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Living in an Uncertain World

How examination of past climate and biogeochemical processes can help us understand the future

Celebrating 5 years of world-leading collaborative and multidisciplinary research

2010 - 2015

BRISTOL 2015 EUROPEAN GREEN CAPITAL

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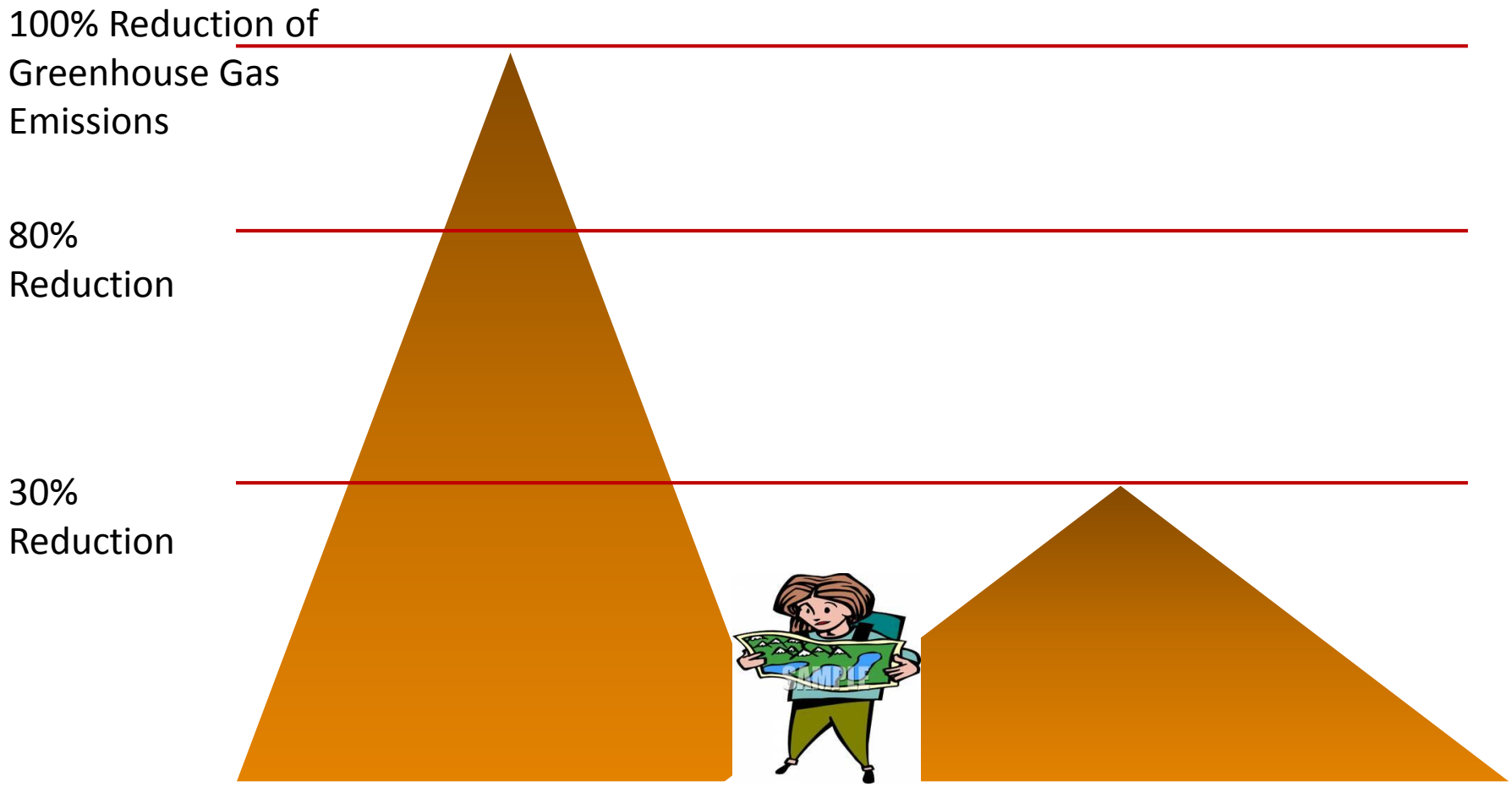

What path are we on now?

What do our ‘experiences’ tell us?

How do we anticipate our climate future and what do those tools tell us?

What are the key messages and how do they inform evaluation of our journey?

Some reflections on decreasing emissions

Some reflections on resilience in an Uncertain World.


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IBM

The Uncertain World

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1. The Uncertain World is not one of which we have no knowledge.

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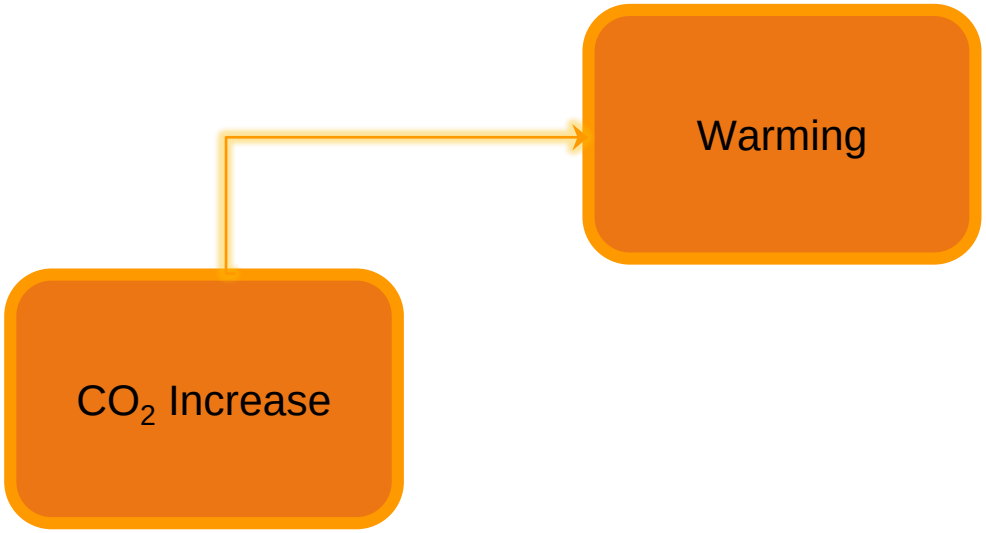
Greenhouse Gases will cause Global Warming



