

Evidence and Adaptation Policy in the United Kingdom

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Evidence to argue the need for policy



An Example of communicating evidence– UK Climate Projections



Evidence to inform how policy should be shaped

Using Evidence for WHY we need to adapt

$$\begin{array}{ccc} \text{IMPACT} & = & \\ \text{GOOD EVIDENCE (not just good science!)} & & \\ + & & \\ \text{COMMUNICATION} & & \\ + & & \\ \text{RELEVANCE} & & \end{array}$$

RELEVANCE



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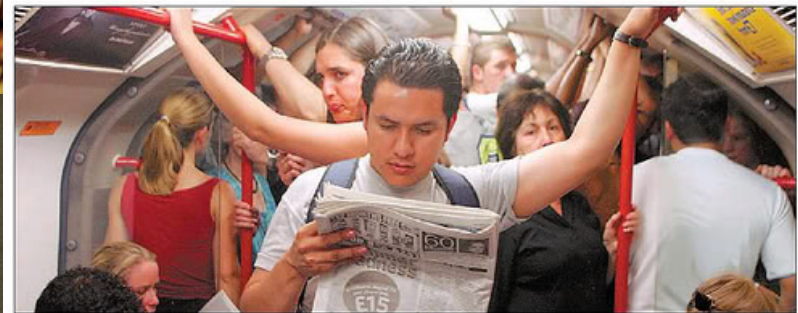
RELEVANCE



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52° ON BUSES



Sweltering: passengers on the Tube are suffering conditions officially too hot for the transport of cattle. Tomorrow could be the hottest day ever, with the temperature likely to hit 38C

