

Climate  
Change  
Committee

# Adapting to a Warming World – Overview of adaptation in the UK

Baroness Brown of Cambridge DBE FREng FRS FMedSci

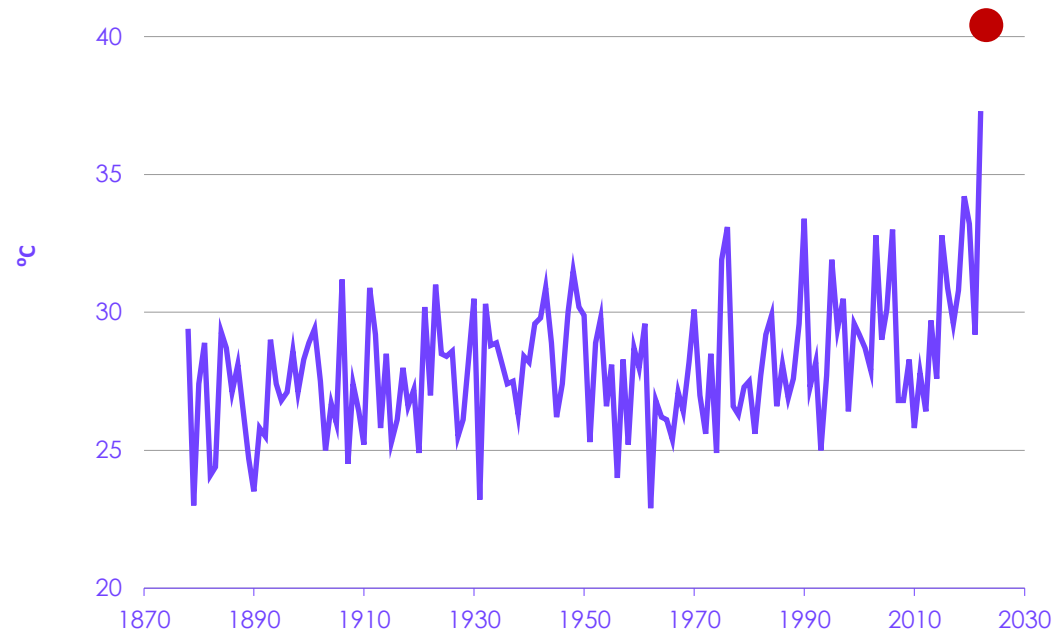
*Chair of Adaptation Committee, CCC*

Faculty of Public Health Climate and Health Meeting 21<sup>st</sup> June 2023

# The climate is changing fast

## UK weather extremes over the last year highlight the urgency of adapting to climate change

Highest annual maximum temperature in the Central England Temperature record

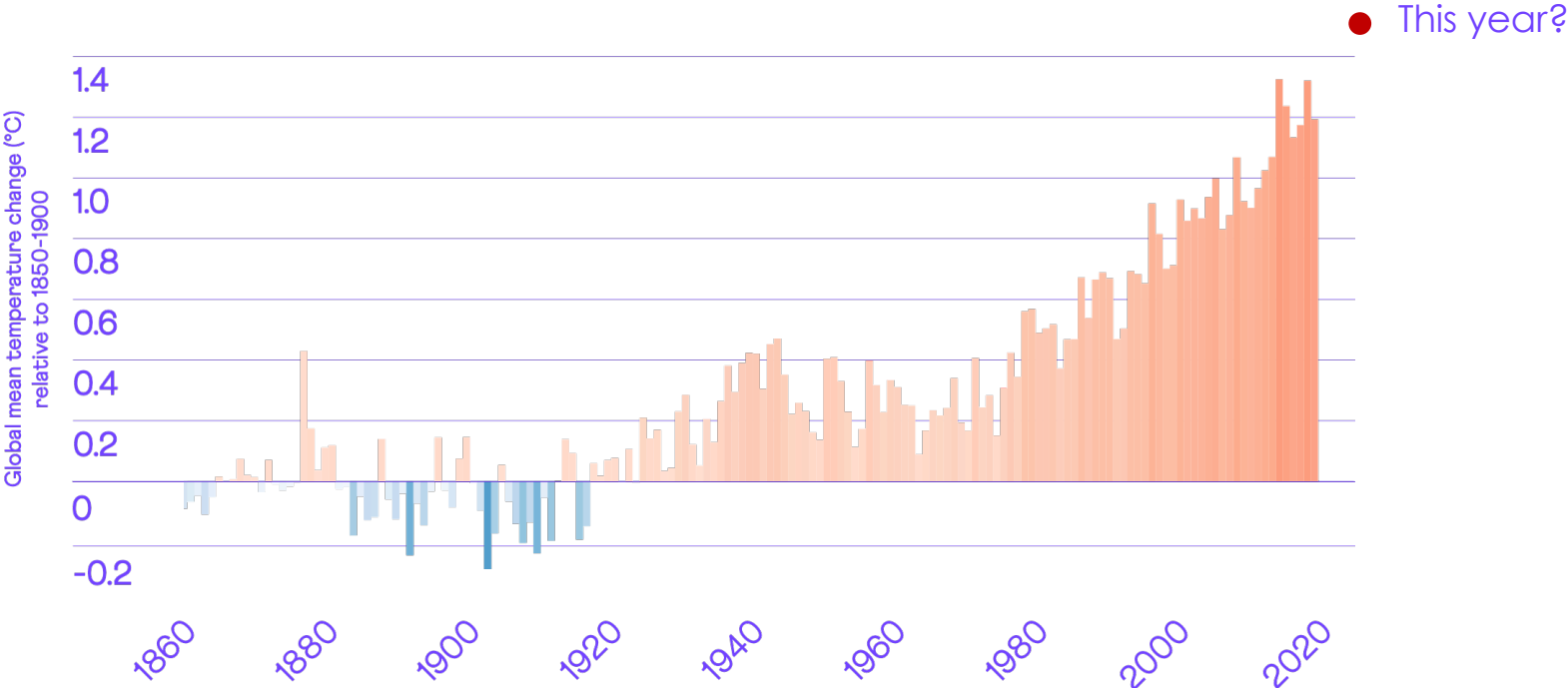


**Source:** Parker, D.E., T.P. Legg, and C.K. Folland. (1992). A new daily Central England Temperature Series, 1772-1991. *Int. J. Clim.*, Vol 12, pp 317-342.