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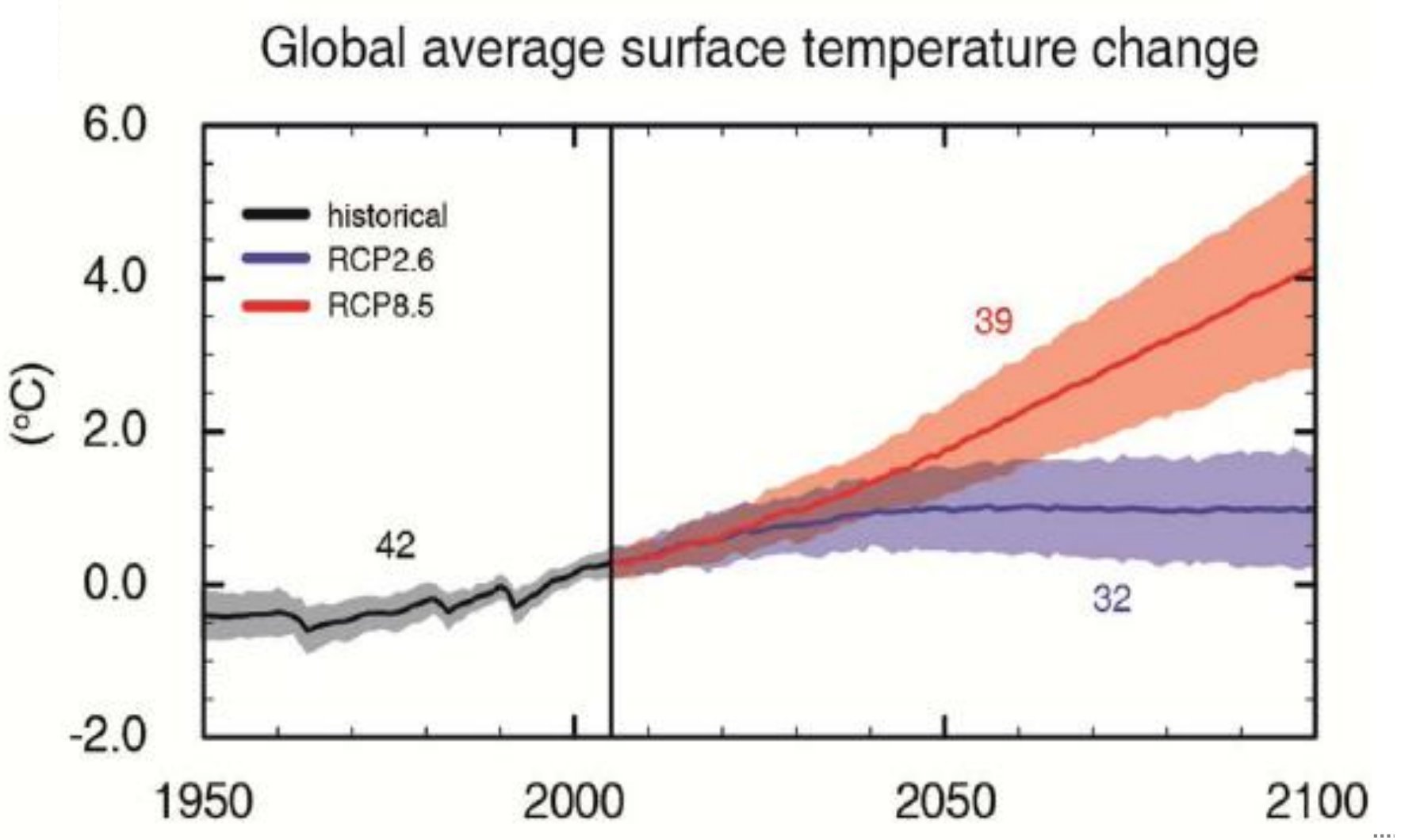

