Climate Change Leadership 10th Sept

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Climate Change Leadership 10th Sept

1. We have a problem

2. Adaptation vs Mitigation

3. The Future UKCP09 et al

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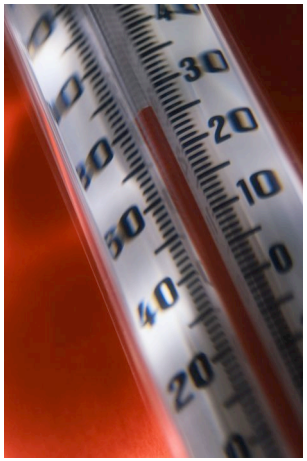
We Have a Problem



Effect

- Summer Temperatures
- Winter Temperatures
- Winter Rainfall
- Summer Rainfall

Impact

- Energy Usage
- Energy Generation
- Water
- Agriculture
- Transport
- Built Heritage
- Flora & Fauna
- Health & Safety

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We have a problem

"The effects of climate change is a bit like crystal ball gazing with some widespread and varying predictions for the future".

ACPOS 2007

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We have a problem

Kilbirnie 1st Aug 2008

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We have a problem

- CC is an urgent problem
  - 57%

- Not a problem, unconvinced, future.
  - 35%

- Don’t Know
  - 8%

Scot Govt. Survey 2008 (Summary)

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We have a problem

- Convinced - 57%

Likely to be less

- Unconvinced - 35%

Likely to be more

- Unaware - 8%

Similar

Social Proof - Robert B. Cialdini

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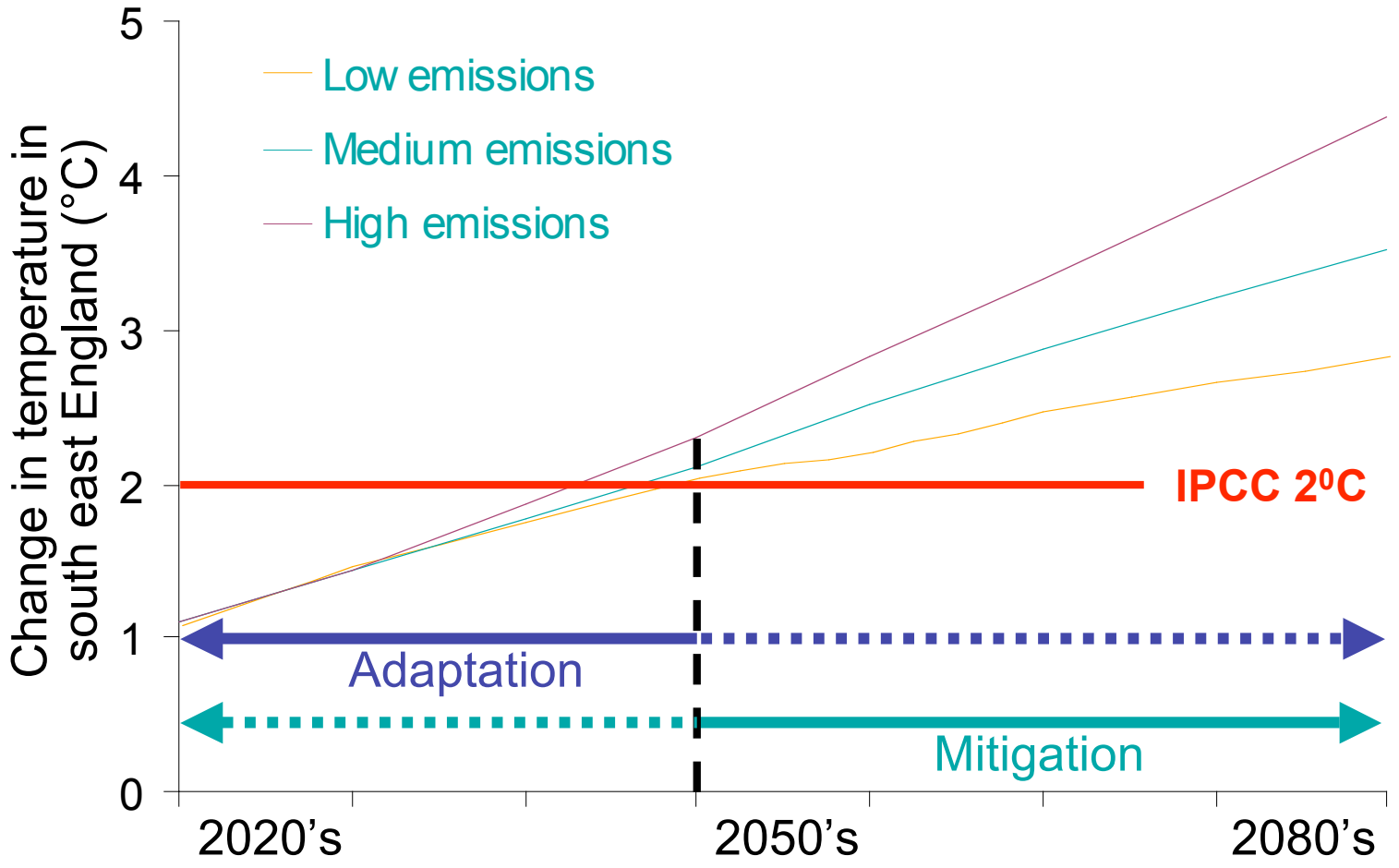
Adapting now, mitigating for the future?



