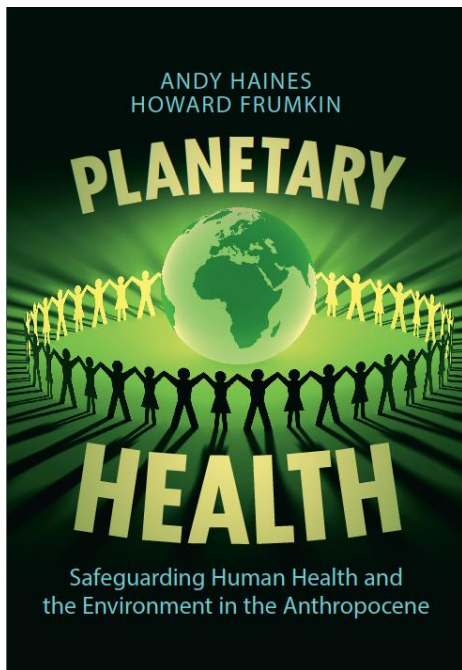


Planetary Health—safeguarding health in a time of environmental change.



LONDON
SCHOOL of
HYGIENE
& TROPICAL
MEDICINE



Climate Change
& Planetary
Health



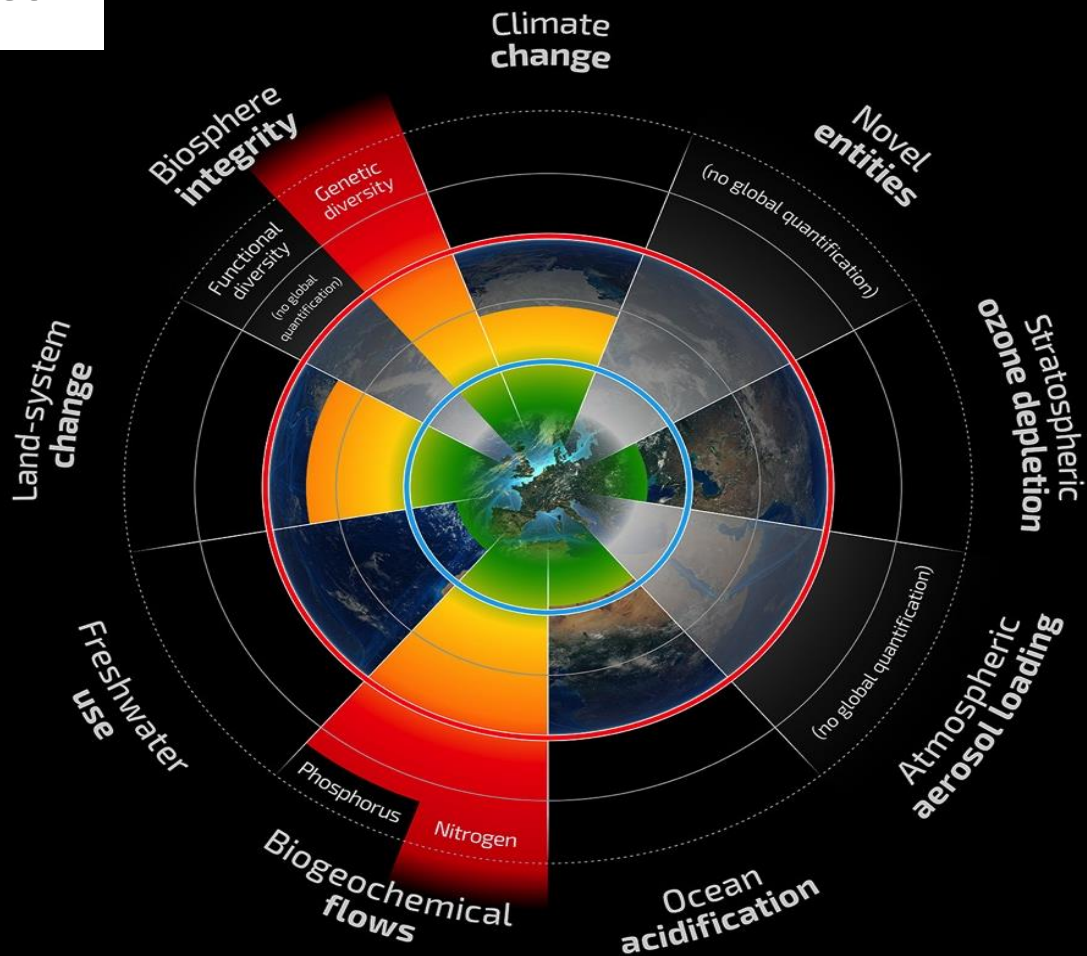
lshtm.ac.uk/planetaryhealth

@LSHTM_Planet

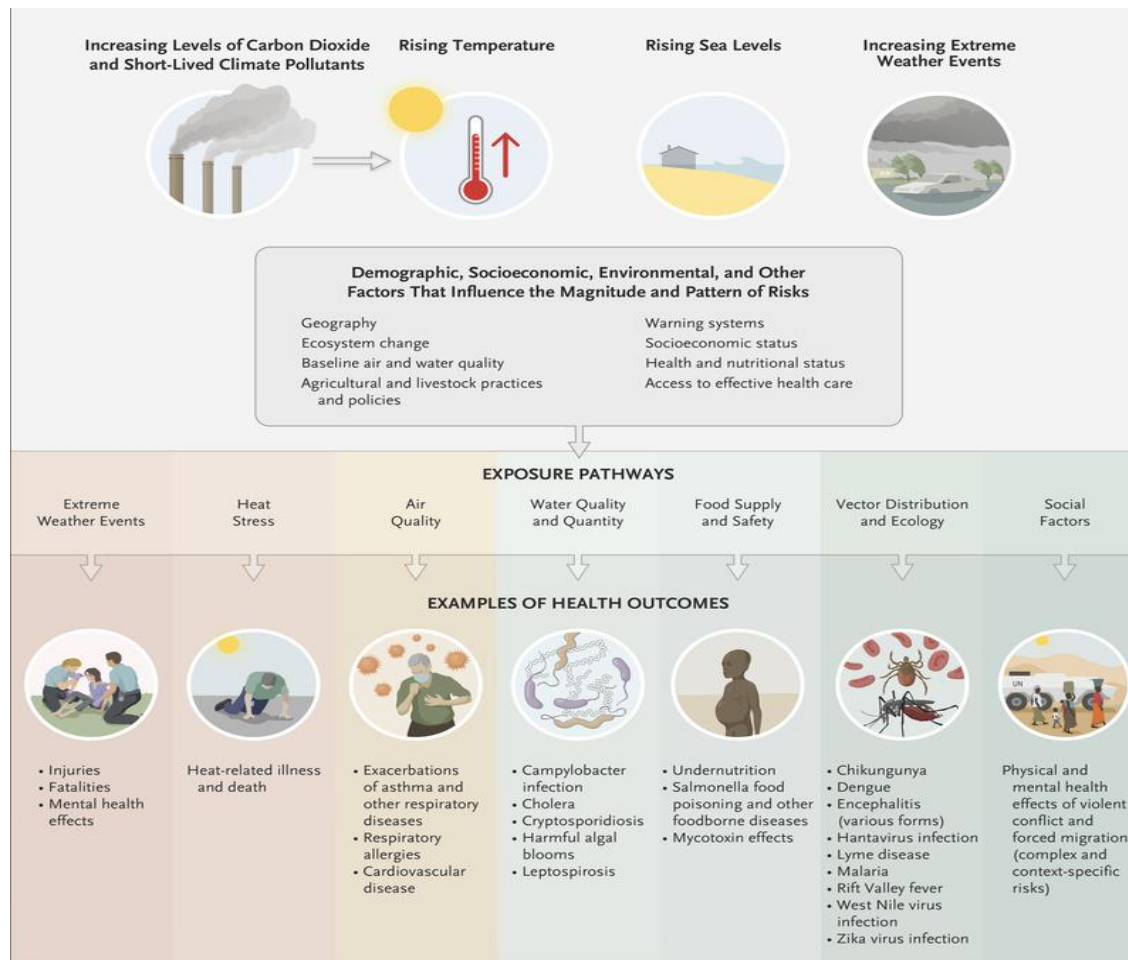
Andy Haines

Planetary boundaries

(Steffen et al Science 2015)