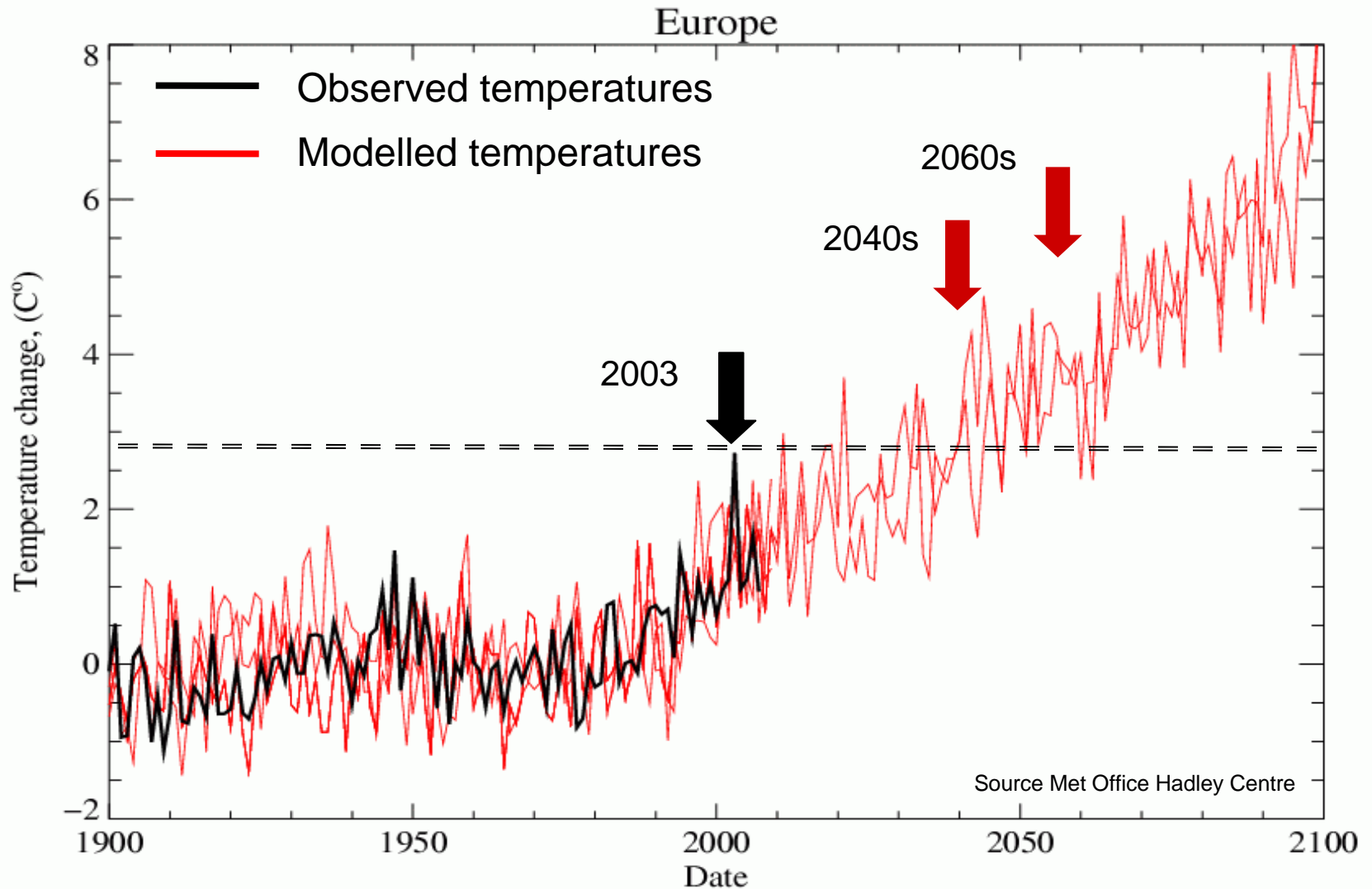
47° ON TUBE

Heatwave sends temperatures to twice limit for cattle

GOOD COMMUNICATION- CLEAR MESSAGES WORK



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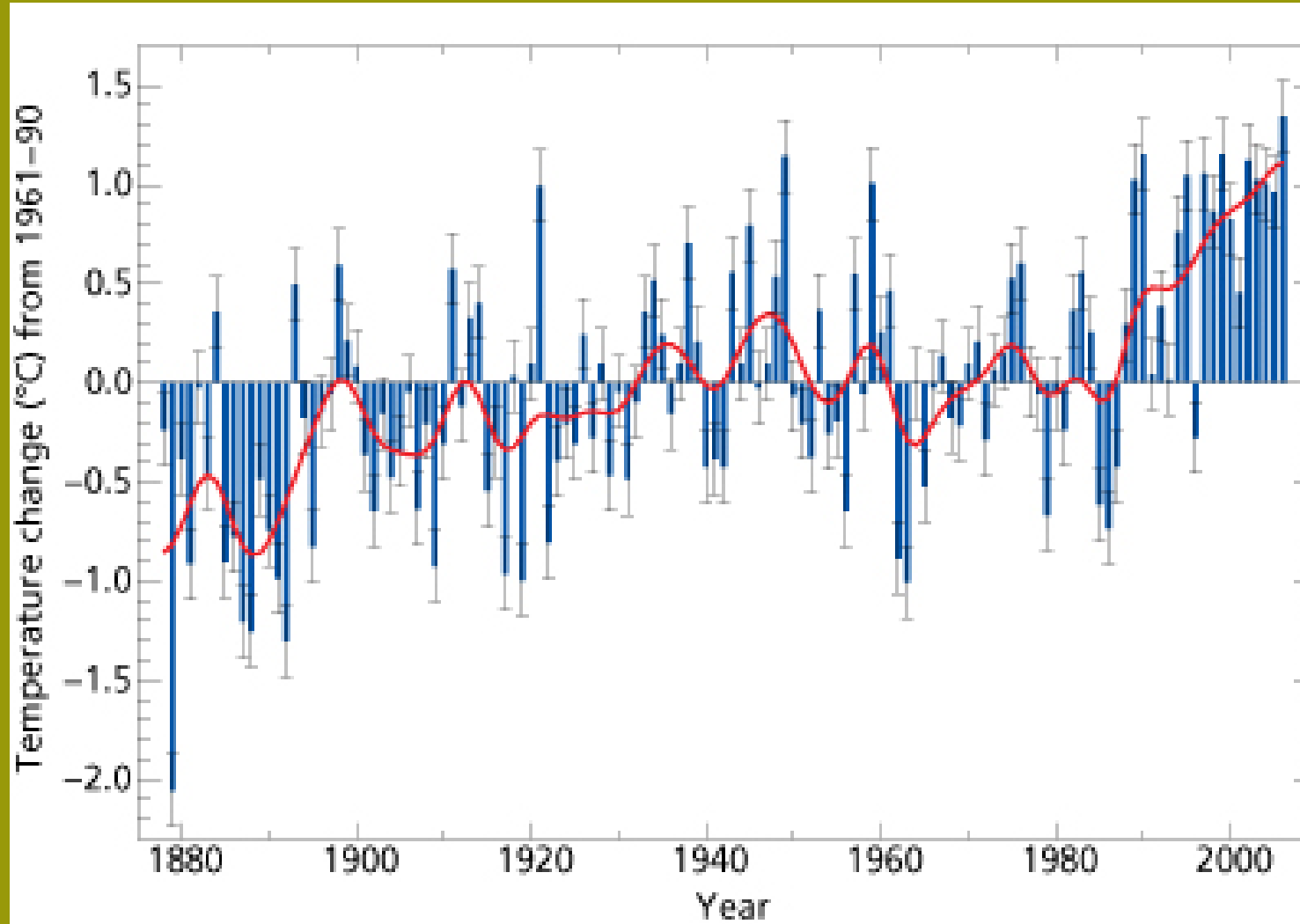


GOOD COMMUNICATION- TEMPERATURES ARE GOING UP...



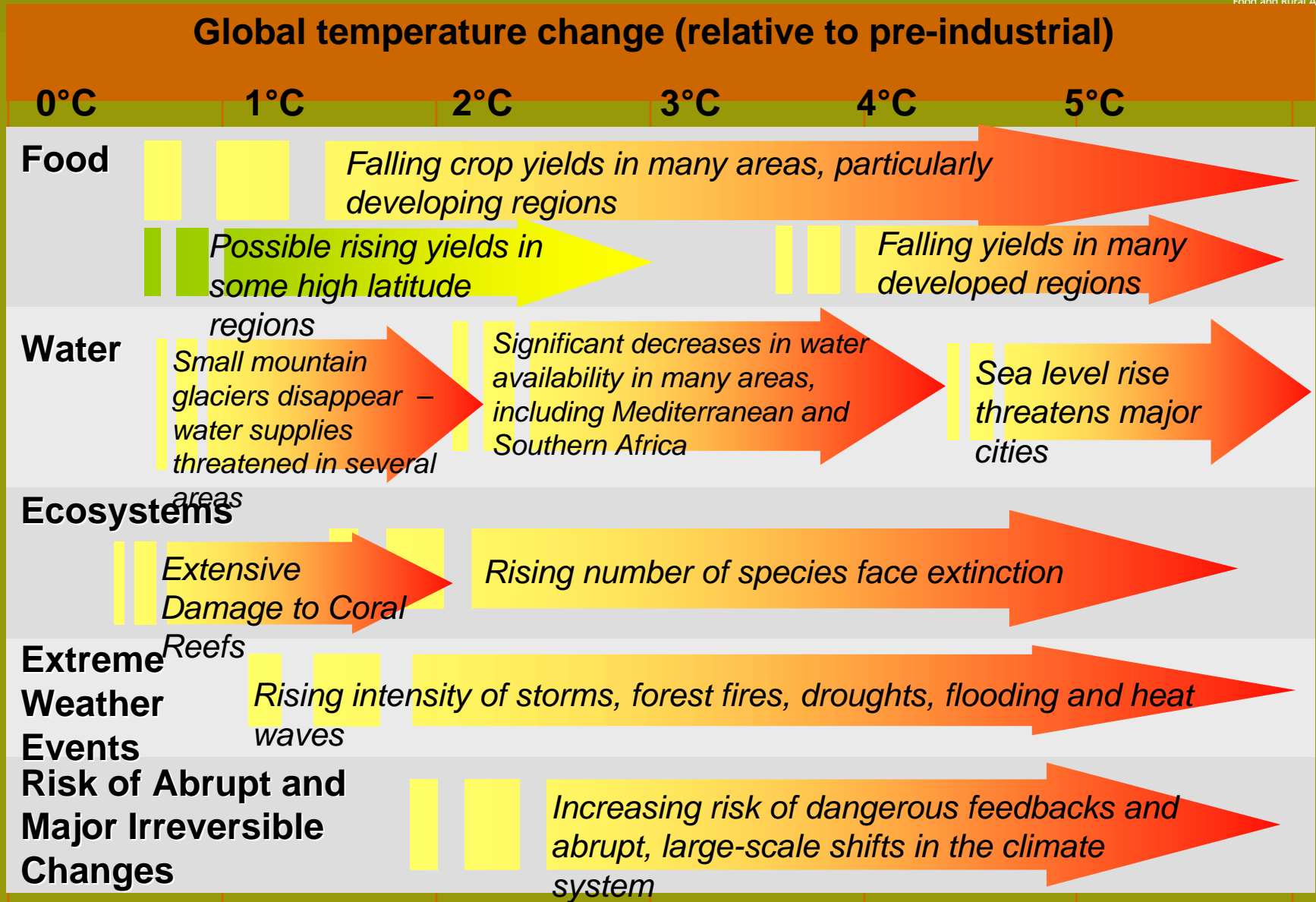
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Changes in Central England annual values (blue bars) from 1877 to 2006 relative to the average over the 1961-90 baseline period (about 9.5 °C). Error bars enclose the 95% confidence range. The red line emphasises decadal variations. (Source: Met Office Hadley Centre)