- **Record-breaking heatwaves.** 40°C exceeded for first time in UK in July 2022 far exceeding previous record. Record heat-related deaths in 2022, the vast majority in older people.
- **Widespread drought.** 2022 was England's sixth driest summer on record. Record low-river flows and impacts on ecosystems, agriculture and water use restrictions throughout England and Wales.
- **Record number of wildfires.** The highest annual number of wildfires (>30 ha) was recorded in 2022. with several fire services coming under major pressure in mid-July.
- **Damaging winter storms.** Storm Arwen, in 2021, and three named storms within a week in February 2022 (Dudley, Eunice, Franklin) caused extensive damage to local electricity grids and flooding across the country.

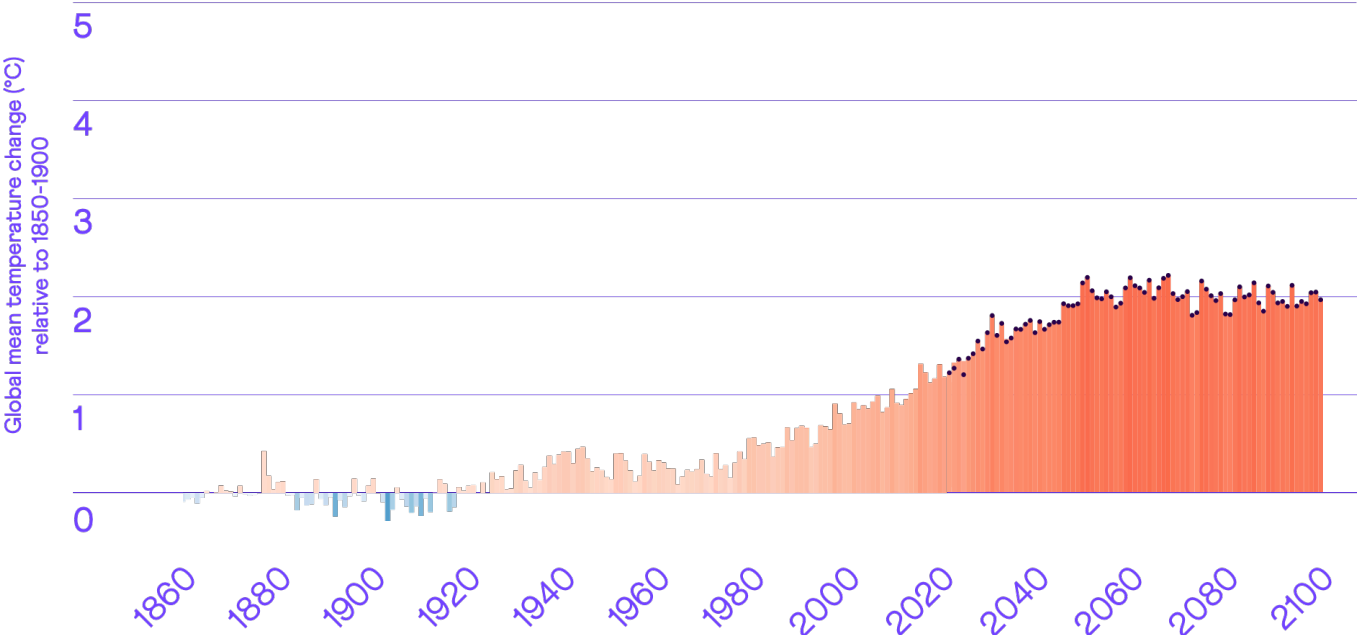
# Changes to date

## Global temperature changes since 1860



# A 'good' path to 2050

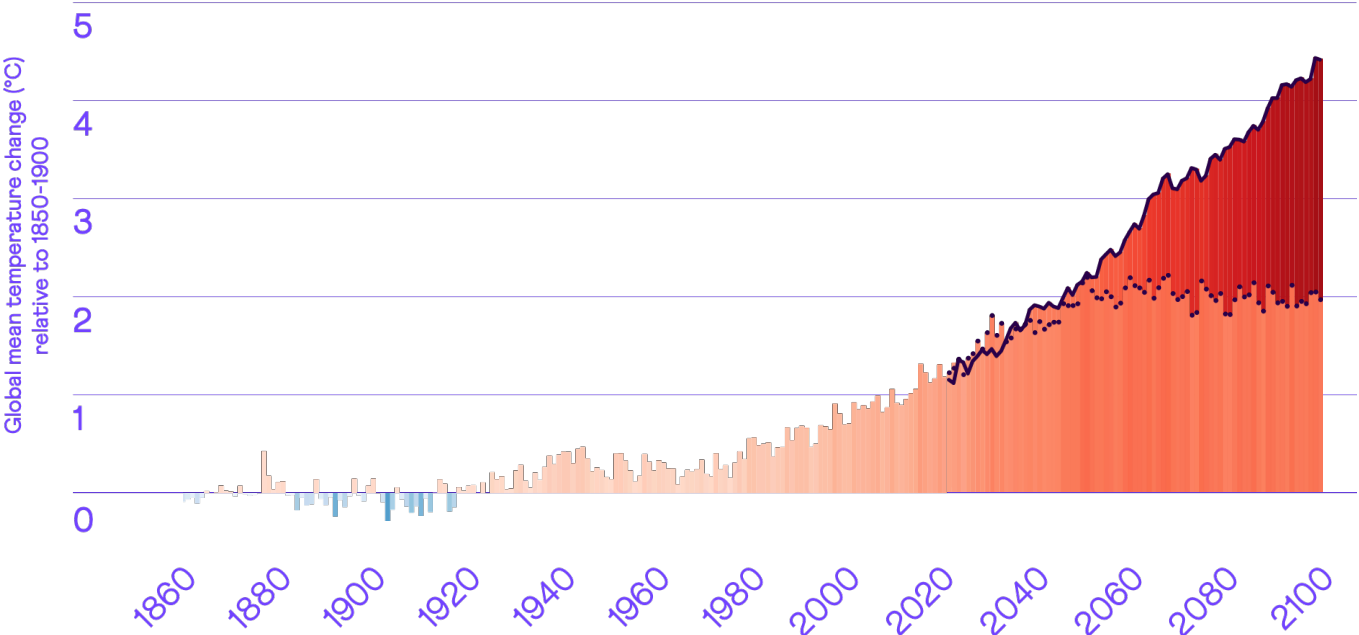
## Global temperature changes since 1860



Example climate future with global warming limited to 2°C by 2100