Climate change and health- exposure pathways and health outcomes (Haines and Ebi NEJM 2019)

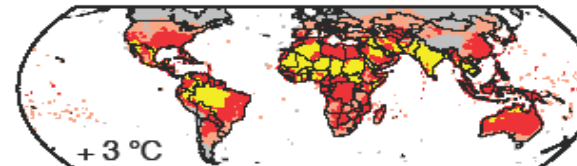
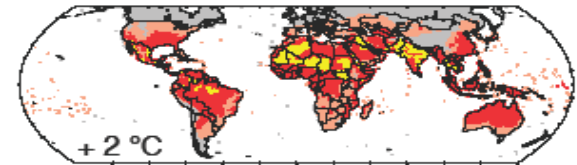
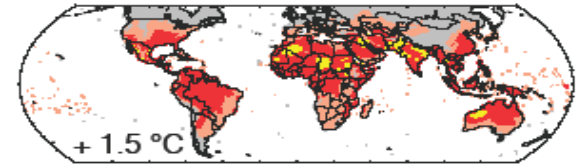
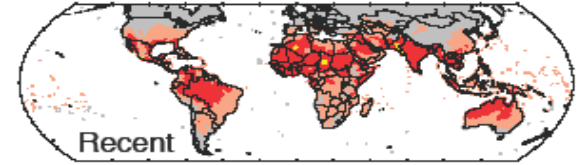


~1 billion people exposed to extreme heat preventing safe moderate physical labour in the hottest month after global temperature $>2.5^{\circ}\text{C}$ above pre-industrial



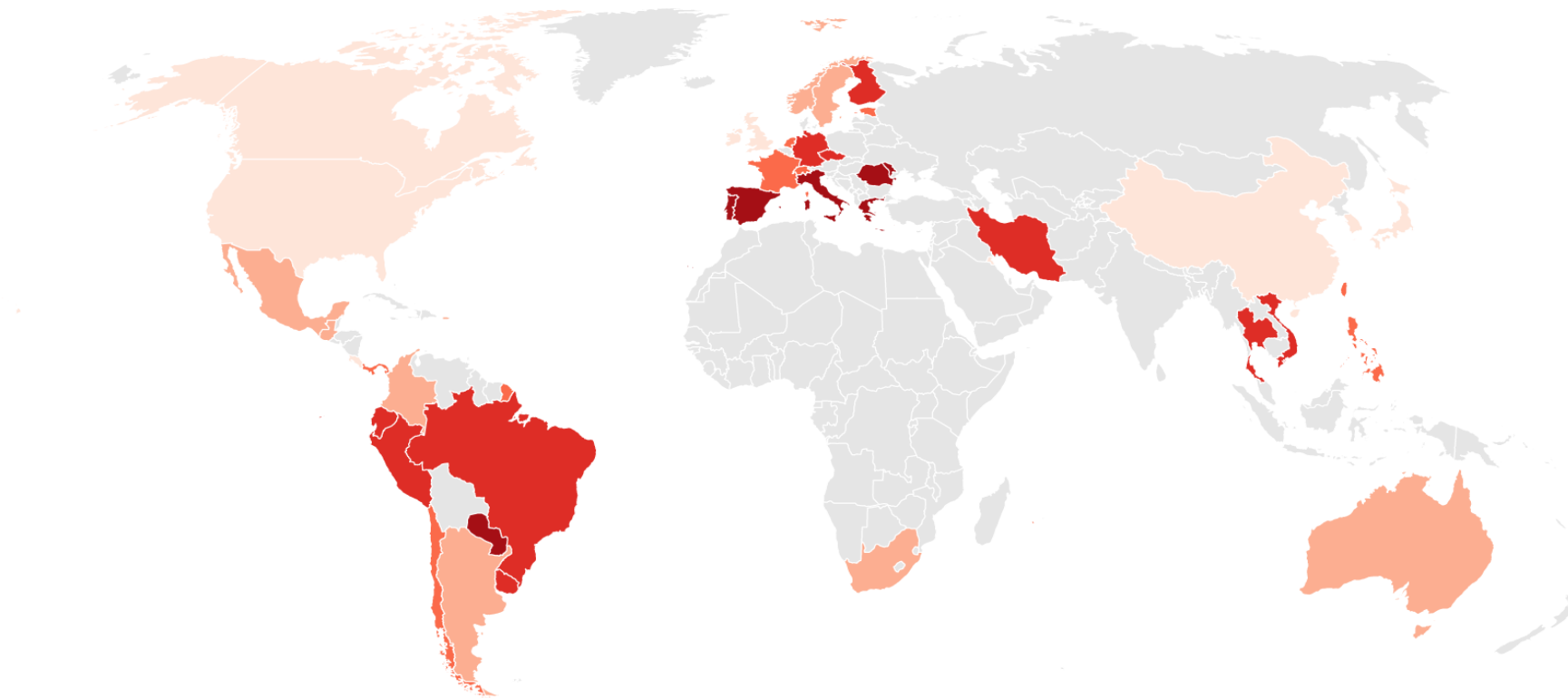
**(Andrews et al 2018
Lancet Planetary Health)**