IPCC Working Group 2



WHAT DOES STERN SAY ABOUT ADAPTATION?

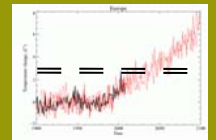
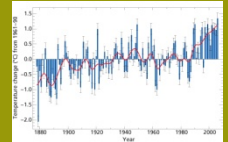
Adaptation is crucial to deal with the unavoidable impacts of climate change to which the world is already committed.

Extra costs of weather-related impacts rising rapidly. Investment is required to reduce damage. Higher temperatures will result in higher costs.

Studies in climate-sensitive sectors point to many adaptation options that will provide benefits in excess of cost. But quantitative information on the costs and benefits of economy-wide adaptation is currently limited.

NEED FOR ADAPTATION IS APPARENT

- The climate of the UK is changing now.
- Climate change is inevitable for the next 30 years, regardless of mitigation efforts.
- The sorts of events we expect to see an increase in will have a major impact on the UK.
- It is **NECESSARY** to plan adaptation to climate change into existing policies.





Evidence to argue the need for policy



An Example of communicating evidence – UK Climate Projections



Evidence to inform how policy should be shaped

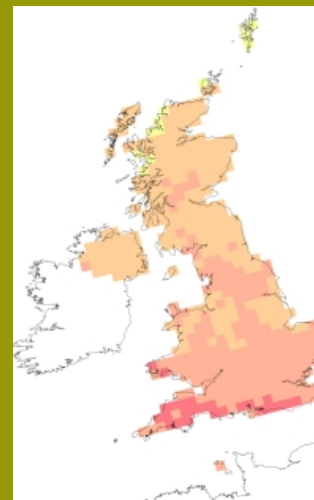
UKCP09 WAS USED TO PRESENT A 5 POINT CLIMATE PLAN....

- Global deal at **Copenhagen**
- Strong action to achieve UK's 80% goal
- **Prepare** for the impacts of climate change
- **Protect** the economy, people and the environment
- **Seize opportunities** for UK



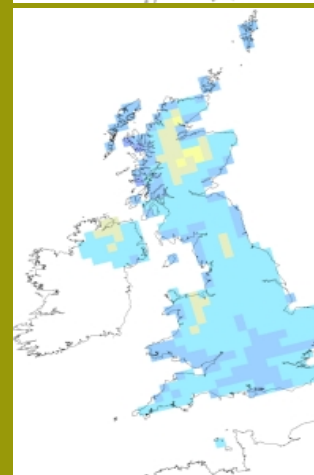
WHAT IS UKCP09?

- UKCP09 – are future projections of possible climate for the UK.
- Show us emissions - a **range of futures**
- They **quantify** probability which helps us manage **risk**, eg Thames Barrier
- Have been reviewed by **38 experts from 7 countries**