# Lack of concerted global action

## Global temperature changes since 1860



Example climate future possible with current worldwide policies

# The UK's changing climate

Further climate change is inevitable

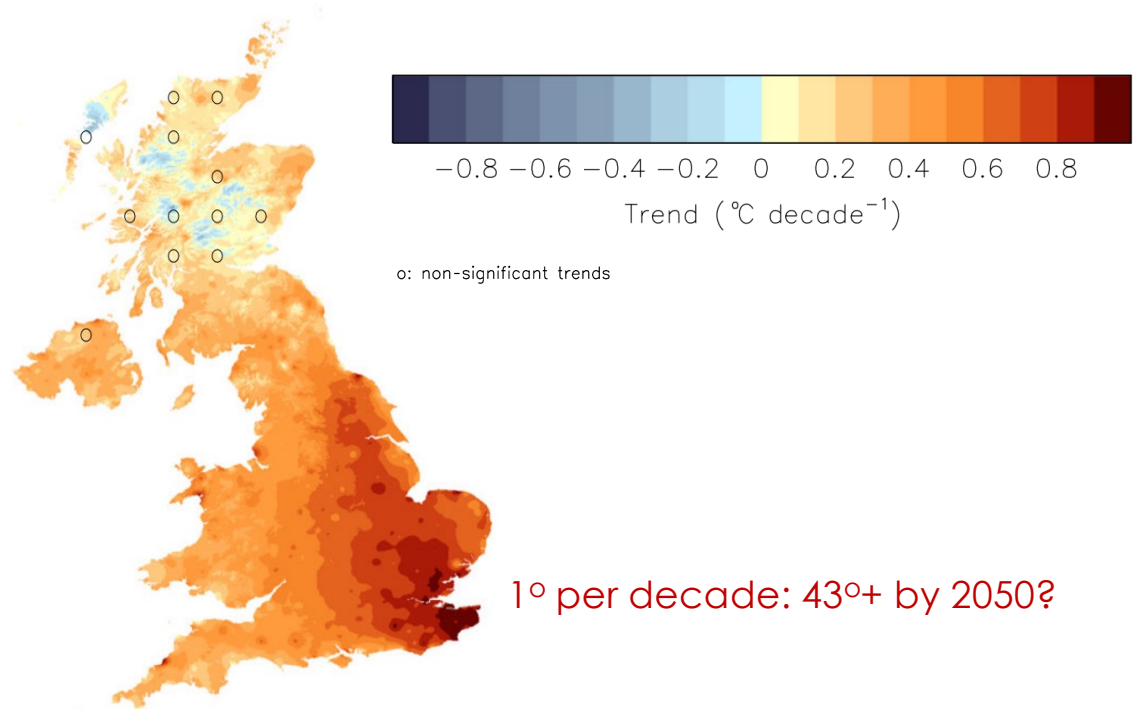
	Observed change to date	Inevitable change by mid-century	2°C by 2100C	4°C by 2100
Average annual UK temperature	~1.2°C above pre-industrial levels	~ <b>0.6°C</b> from present	~0.7°C from present by mid-2080s	~3.0°C from present by mid-2080s
'Hot summer' occurrence	10 – 25% chance of a '2018 summer'	<b>50%</b> chance each year	50% chance each year	90% chance each year
Average summer rainfall	No significant long-term trend	<b>-11% (to -24%)</b>	-15% (to -28%)	-29% (-53%)
Average winter rainfall	No significant long-term trend	<b>+5 % (+16%)</b>	+6% (+18%)	+18% (+41%)
Heavy rainfall	No significant long-term trend	<b>10%</b> from present	20% from present	50% to 70% from present
Sea level rise	~16cm since 1900	<b>3 - 37 cm</b> from present by 2060	5 - 67cm from present	27 - 112cm from present

## Recent UK experience

Hottest 10 years.....