Extreme heat exposure in pregnant women subsistence farmers in The Gambia (Ana Bonell et al Lancet Planetary Health 2022)



More than 35% of the total heat deaths from 1990-2018 attributed to human-induced climate change using data from 732 sites in 43 countries. No data for much of Africa and Asia

(Vicedo-Cabrera et al Nature Climate Change 2021).

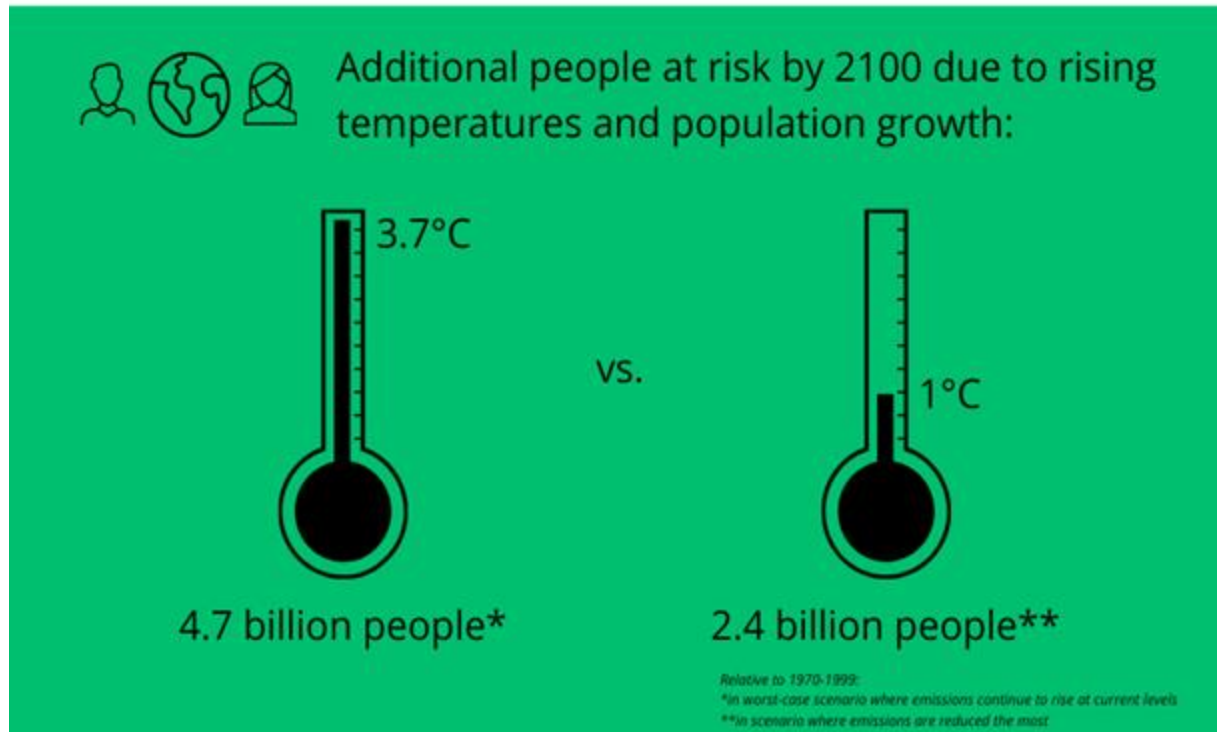


Heat-related mortality rate attributed to human-induced climate change (per 100,000)