✓ **Regional variations down to 25km**

✓ **3 global emissions scenarios**



✓ **Climate until 2099**

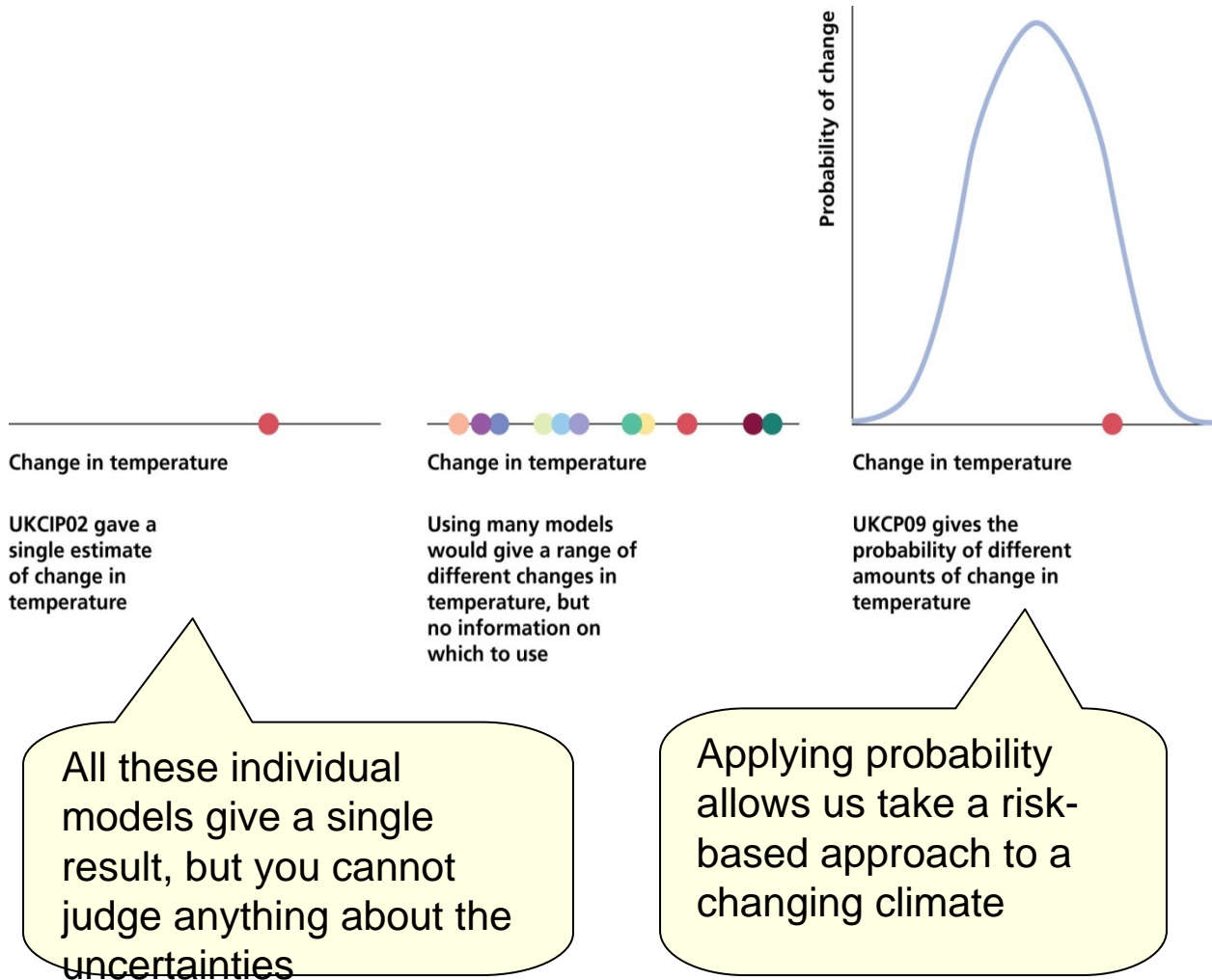
✓ **Temperature, rainfall, cloud cover, sea level**

GETTING THE MESSAGE ACROSS- EXPLAINING PROBABILITY



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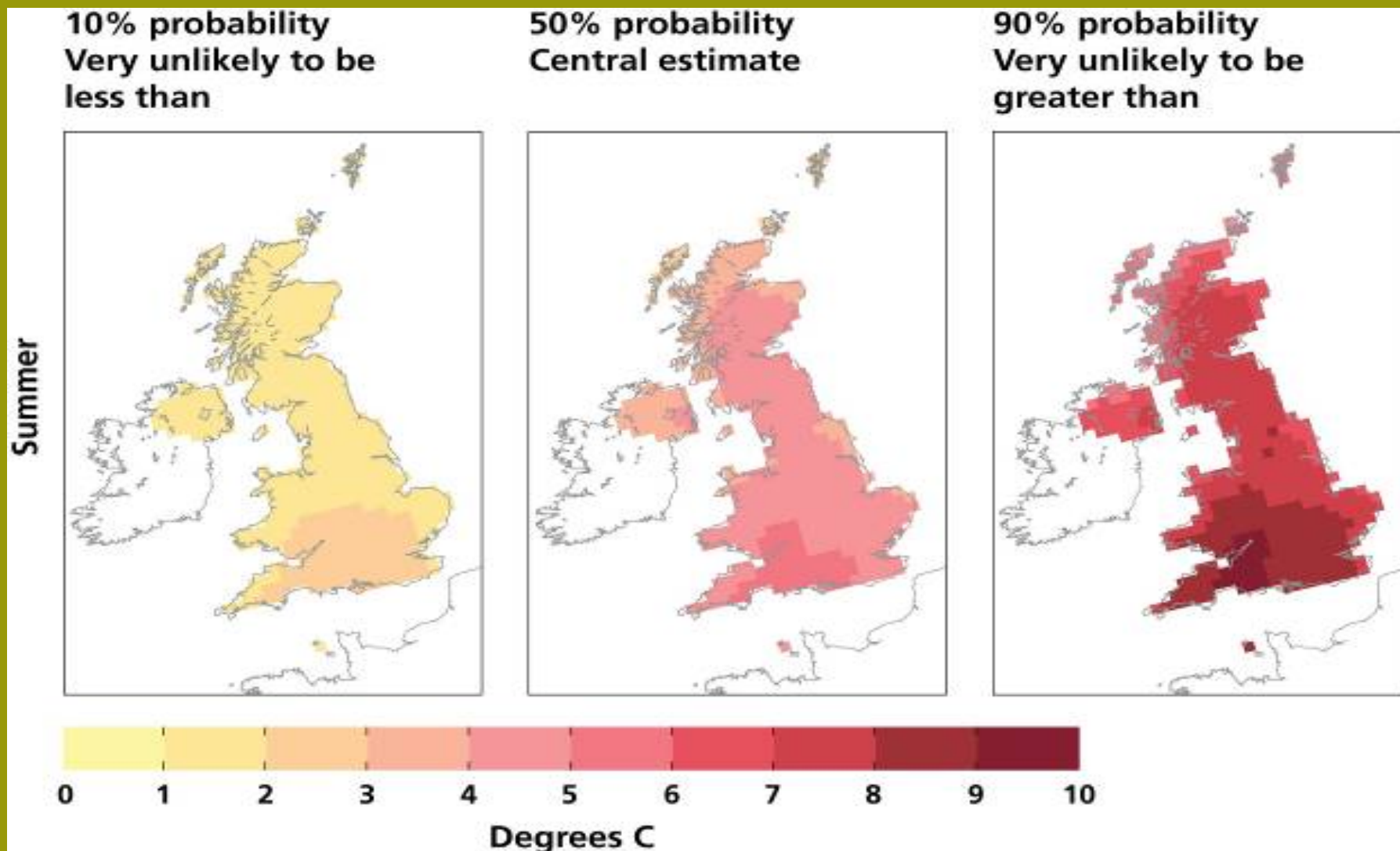
We can use other examples to explain the use of probability. Is the a measure of the strength of evidence.