- 2018 heatwave summer typical by 2050
- Record UK temperature 40.3°C in summer 2022
- Average temperatures in Europe rising at 0.5° per decade - double the global average (WMO 2022)

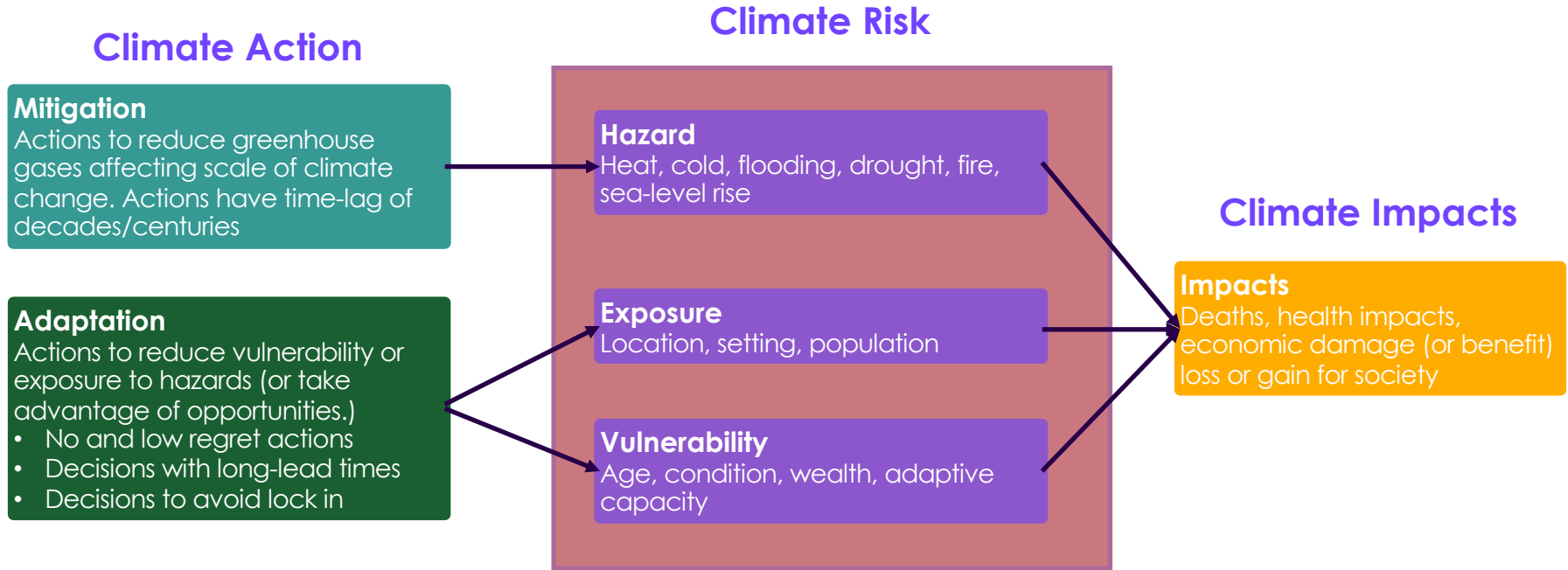
Rate of increase in hottest daytime temperatures (1960 to 2019)