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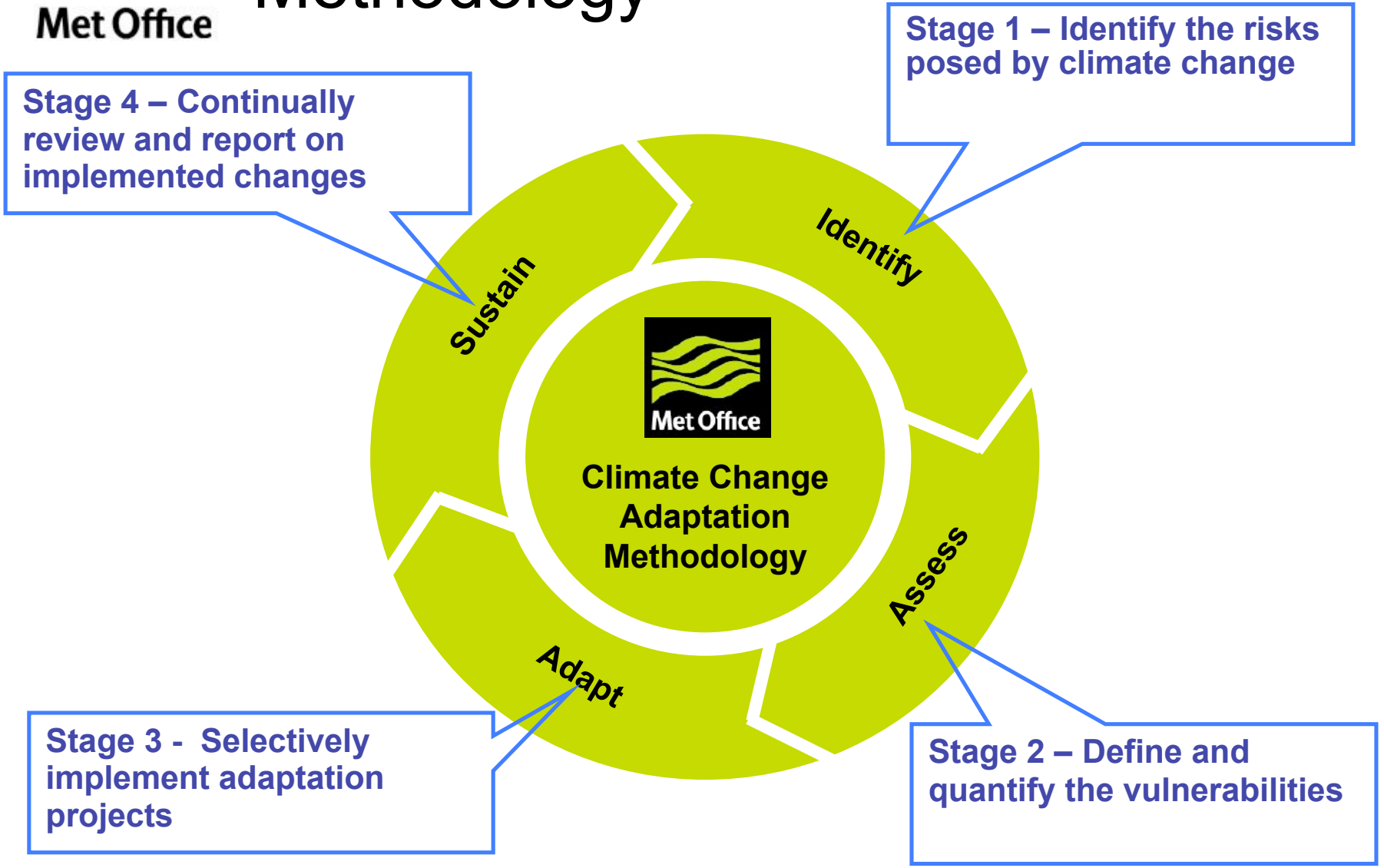
Climate Change Adaptation Methodology