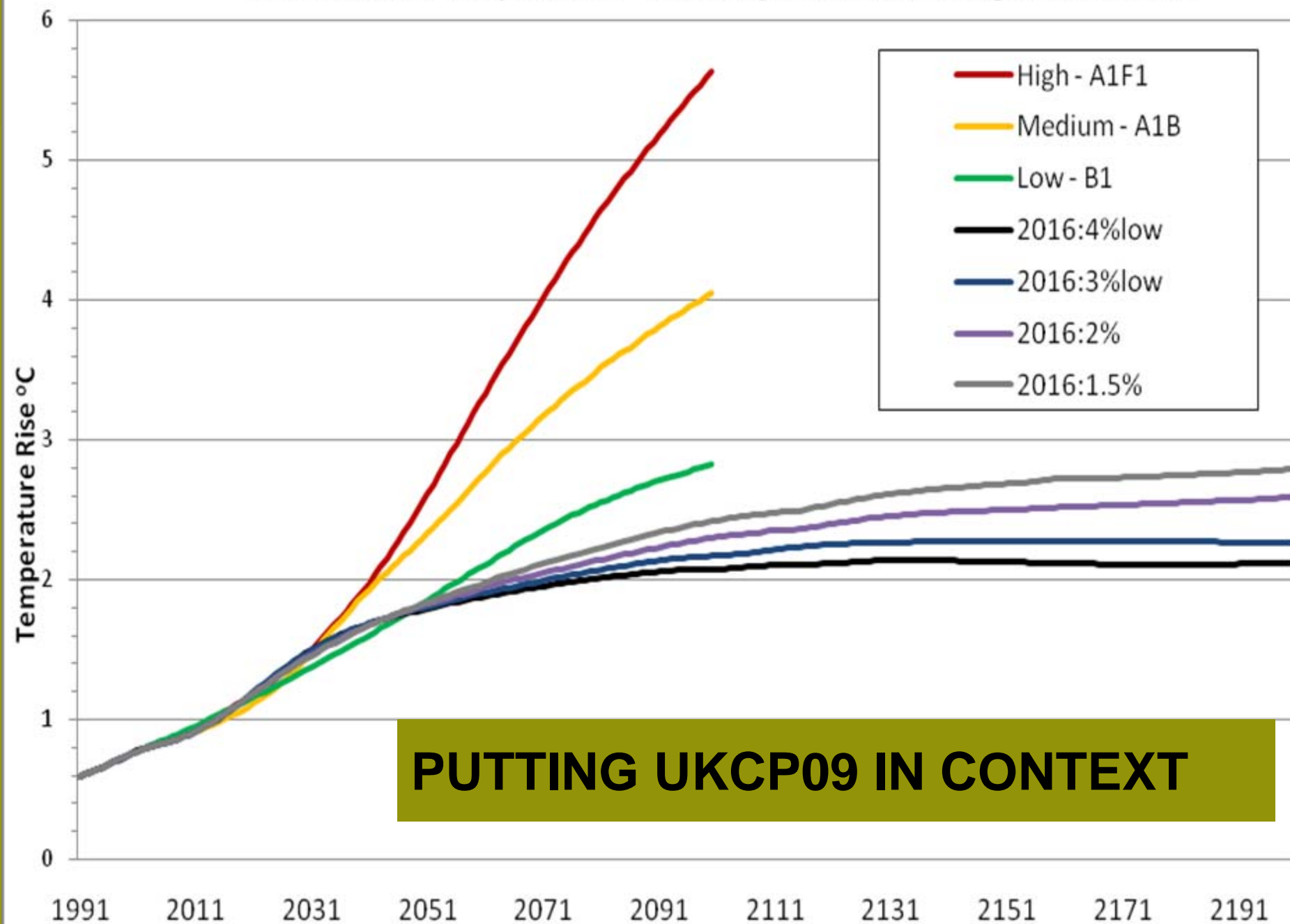
UKCP09 RESULTS- PROBABILISTIC



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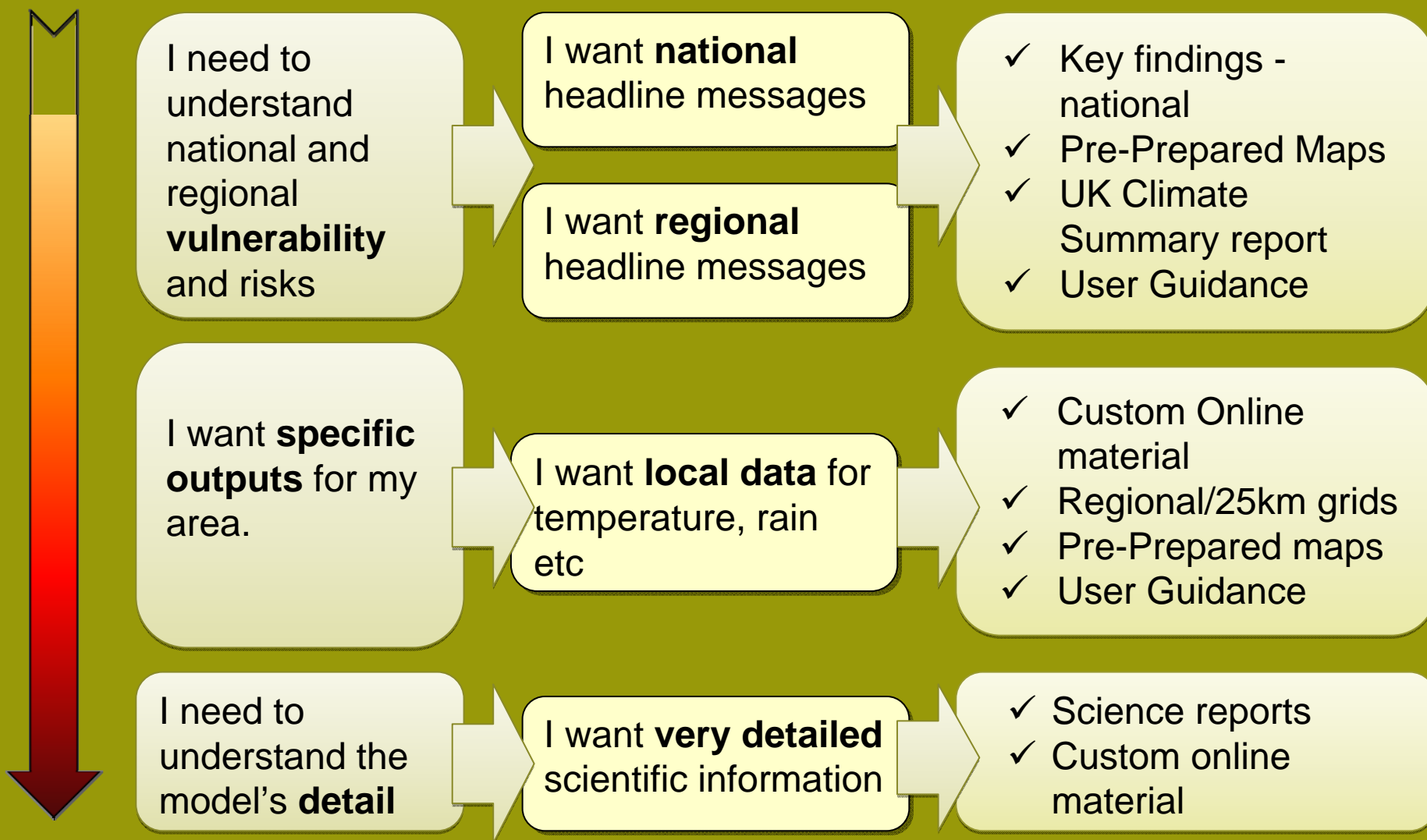


Global Mean Temperatures - SRES Projections with Mitigation Scenarios



PUTTING UKCP09 IN CONTEXT

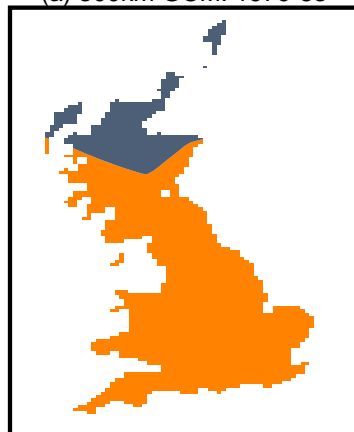
TAILORING UKCP09 TO THE AUDIENCE



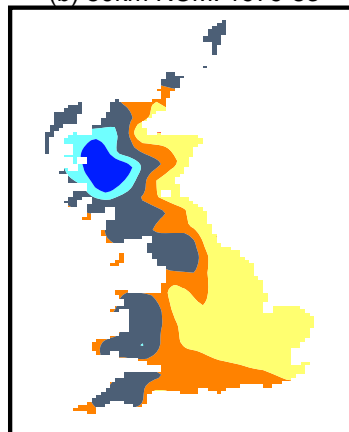
WHY 25km resolution?