Source: IPCC AR5

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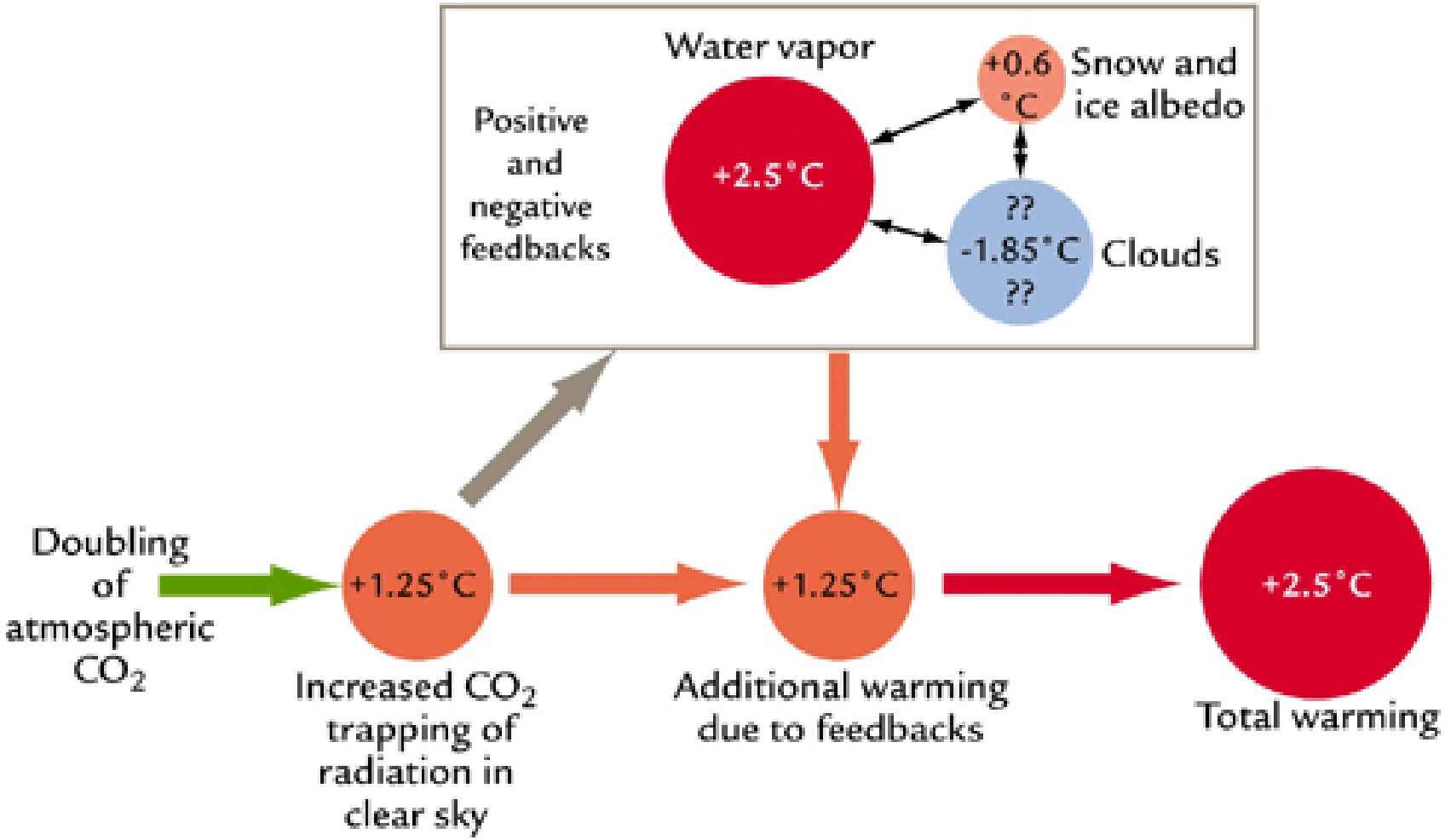
Why uncertainty – and certainty – global warming?



Source: IPCC AR5

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Ancient climate records 'back predictions'

By Helen Briggs
Environment Correspondent

4 February 2015 | Science & Environment

Source: BBC

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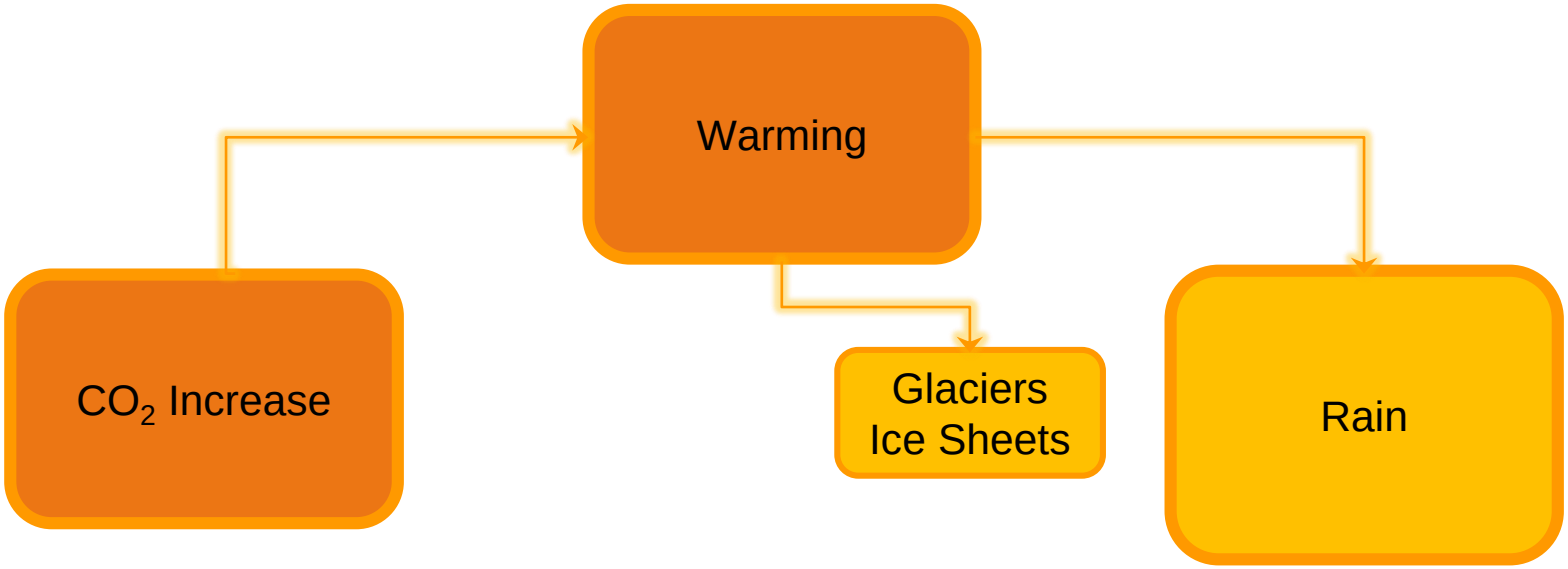
2. Beyond the probabilistic framework, profound uncertainty and profound risk does exist