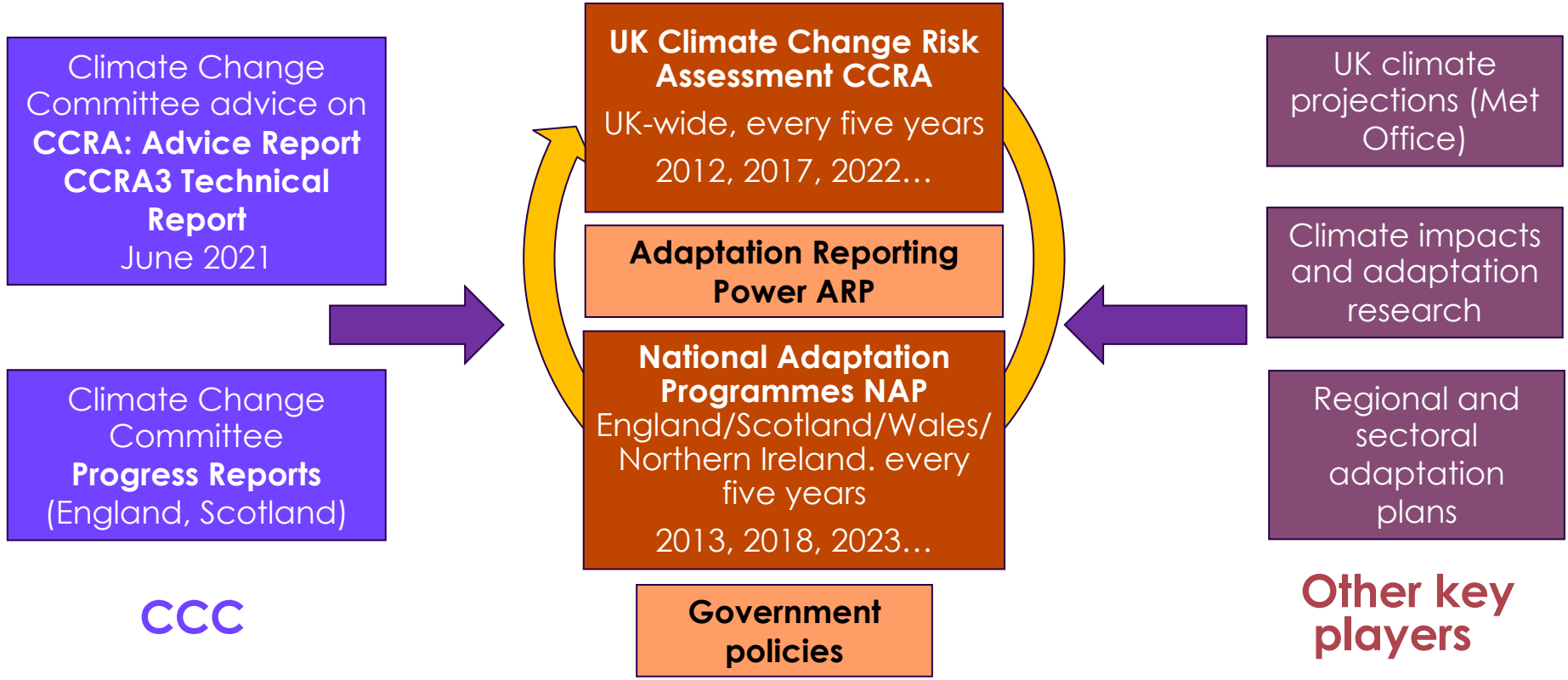
# But reducing emissions is not enough

## Mitigation and adaptation



# Adapting to climate change

The Climate Change Act 2008 introduces a robust reporting framework



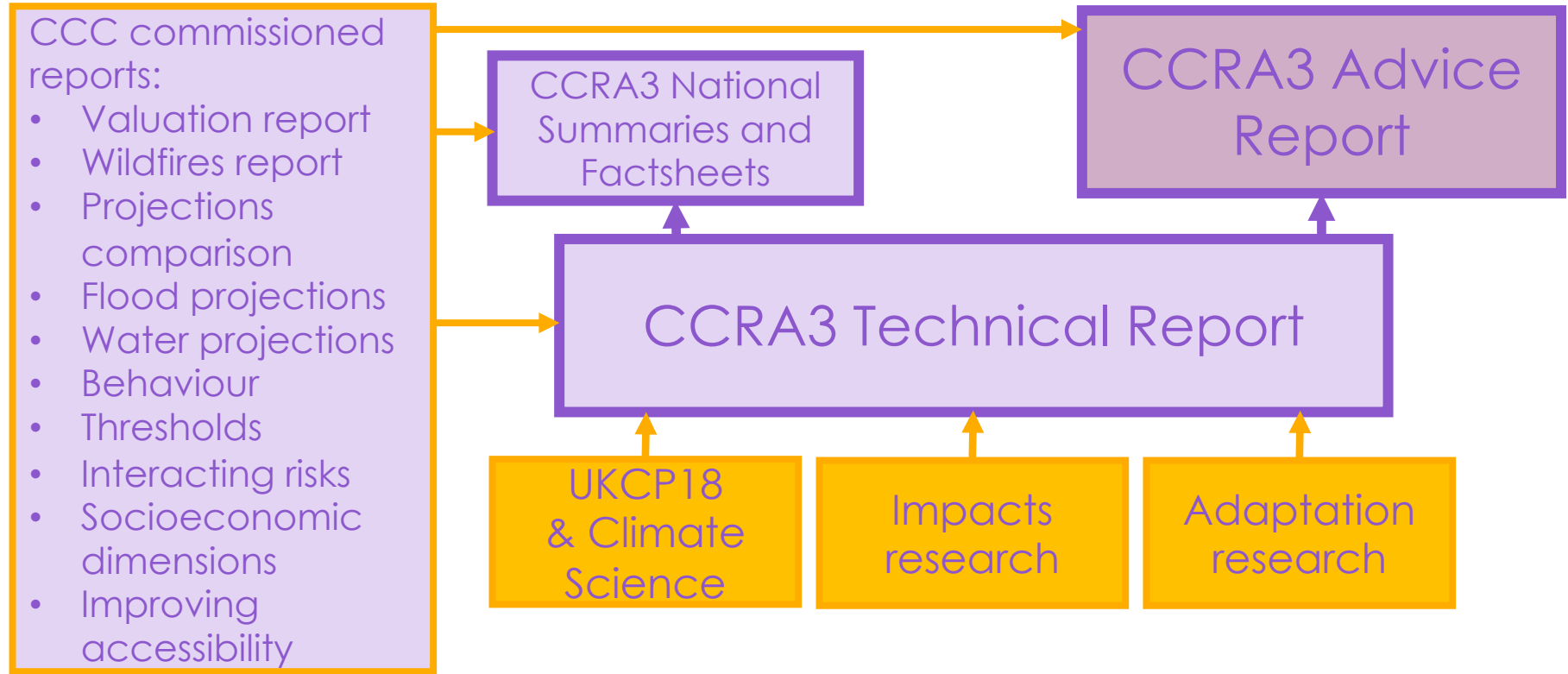
CCC

Other key players

Government

# CCRA3 Independent Assessment

Components of the CCRA3 Independent Assessment of UK Climate Risk



## CCRA3 Risks and Opportunities

61 risks and opportunities identified –  
11 related to health and social care

**H1.** Risks to health and wellbeing from high temperatures

**H2.** Opportunities for health and wellbeing from higher temperatures

**H3.** Risks to people, communities and buildings from flooding

**H12.** Risks to health and social care delivery from extreme weather

**H13.** Risks to prison and education services from extreme weather

**H7.** Risks to health and wellbeing from changes to indoor and outdoor air quality



**H8.** Risks to health from vector borne diseases

**ID9.** Risks to UK public health from climate change overseas

**H10.** Risks to health from poor water quality or supply interruptions

# Priority risks for urgent further action

## Highest priorities for further adaptation in the next two years

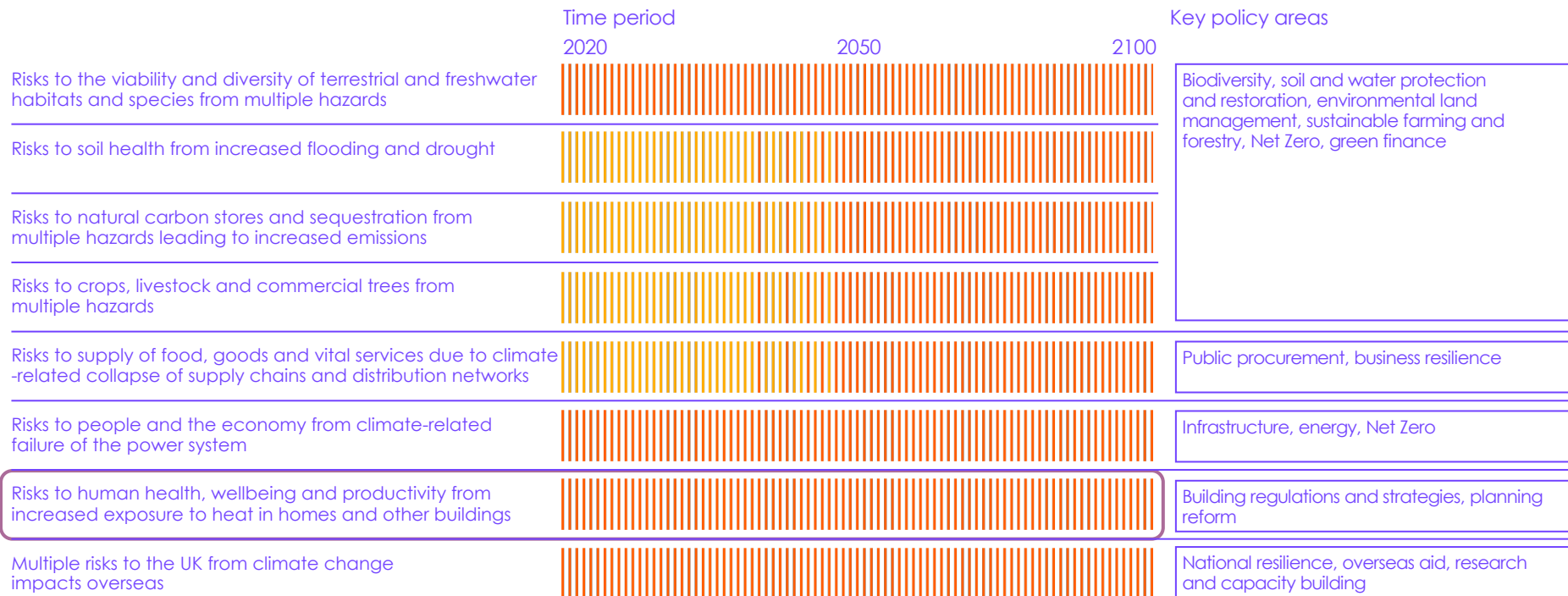