300 km.
GCM

(a) 300km GCM: 1979-83

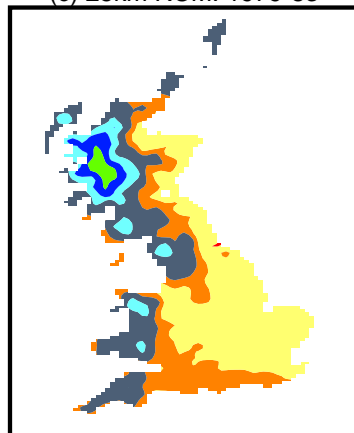


(b) 50km RCM: 1979-83

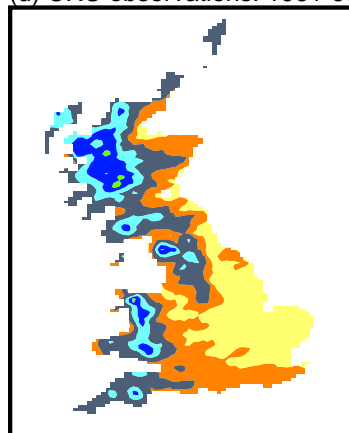


50km.
Regional
model

(c) 25km RCM: 1979-83



(d) CRU observations: 1961-90



1961-90
Observed
climate

25km.
Regional
model



Evidence to argue the need for policy



An Example of communicating evidence— UK Climate Projections



Evidence to inform how policy should be shaped

CHALLENGES

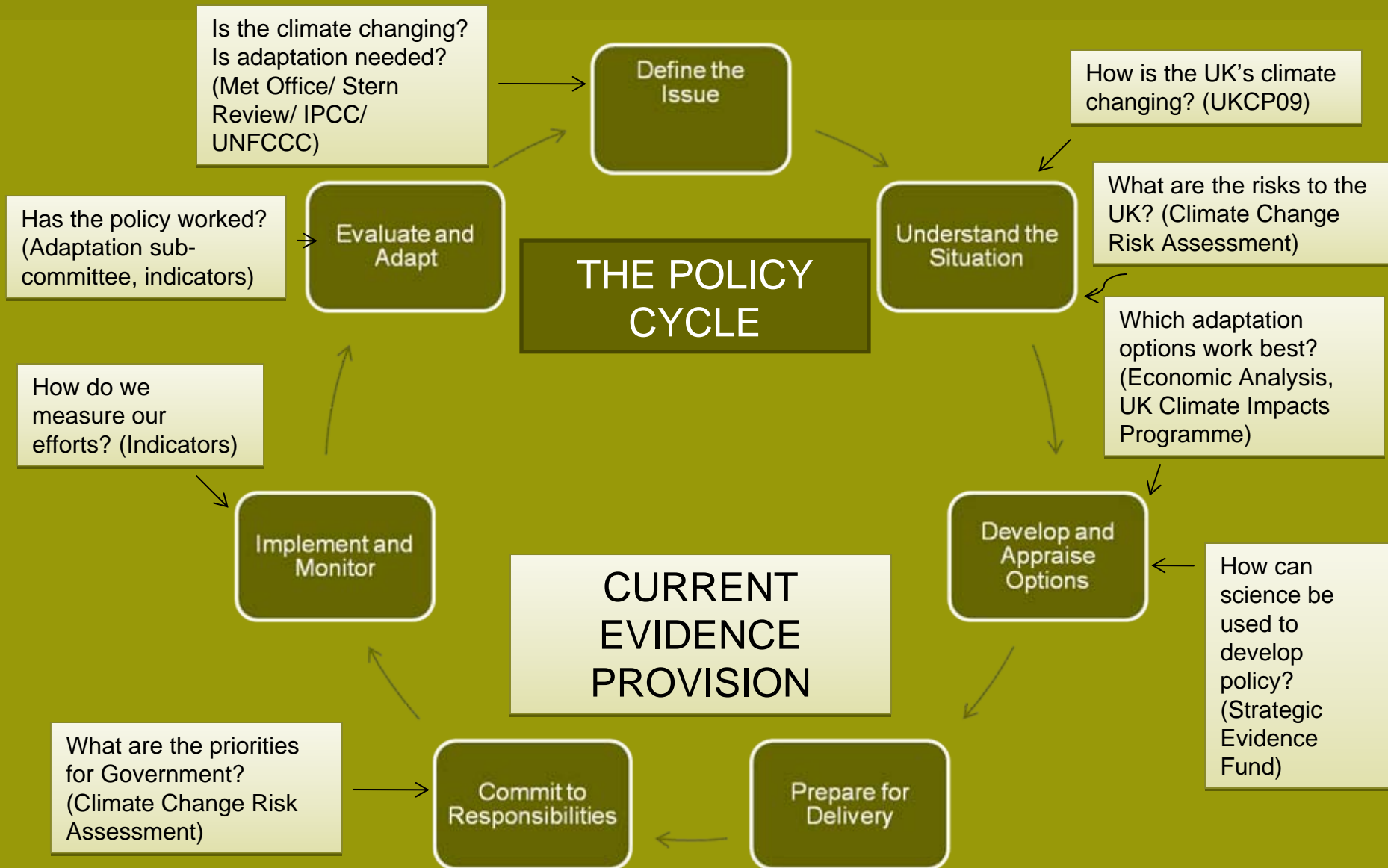
- Evidence base is huge, and dispersed in the UK (lots of organisations involved, joining up is difficult as lack of resources/ funding from many partners).
- Adaptation is very context specific – lack of a common metric i.e. different sectors need different solutions.
- Benefits realised long into the future - how do we measure success and justify the programme and spend it incurs without obvious results?

MAPPING EVIDENCE NEEDS



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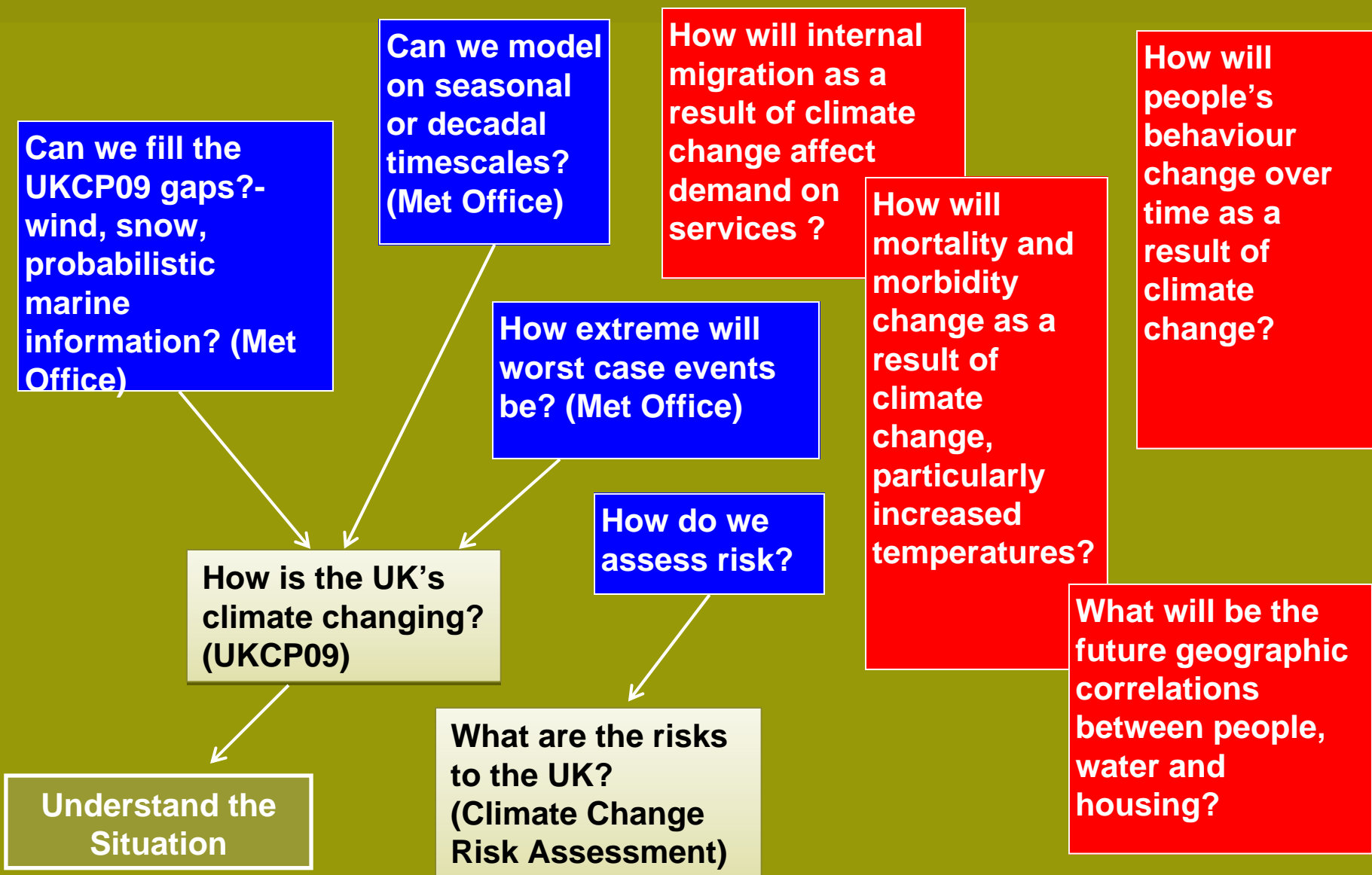