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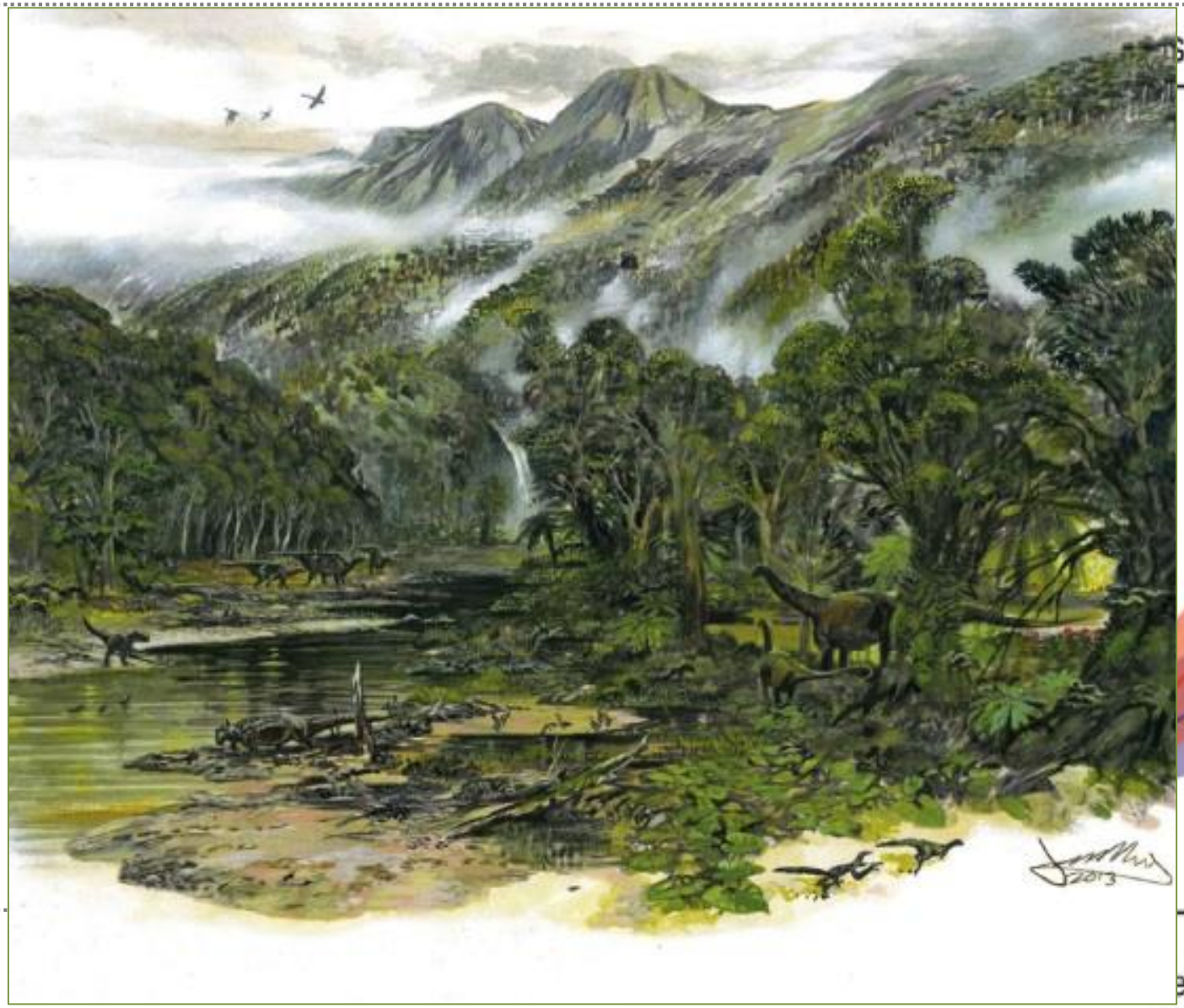
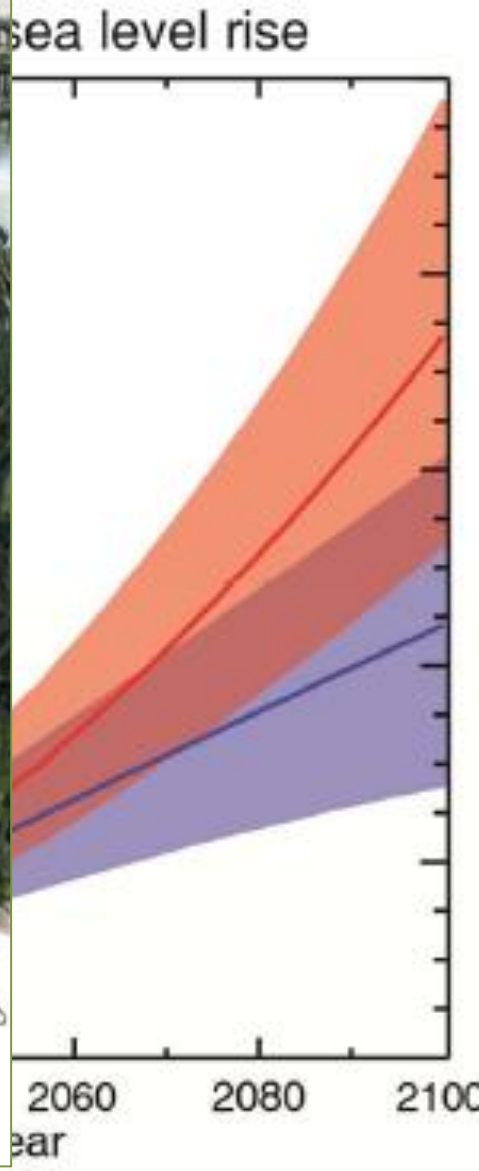
The Oceans will Warm and Sea Level will Rise – but how fast?





