, 62% of total emissions using consumption-based accounting. In that year, production of red meat and dairy led to emissions of 0.26 tCO_2e per person, accounting for 67% of all agriculture production-related emissions (indicator 3.3.1).

Simultaneously, climate change exacerbates food insecurity and undernutrition by reducing crop yields, labour capacity, and access to water and sanitation, disrupting supply chains, and compromising marine resources through higher coastal sea surface temperatures, reduced oxygenation, ocean acidification, and coral reef bleaching.

0.65°C From 2021–2023, average coastal temperature exceeded the 1981–2010 average by 0.65°C (indicator 1.4.2). This shift underscores the threat to marine food security induced by climate change.