Magnitude of risk



High



Medium



# Each CCRA looks at a range of risks and benefits

## Health and social care system exposure

- Increased in heat-related deaths and illness: vulnerable people in hospitals, care homes and those receiving home-based care
- Increases in health-related impacts
  - vector-borne diseases
  - poor air quality
  - poor water quality
  - water supply interruptions as the climate changes
  - flooding
- Warmer winters should reduce cold-related deaths
- Health and social care assets including hospitals, GP surgeries, care homes and emergency services stations increasingly exposed to flooding
- Climate impacts on local infrastructure (e.g. flooding of roads) disrupt emergency services
- Vulnerability and exposure: significant impact on health outcomes

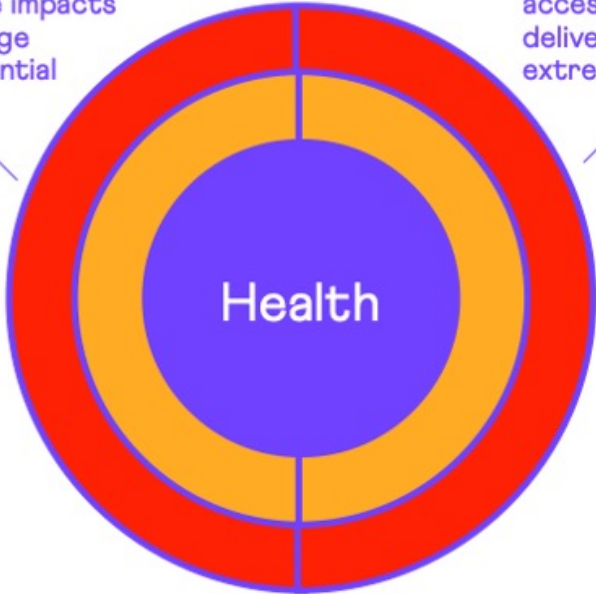


# Assessing the UK's preparedness for climate change in 2023

## Health

Protect population health from the impacts of climate change and utilise potential benefits