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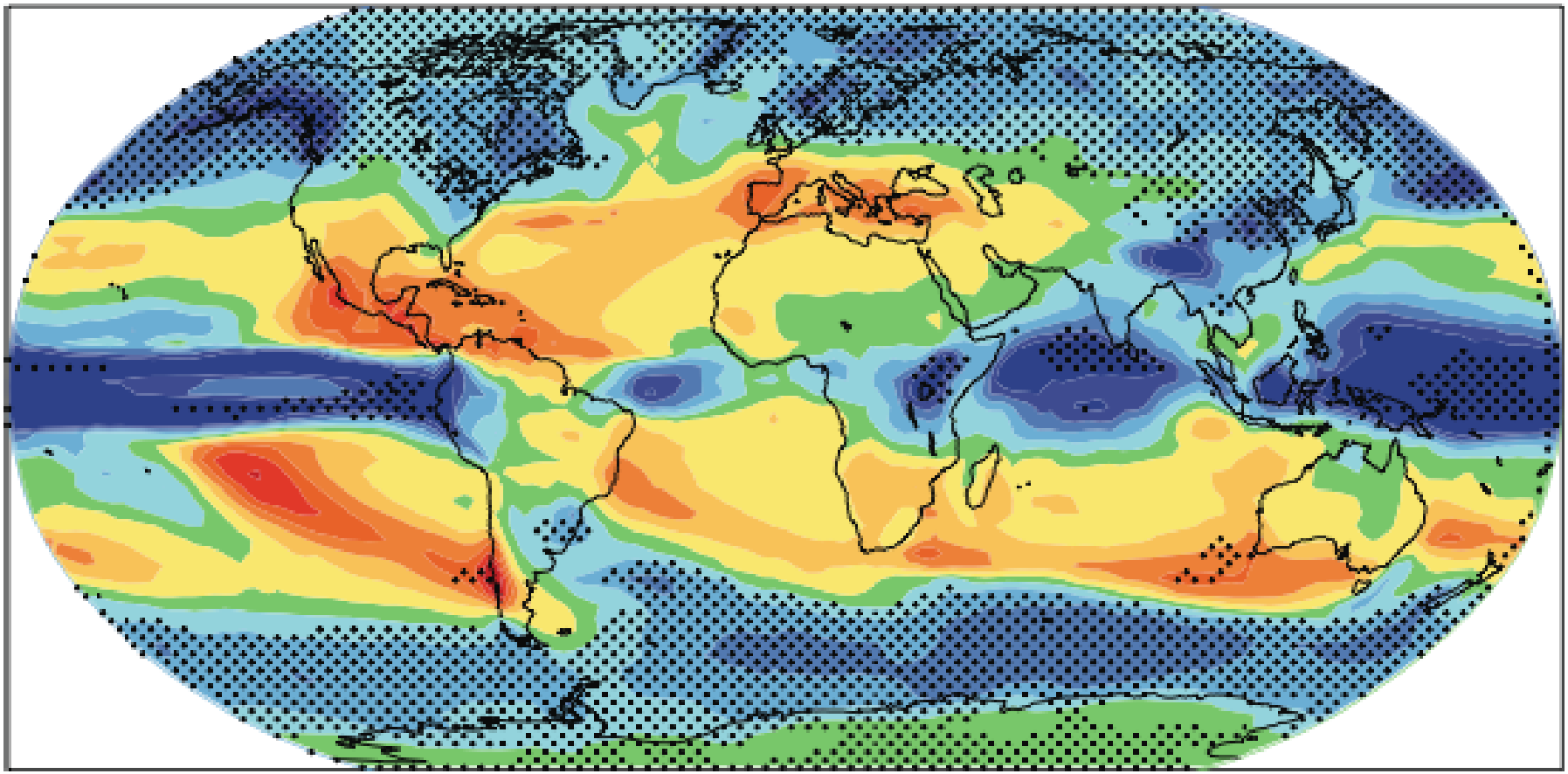
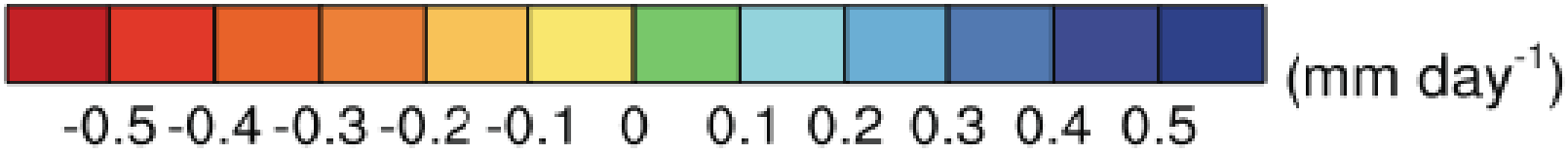
Deeper Uncertainty: Change in annual rainfall by 2100



