# Climate Change, Health Impacts and Health Opportunities

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## Health, Climate Change & The Lancet





## Lancet Countdown Partners





## The Five Working Groups of the Lancet Countdown









# 1.1: Heat and Health

Health outcomes: heat exhaustion, heat stroke, AKI, exacerbated CVD, violence.

Vulnerabilities: <1, >65, chronic medical conditions, urbanisation, poverty.

Europe remains the most vulnerable region to the health effects of heat exposure.

The Western Pacific, South-East Asian and African Regions have all seen a dramatic increase in vulnerability of >10% since 1990.







2018 saw 220 million additional vulnerable people exposed to extremes of heat – 11 million more than the previous record set in 2015.

Every heatwave in Europe today is made more likely and more intense by human-induced climate change.





Health outcomes: direct thermal injuries, exacerbation of acute and chronic lung diseases

1.2: Wildfires

152 out of 196 countries saw increases in populations exposed to wildfires from the early 2000s to present day. India alone experienced an annual daily population fire exposure increase of 21 million.

#### **Change in Human Exposure to Wildfires**

The increase in human exposure to wildfires (measured in 'person-days exposed') from the early 2000s to present day









Flood: direct injury, water-borne and vector-borne infectious diseases, psychological trauma.

Drought: WASH, crop yields, food security, malnutrition.

From 2000 to 2018, areas of South America have experienced significant increases in both flood and drought, with parts of Brazil experiencing a full 12 months of drought throughout 2018.

Change in the number of extreme rainfall events per year, to present day





Change in the number of drought events per year, to present day





# - 1.5: Food Security and Undernutrition

Health outcomes: stunting, wasting, micronutrient deficiencies, undernutrition attributable for over half of <5 deaths globally.

A changing climate has seen global yield potential reduce by 4% for maize, 4% for rice, 6% for winter wheat and 3% for soybean crops from the 1960s to present day.



Winter wheat







Health outcomes: dengue, malaria, West Nile Virus, Lyme disease, tick-borne encephalitis.

Vectorial capacity for the transmission of dengue was the 2nd highest on record in 2017, with 9 of the 10 most suitable years occurring since 2000.

The global average increase above the 1950s baseline was 7.2% for Aedes aegypti and 9.8% for A. albopictus.

#### Climate Suitability for the Transmission of Dengue



Change observed from a 1950s baseline to present day





#### **Climate Suitability for Vibrio Outbreaks**

Change observed in the percentage of suitable coastal area from the 1980s to present day



Health outcomes: gastrointestinal diseases, cholera, wound infections, septicaemia.

The percentage of coastal area suitable for *Vibrio* infections has increased by 31% in the Baltic and 29% in the US North East since the 1980s.

The number of suitable days per year in the Baltic for *Vibrio* infections reached 107 in 2018, the highest since records began.





### Migration

Influenced by social, demographic, political, economic and environmental factors.

Slow-onset exposures: sea level rise, changing ice conditions, coastal erosion, drought, loss of arable land, food insecurity

Fast-onset exposures: floods, storms

Health outcomes from forced displacement: diarrhoeal diseases, respiratory infections, skin • infections, mosquito-borne diseases





Exposures: high temperatures and heatwaves, extreme weather events, drought, loss of livelihood, migration.

Health outcomes: distress, anxiety, depression, posttraumatic stress disorder, violence, suicide.





# The Response

#### **INDICATORS OF ADAPTATION, PLANNING, & RESILIENCE FOR HEALTH**







Countries are beginning to prepare for the health risks of climate change, with half of countries surveyed reporting having a national health and climate change plan in place.

48 of 101 countries surveyed in 2018 had completed a national assessment of health vulnerability to climate change.

40% of these assessments have influenced the allocation of resources.



#### **INDICATORS OF MITIGATION ACTIONS AND HEALTH CO-BENEFITS**



FOUNDATIONS OF GOOD HEALTH



## 4.2: Economic Costs of Air Pollution





In Europe improvements in particulate air pollution from human activity were seen from 2015 to 2016.

Sustaining this progress into the future would lead to an annual saving of €5.2 billion from reductions in Years of Life Lost.

2015 2016



# Thank you Dr Alice McGushin Programme Manager The Lancet Countdown

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# THE LANCET