Quality and accessible healthcare delivery during extreme weather



Plans & Policies  
*(inner ring)*

Delivery & Implementation  
*(outer ring)*



Credible policies & plans



Partial policies & plans



Limited policies & plans



Insufficient policies & plans



Good progress



Mixed progress



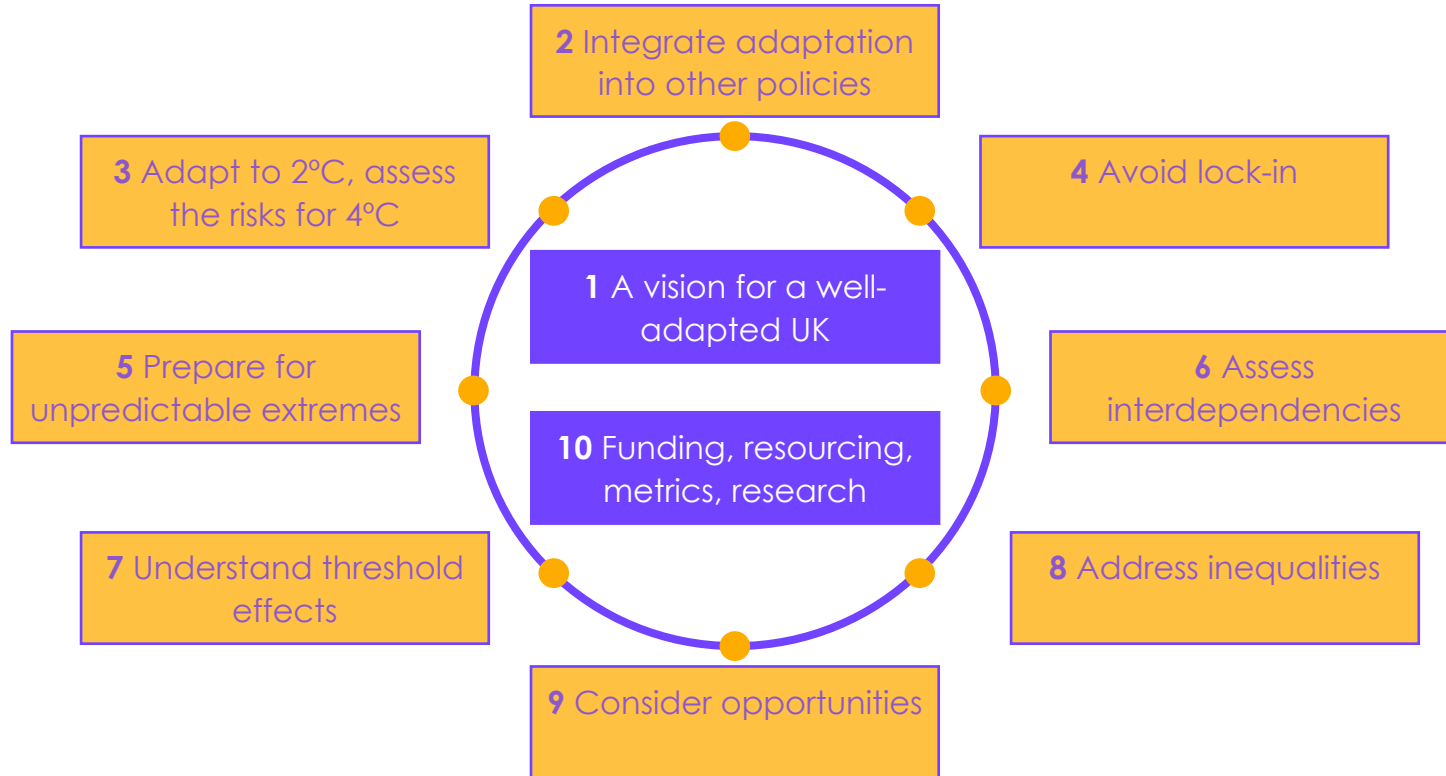
Insufficient progress



Unable to evaluate

# Ten principles for effective adaptation

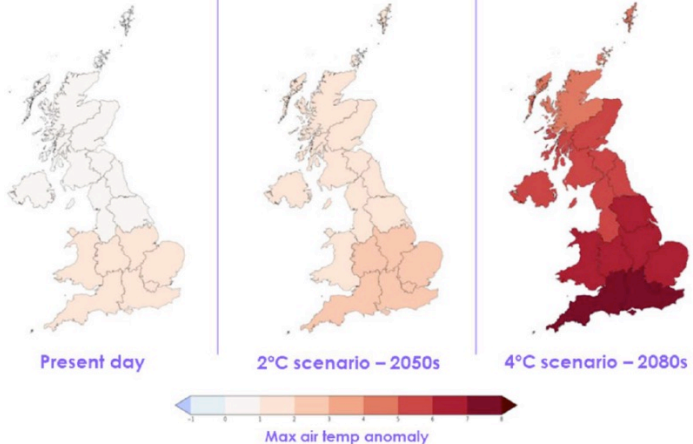
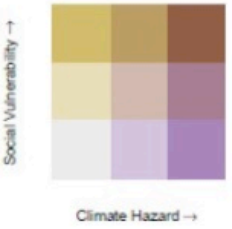
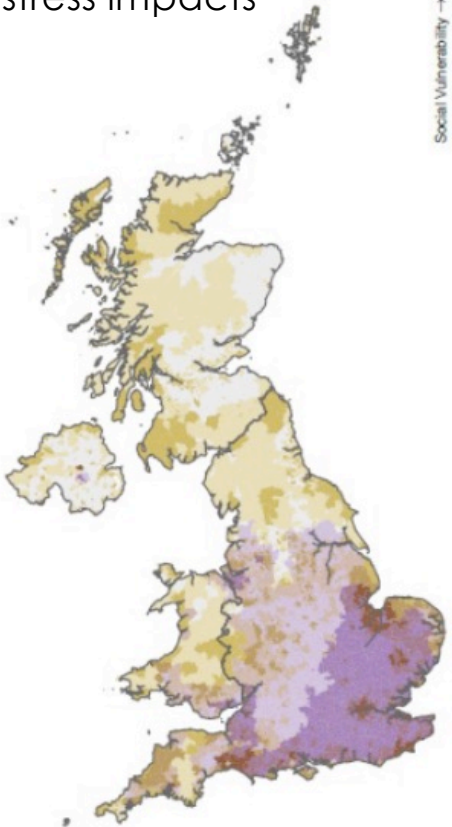
Still largely missing from UK adaptation policy