Source: IPCC AR5



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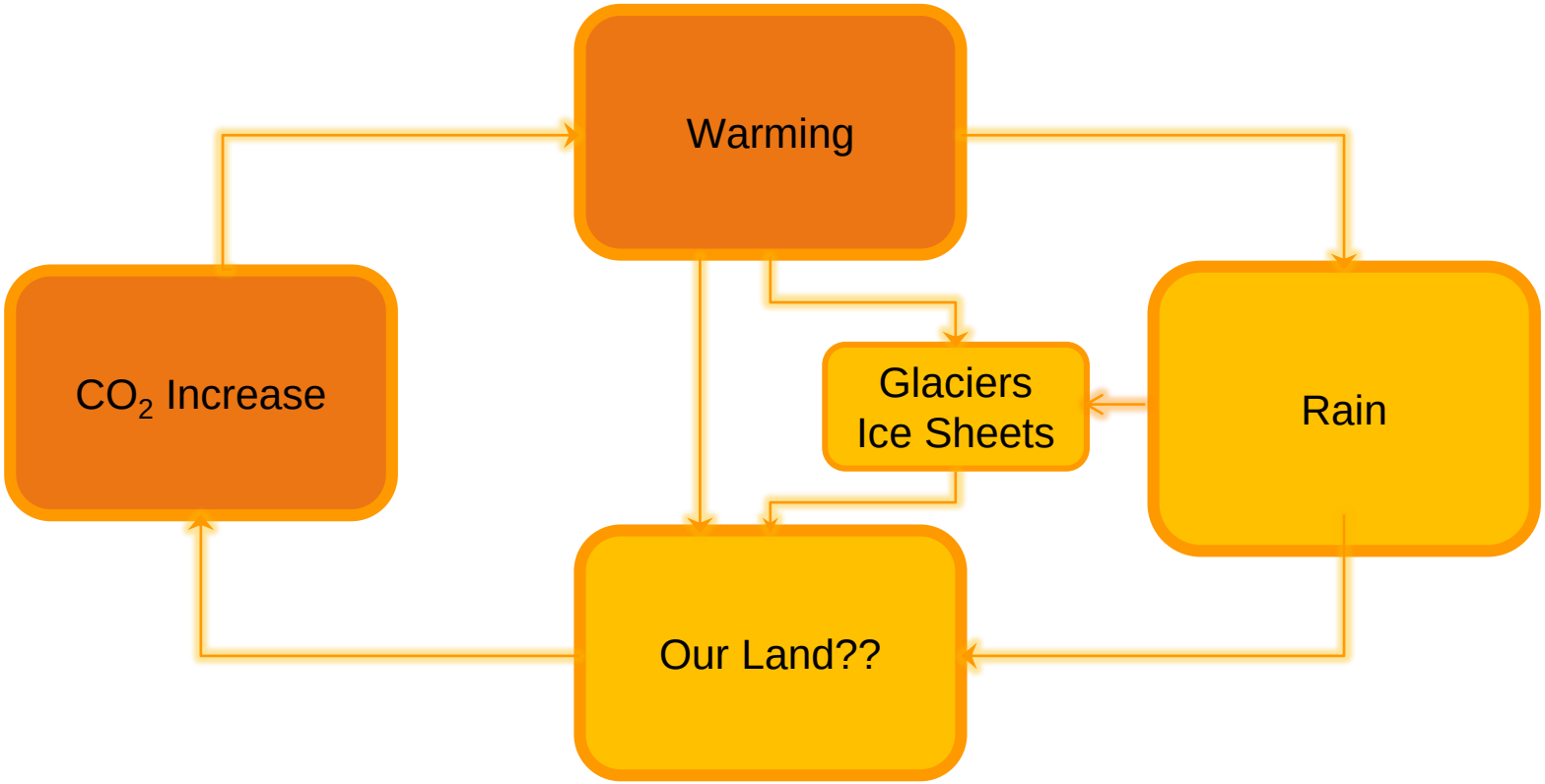
Deep Uncertainty