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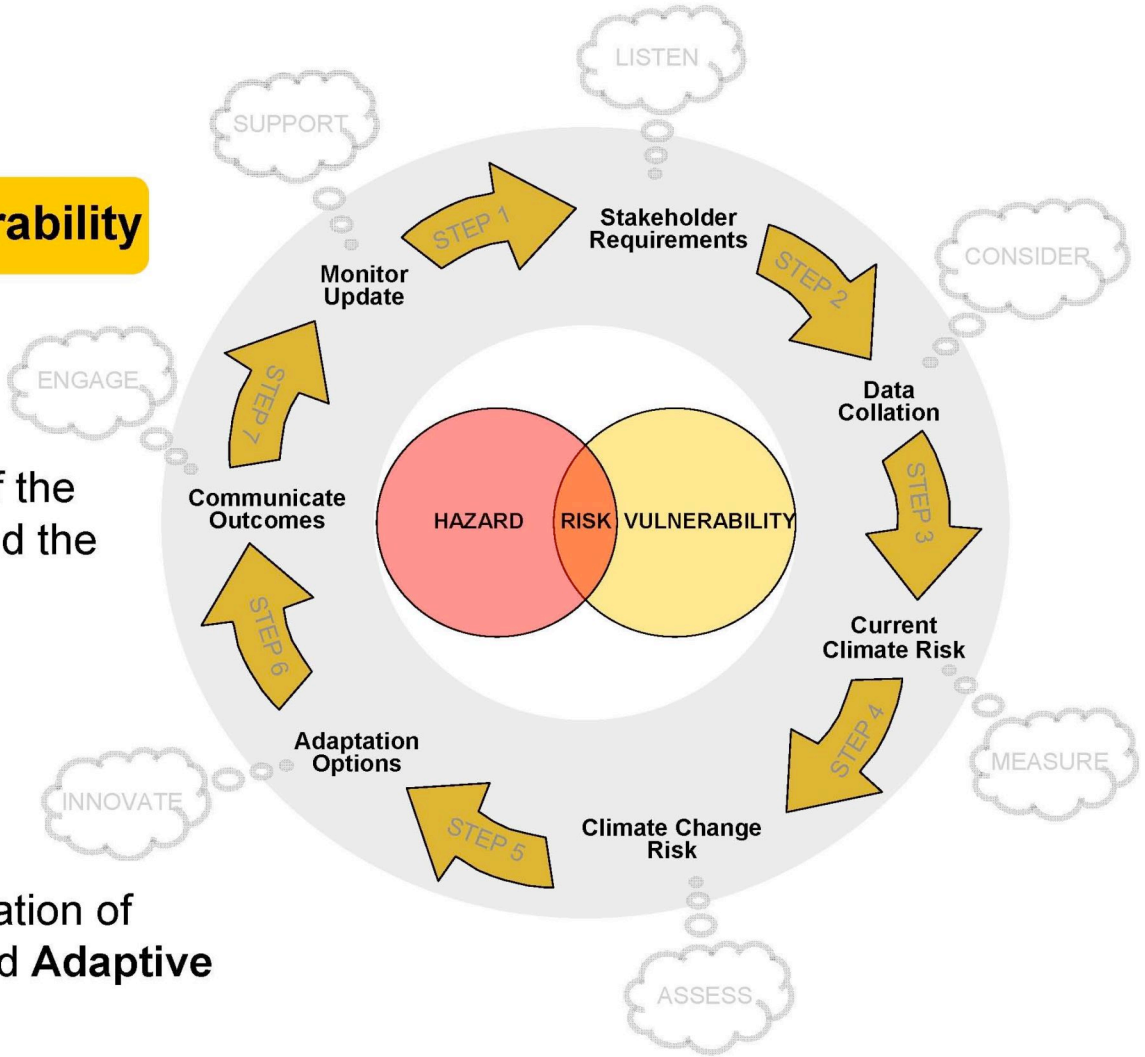
Adapting - Risk Management

Risk = **Hazard** x **Vulnerability**

Hazard is a combination of the **Magnitude** of an **Event** and the **Likelihood** of it occurring.

Vulnerability is a combination of **Exposure**, **Resilience** and **Adaptive Capacity**