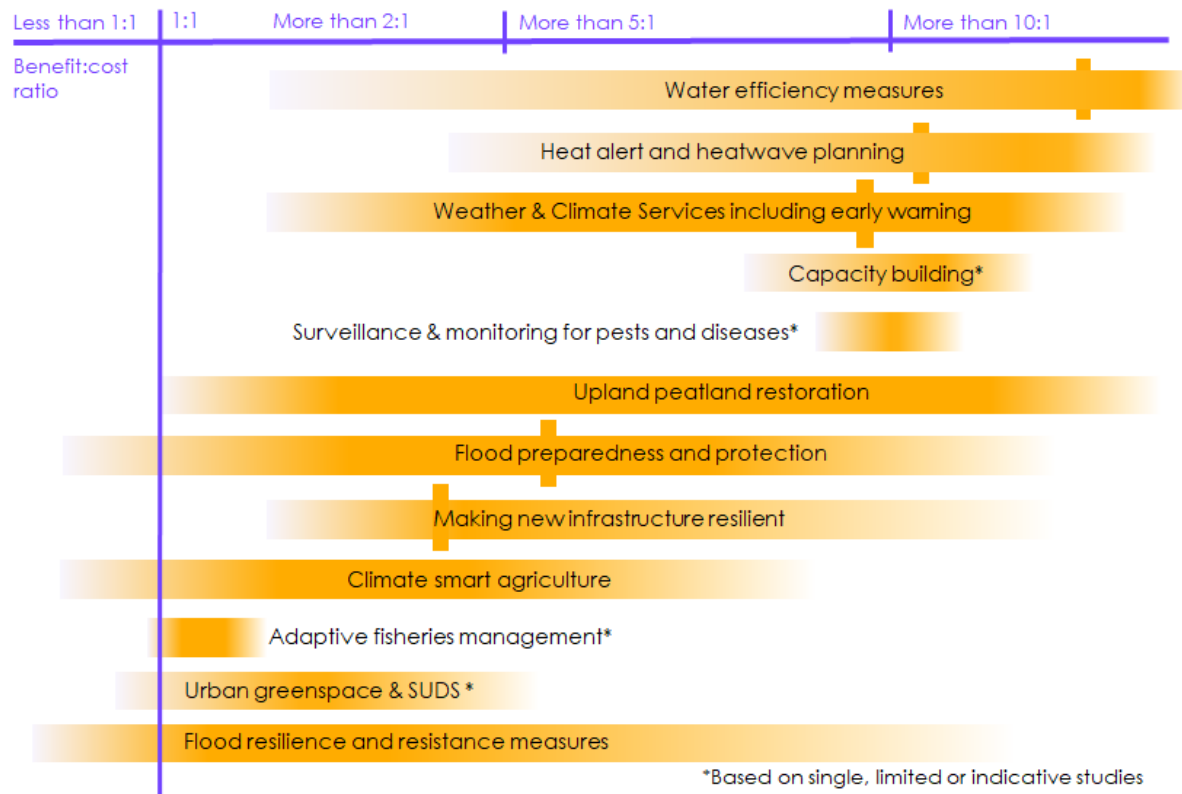
# Address inequalities

## Vulnerability to heat stress impacts



2050 3°C pathway

# The net benefits of adaptation are high

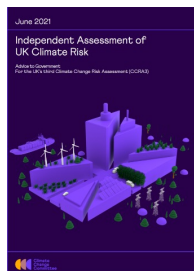


## Principles for risk assessment and adaptation planning

Adapt to 2°C; assess the risks for 4°C

- Plan for **continued change** in the UK's climate
- **Long-lasting policy/investment decisions** made today must consider a wide range of changes in climate for the second half of the century
- Global emissions pathways have a strong effect on possible climates post 2050 - use a range of outcomes spanning at least **2°C to 4°C by 2100** to assess longer term adaptation needs
- Longer-term strategic thinking – make the case for enhanced **emergency planning** whilst embedding a longer-term **prevention** focussed approach
- **Systems approach** – identify potential interdependencies
- Identify populations and communities most **vulnerable** to climate change
- **Collaborate**: local government and the NHS to understand local risks and to identify opportunities for action that aligned with local priorities

## Useful CCC resources



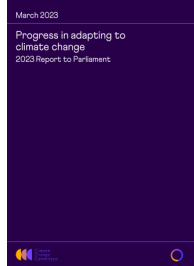
CCC: Independent Assessment of Climate Risk

<https://www.theccc.org.uk/publication/independent-assessment-of-uk-climate-risk>



Third Climate Change Risk Assessment Technical Report (Chapter 5: Health, Communities and the Built Environment)

<https://www.ukclimaterisk.org/>



CCC: progress in adapting to climate change

[www.theccc.org.uk/wp-content/uploads/2023/03/WEB-Progress-in-adapting-to-climate-change-2023-Report-to-Parliament.pdf](http://www.theccc.org.uk/wp-content/uploads/2023/03/WEB-Progress-in-adapting-to-climate-change-2023-Report-to-Parliament.pdf)

## Contact us

1 Victoria Street  
Westminster, London  
SW1H 0ET

@theCCCuk