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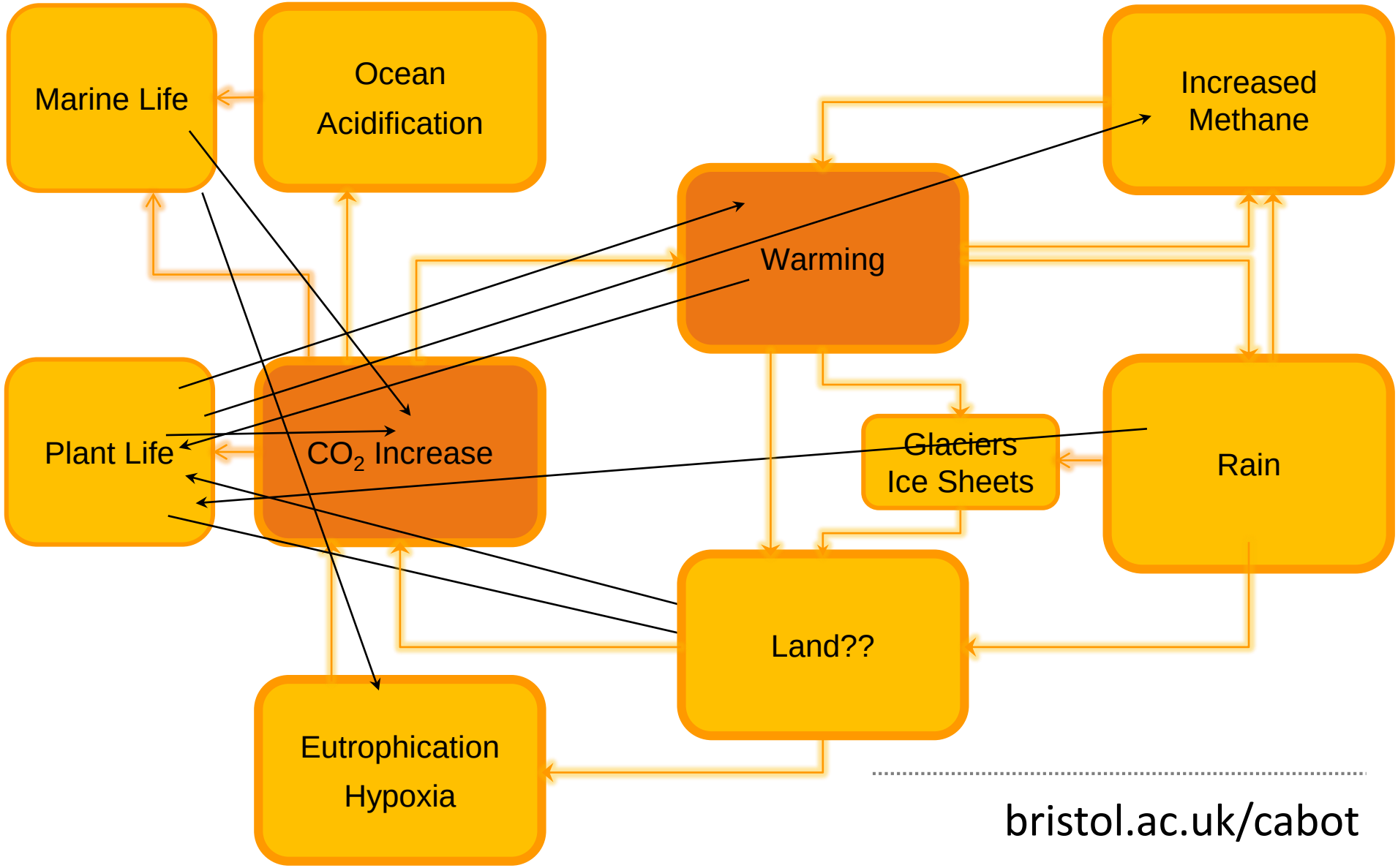
Deep Uncertainty Arising from the Complexity of the Earth's Biogeochemical Systems



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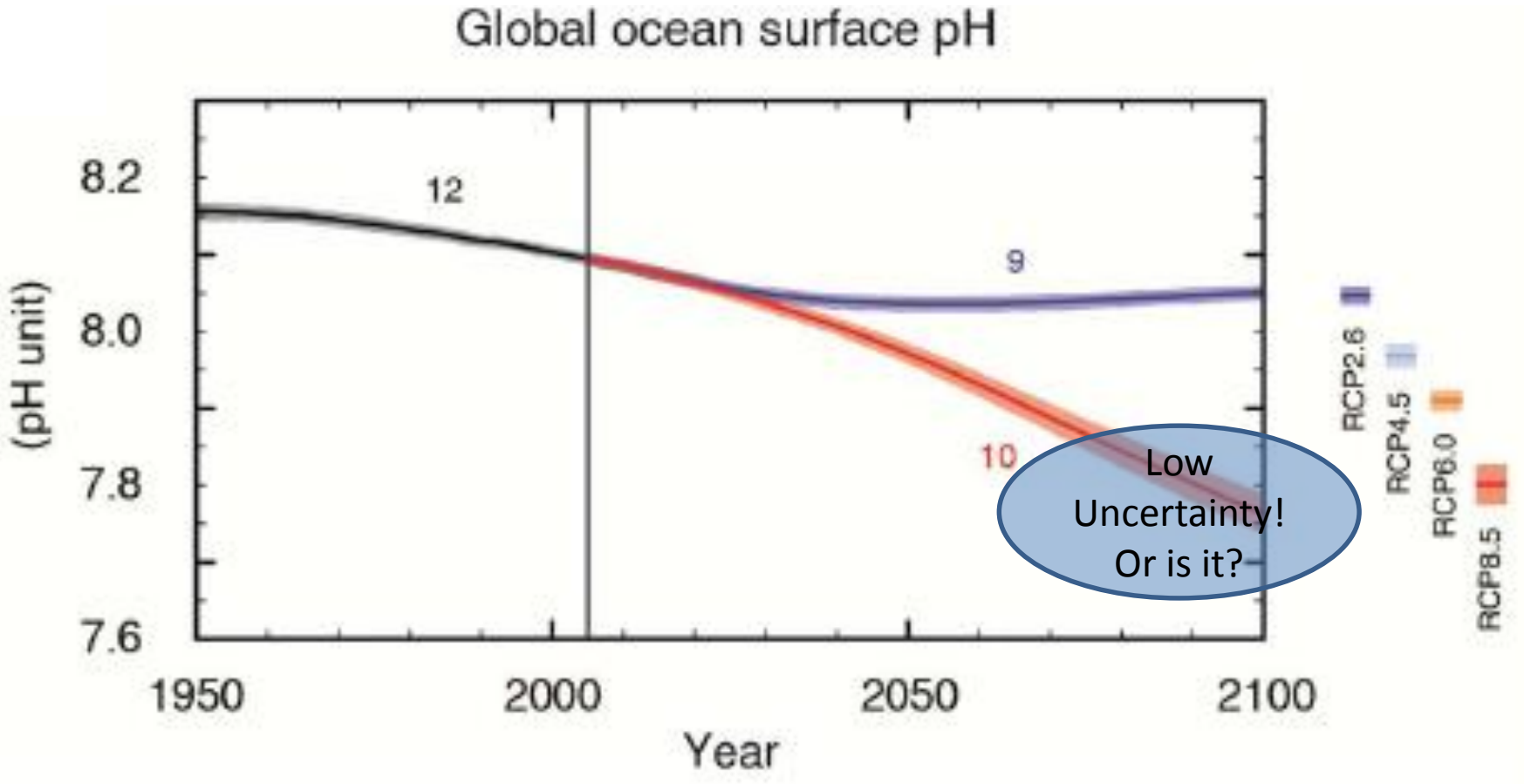
And the Oceans will Become more Acidic