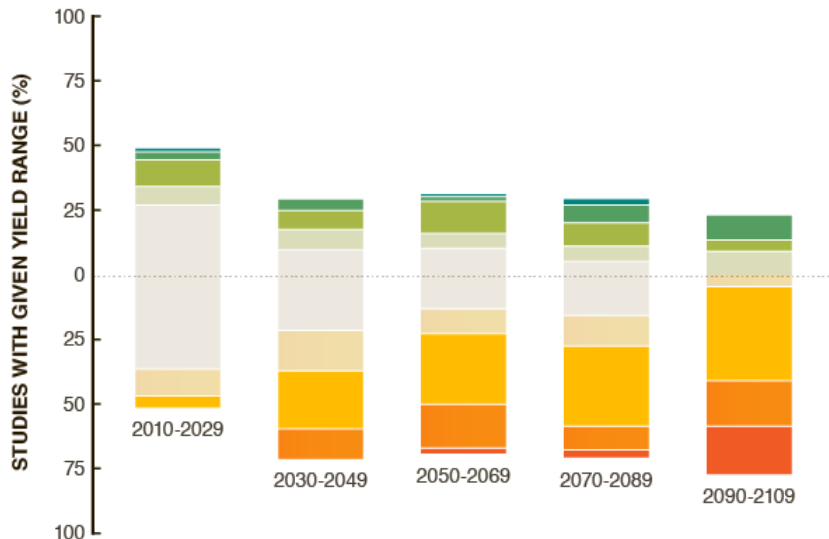
Future risk of mosquito-borne diseases in a hotter world

Global warming, malaria and dengue



The majority of modeling studies agree that climate change impacts on crop yields will be negative from the 2030s onwards. Nearly half of projections beyond 2050 indicate yield **DECREASES GREATER THAN 10%.**

PROJECTED YIELD CHANGE (%)



Source: Challinor et al. 2014

BIG FACTS

ccaafs.cgiar.org/bigfacts

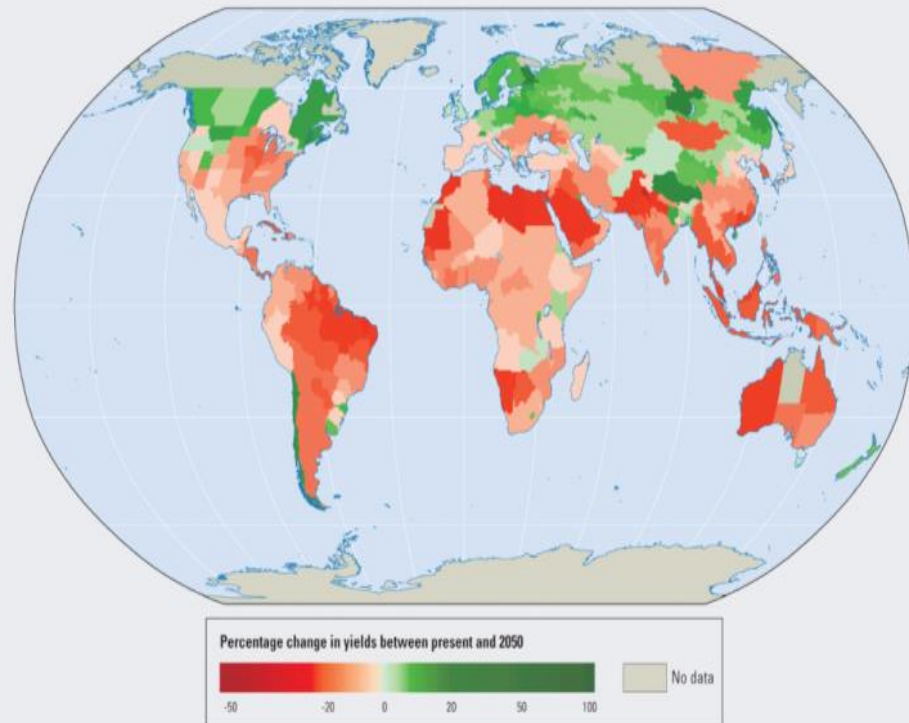


RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



Impacts of climate change on the productivity of food crops in 2050

World Bank Publishers
World bank Development report 2010
<http://wdronline.worldbank.org/>