MAPPING EVIDENCE NEEDS



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HOW DO WE PRIORITISE OUR EFFORTS?

Rationale

Are there serious market failures or equity considerations that justify intervening in this area

Impact

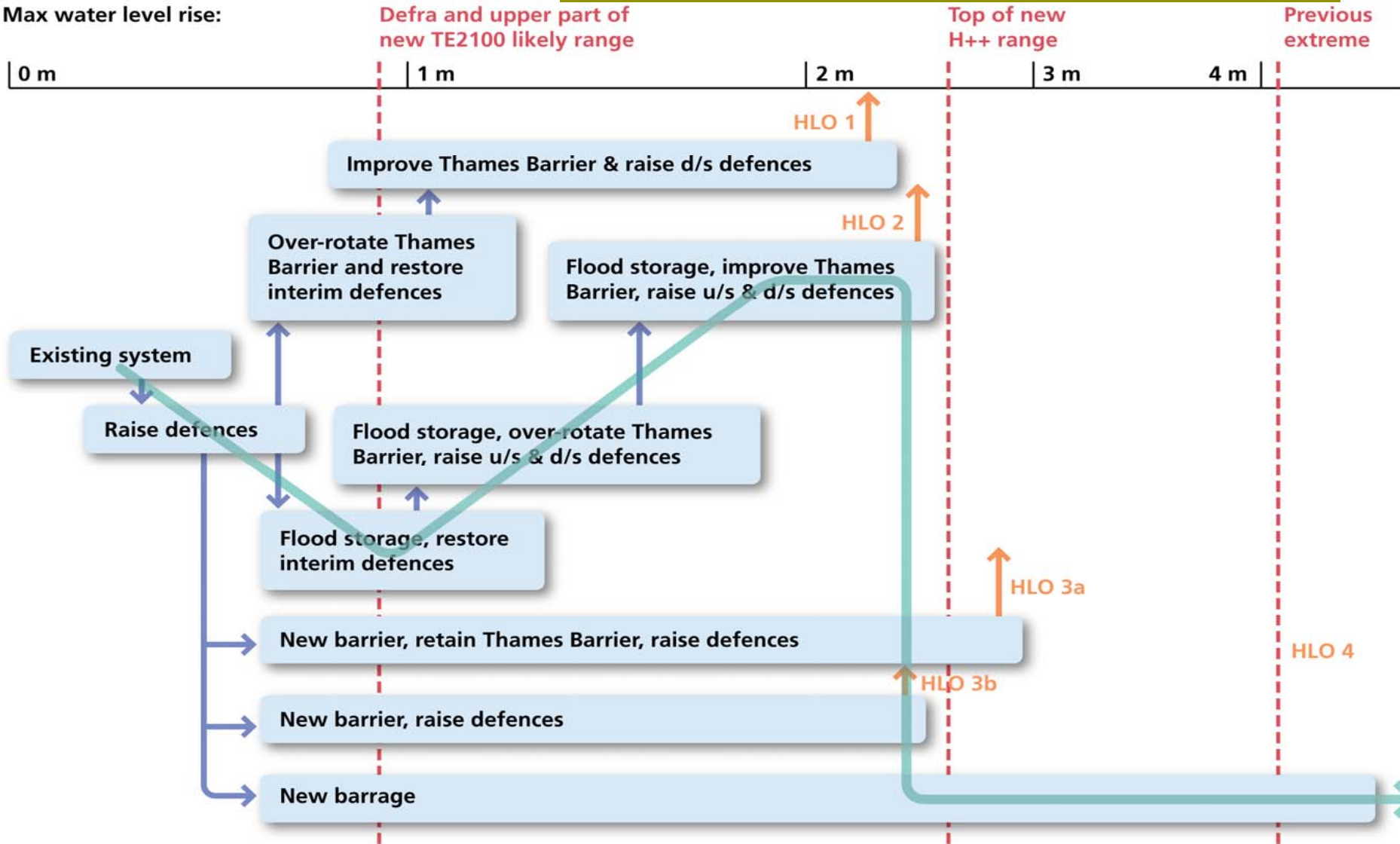
How significant an improvement will in the UK's adaptation to climate change? Will it have cross-cutting benefits?

Timing

Will it prevent costly retrofits, avoid near term losses or prevent irreversible damage?

CASE STUDIES (TE2100)

Max water level rise:



Key: --- Predicted max water level under each scenario
 Measures for managing flood risk indicating effective range against water level

MEASURING SUCCESS- INDICATORS

What are we doing?

By end 2009

-early 2010

propose...

- an approach for indicator development based on agreed priorities, targets and objectives

- an initial basket of indicators



SOME USEFUL WEBSITES

- <http://ukclimateprojections.defra.gov.uk>
- <http://www.defra.gov.uk/adaptation>
- <http://www.ukcip.org.uk>
- <http://www.metoffice.gov.uk>

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