UKMO Climate Impacts & Risk Framework

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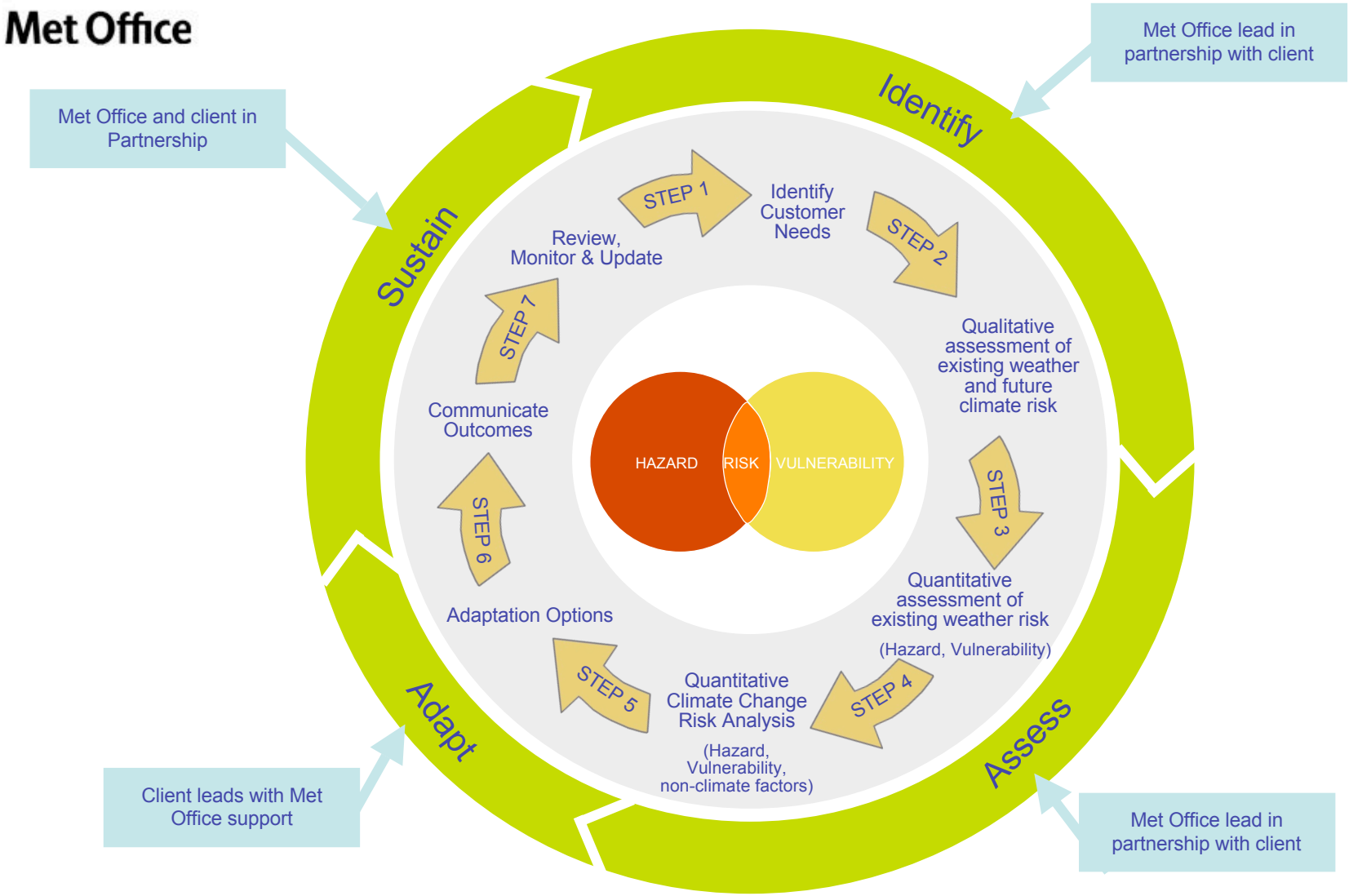
Combining the two



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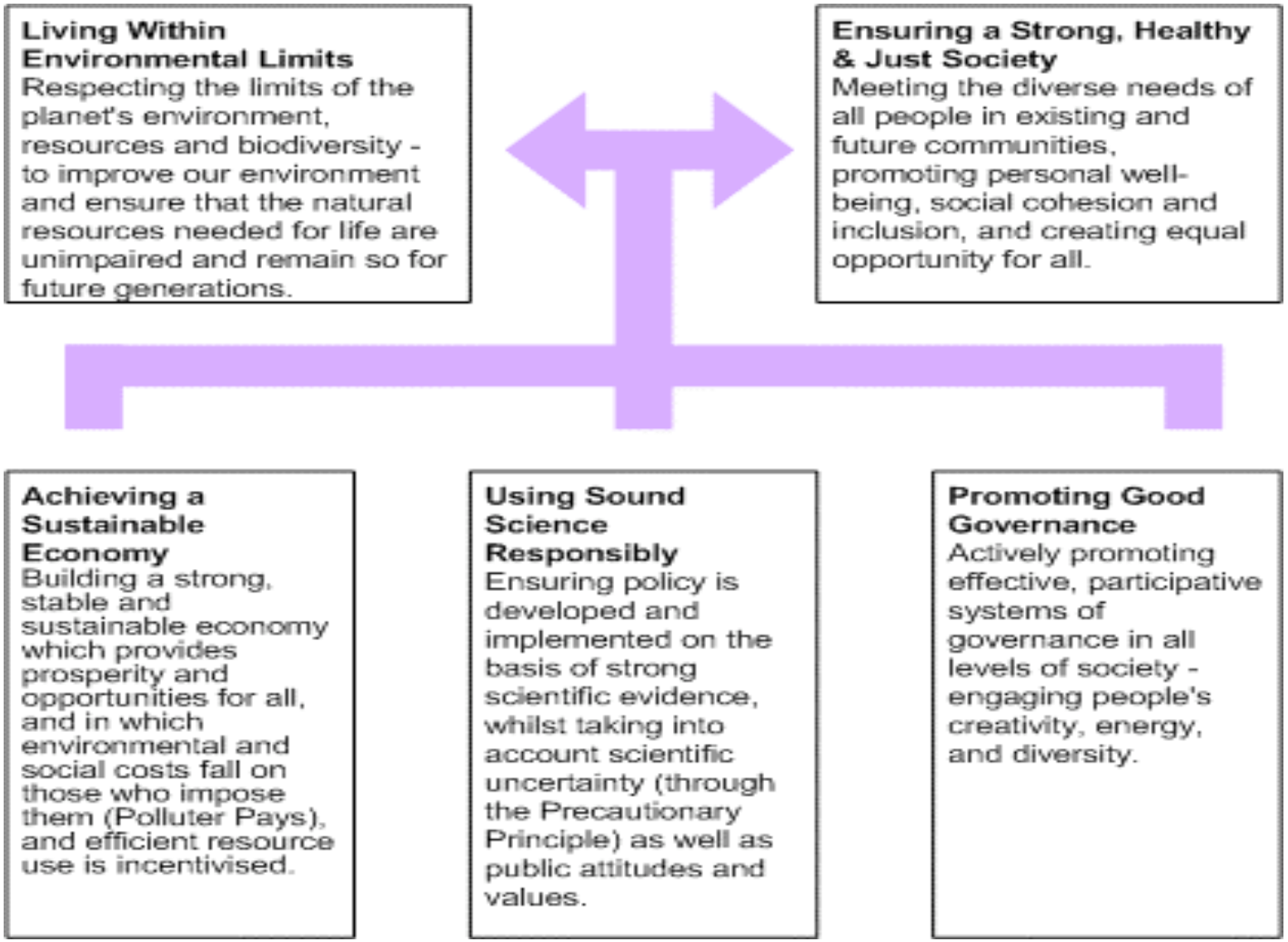
Sustainable Development