Mental health effects of climate change (e.g. increases in common mental disorders after extreme events, solastalgia and climate anxiety)



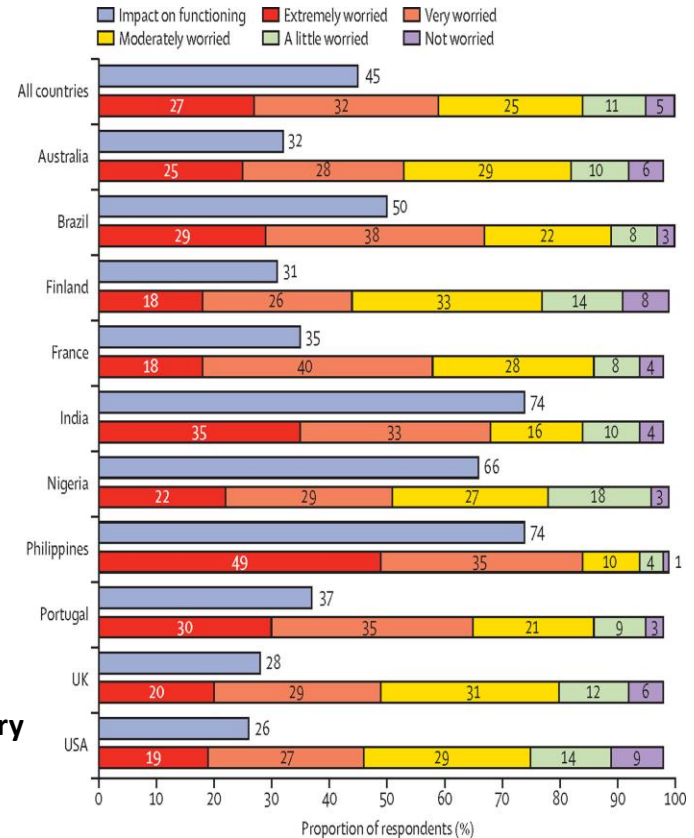
(Photo by Pedro Paulo Xerente for the Fundação Nacional do Índio, Brazil)



https://www.who.int/health-topics/floods#tab=tab_1

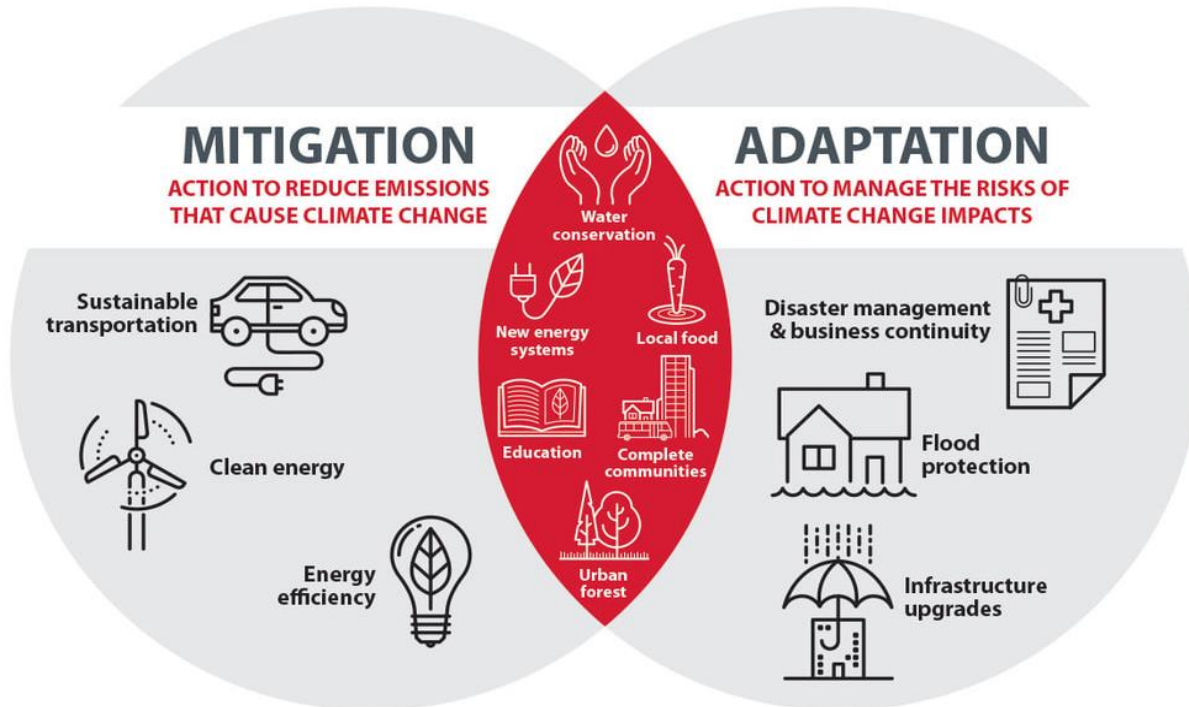
Climate anxiety in children and young people

Hickman et al Lancet Planetary Health 2021



RACGP (Image: David Mariuz)

Climate action for health



A systematic review of 1682 papers found only two studies were ex ante formal evaluations of climate change adaptation responses in Low Middle income countries . (Scheelbeek et al 2021)



The public health benefits of the Paris Agreement

(Hamilton et al Lancet Planetary Health 2021)



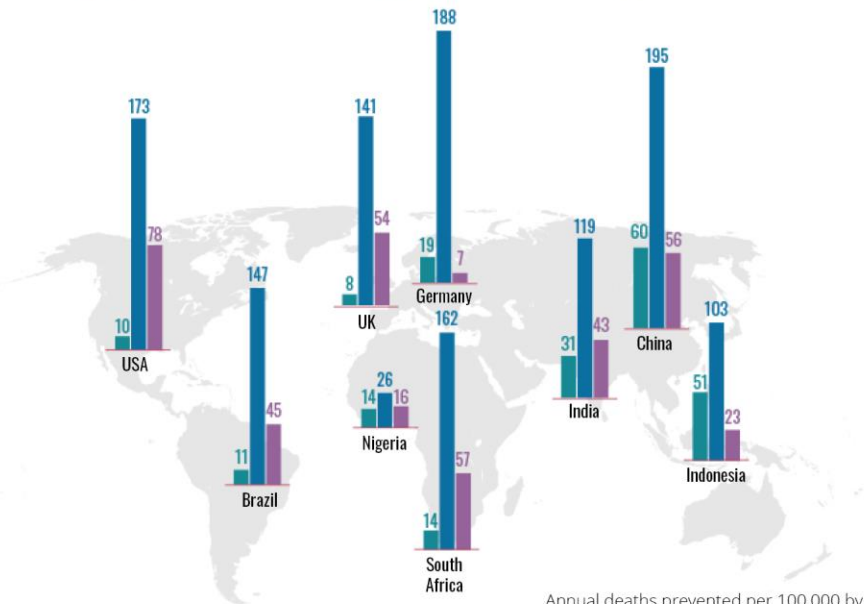
Reduced
air pollution



Improved
diets



Increased
physical activity



Annual deaths prevented per 100,000 by 2040,
compared to 2019/20 policies

Across the nine countries studied, by 2040, ambitious NDCs that put health at the centre of new climate policies to meet the 'well below 2°C' goals of the Paris Agreement could reduce annual deaths due to **air pollution** by over **1.6 million**, annual deaths due to diet-related risk factors by over **6.4 million**, and annual deaths attributable to **physical inactivity** by almost **2.1 million**.

Urban leadership for climate adaptation and mitigation

**Accessible
efficient public
transport and
active travel**



**Universal
access to
clean low
carbon energy**



**Safe access to
green spaces and
ecosystem
strategies for
resilience**



**Housing
Improvements
Water and
Sanitation**



Building climate resilient and sustainable low carbon health systems



- **By COP 27, 62 countries committed** to building health systems which are able to withstand the impacts of climate change and which are low carbon and sustainable. **14 countries have set a deadline of 2050 or earlier**, by which their health system will reach Net Zero emissions.

How should we spend the remaining carbon budget for health and equity?