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UKCP09 New Stuff

- UKCP09 is state of the art science and modelling, developed by the Met Office
- UKCP09 is the first time probabilistic climate projections have been used at the regional scale
- UKCP09 needs expert interpretation to assist with planning, decision making and risk mitigation
- UKCP09 can be combined with other sources of climate information, such as changes on the 10 year time-scale, urban effects on local climate and climate extremes projections

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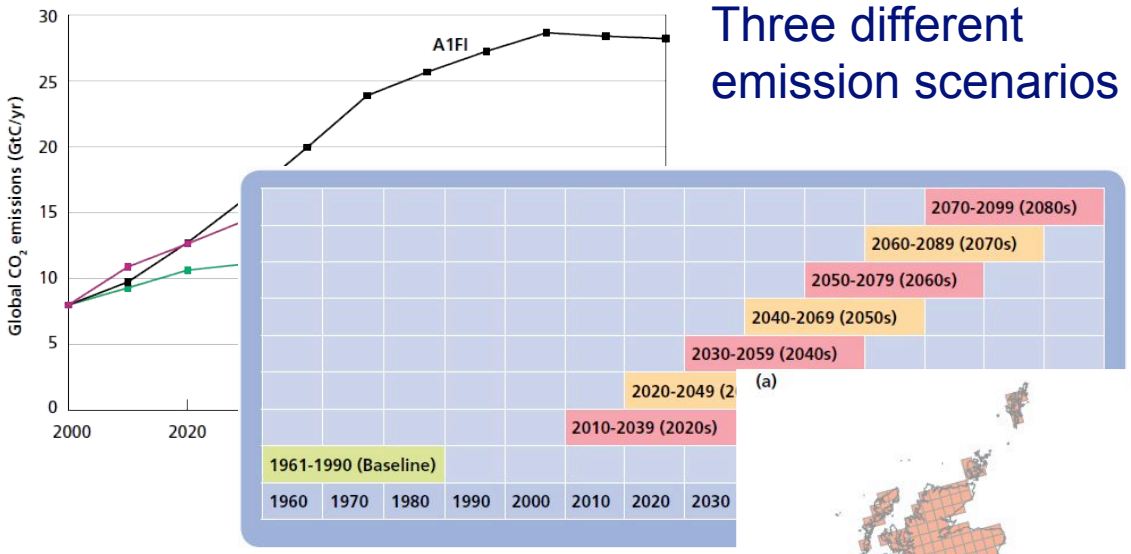
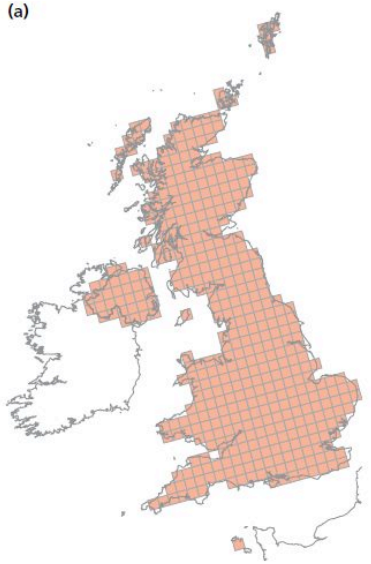
UKCP09 New Stuff



Three different emission scenarios

Seven different timeframes

25km grid, 16 admin regions, 23 river-basins and 9 marine regions



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UKCP09 New Stuff

UKCIP02

Single projection

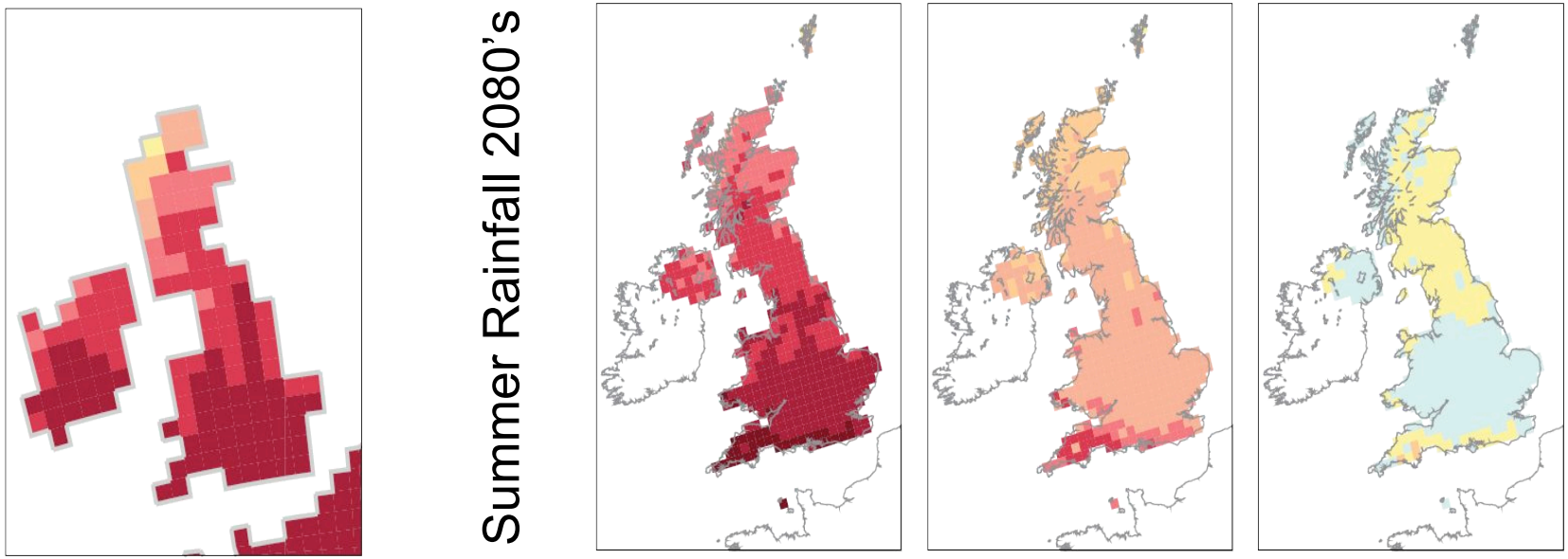
UKCP09

Very unlikely to be less than (10%)

Central estimate (50%)

Very unlikely to be more than (90%)

Summer Rainfall 2080's



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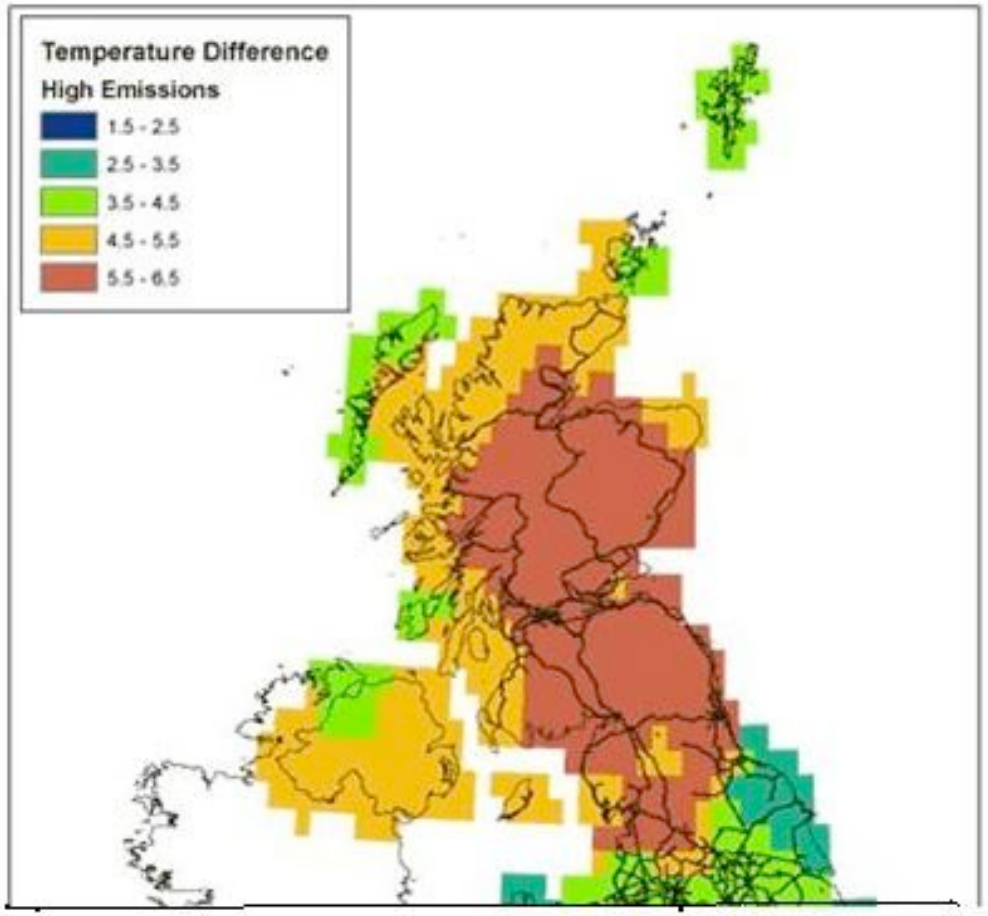
UKCP09 Some Outputs

- Temperature difference for the warmest day summer in the 2080s
- High Emissions Scenario



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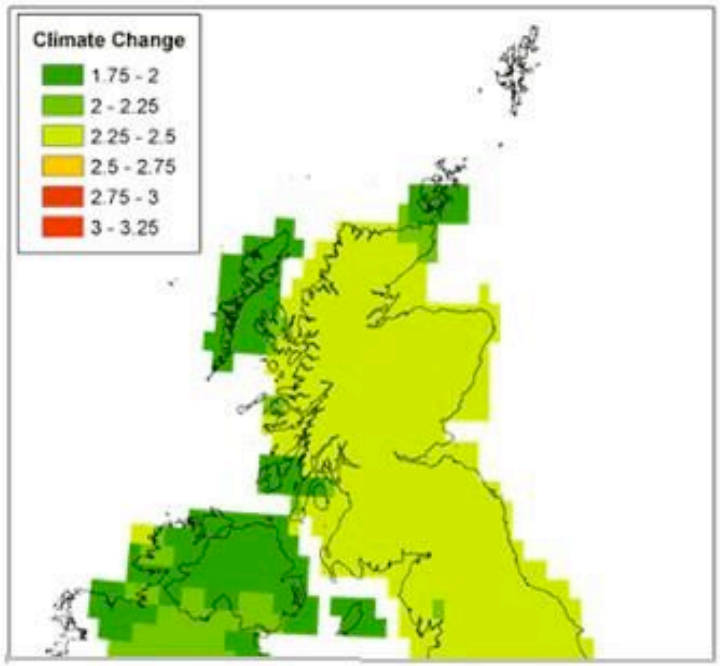
UKCP09 Some Outputs

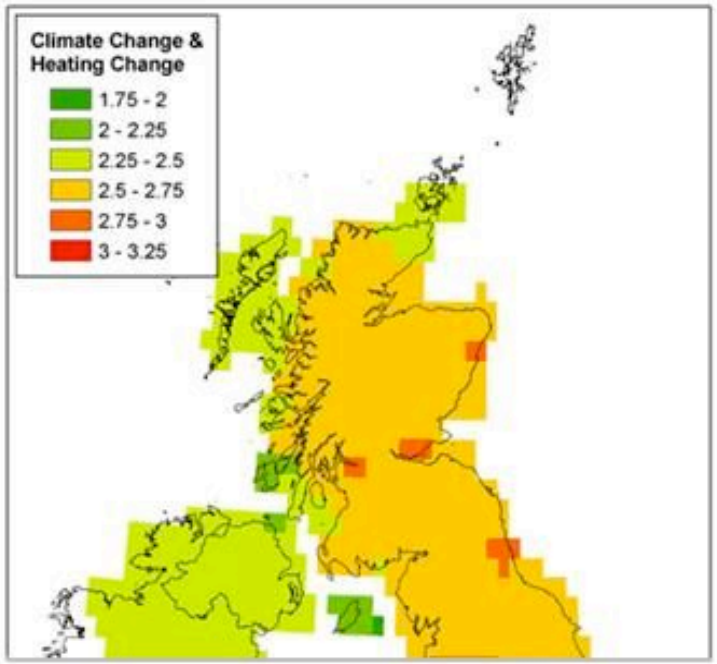
Change in minimum temperature by 2041-2050

Climate change

Climate change + UHI

Warmer





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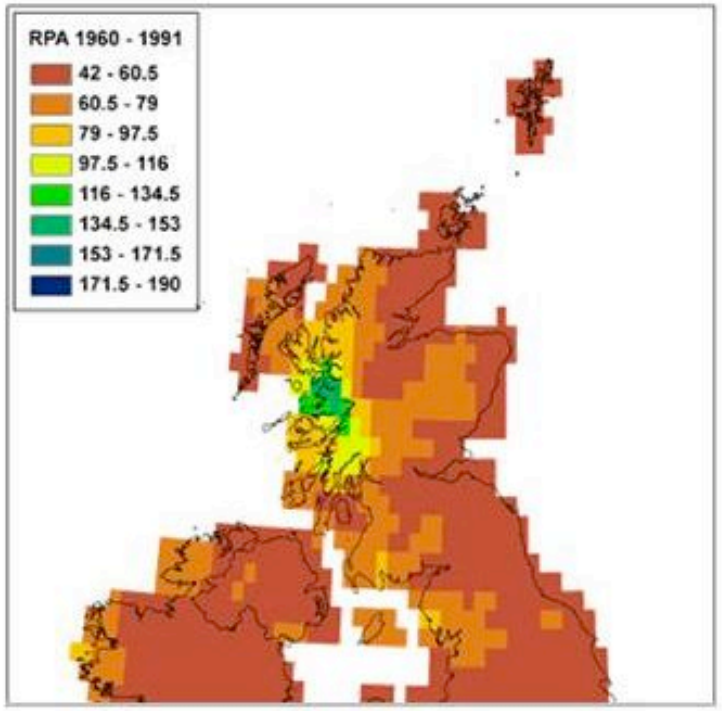
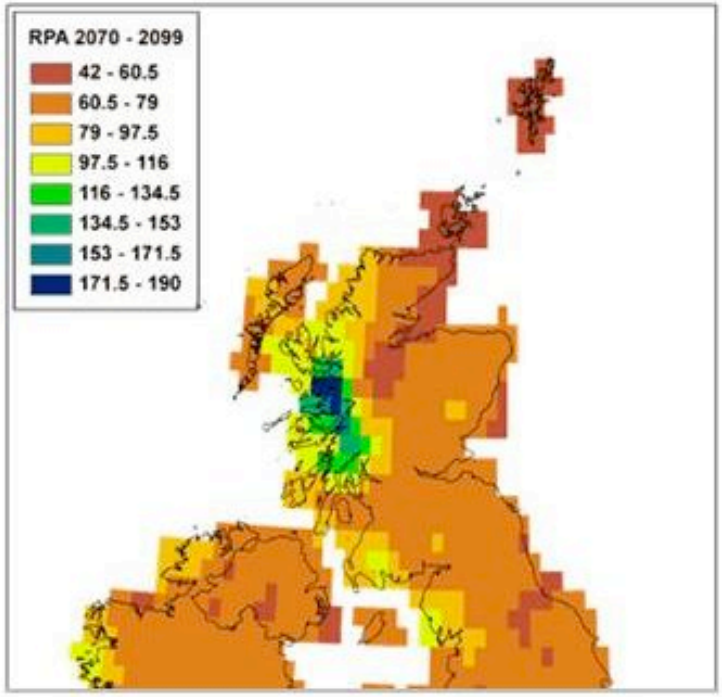
UKCP09 Some Outputs

Total rainfall in an event with a 1 in 30 year return period

1980's **2080's**

wetter





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By the 2050s…

If emissions continue at their present rate:

	Eastern Scotland	Northern Scotland	Western Scotland
Summer average temp	+ 2.3ºC	+ 2.0ºC	+ 2.4ºC
Winter average temp	+ 1.7ºC	+ 1.7ºC	+ 1.9ºC
Summer precipitation	- 12%	- 10%	- 12%
Winter precipitation	+ 10%	+ 13%	+ 15%

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By the 2080s…

If emissions continue at their present rate:

	Eastern Scotland	Northern Scotland	Western Scotland
Summer average Temp	**+ 3.5ºC**	**+ 3.0ºC**	**+ 3.5ºC**
Winter average temp	**+ 2.3ºC**	**+ 2.2ºC**	**+ 2.6ºC**
Summer precipitation	**- 16%**	**- 11%**	**- 15%**
Winter precipitation	**+ 12%**	**+ 17%**	**+ 21%**

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Sea Level Rise

- **The sea level in Eastern Scot is expected to rise**:

13.9 cm by 2050

24.4 cm by 2080

30.5 cm by 2095

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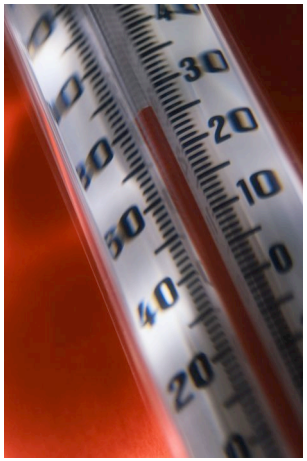
We Have a Problem



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The Challenge

"The past is a foreign country, they do things differently there"

(L.P. Hartley)

So Must We

http://www.metoffice.gov.uk/climatechange/guide/ukcp/business_advice/

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