Source: IPCC AR5

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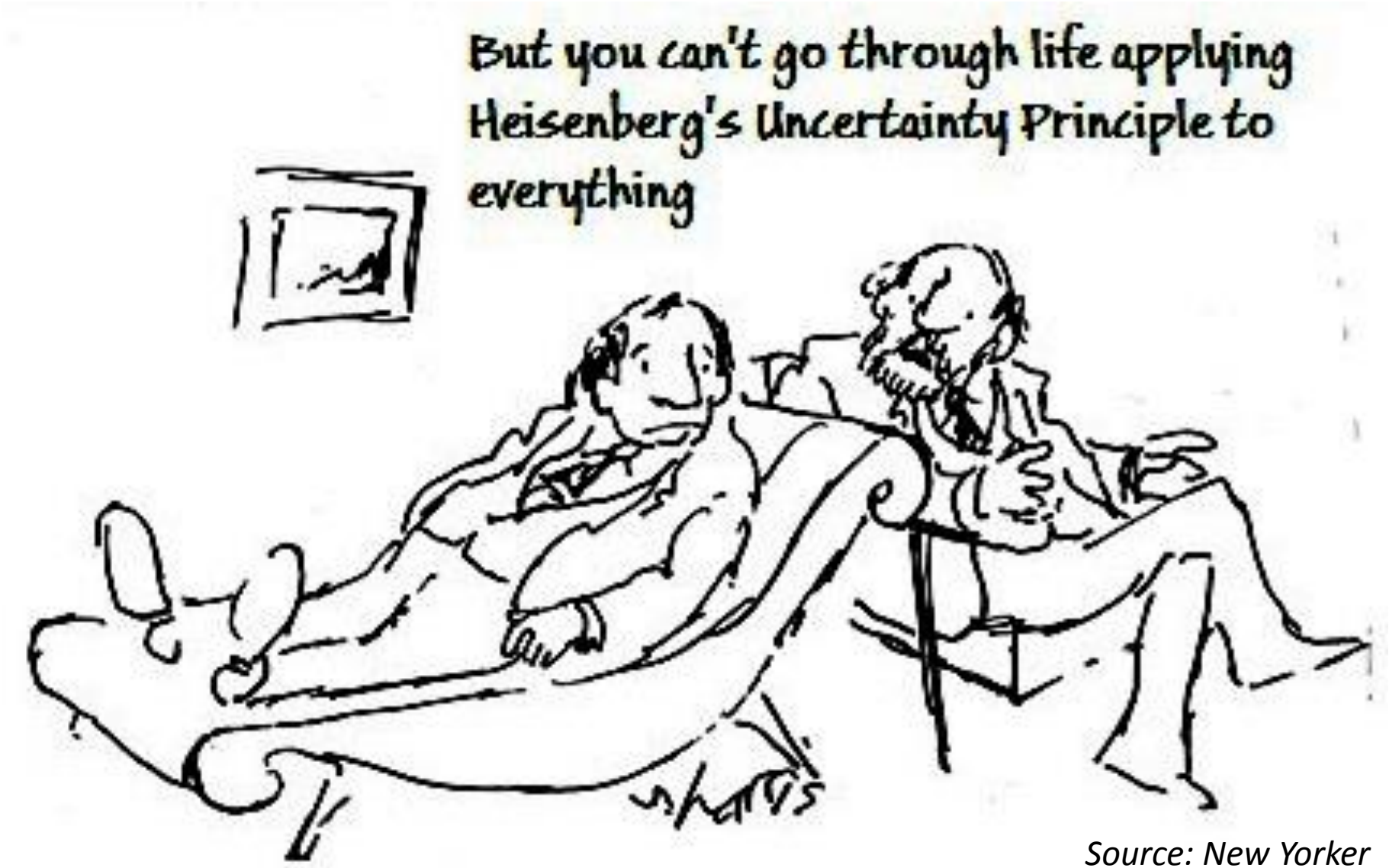
3. Climate Change will come. Our world will become more uncertain.



Source: New Yorker

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4. Climate change will most impact the poorest; the poorest are the least resilient

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5. Society's challenges are complex and inter-related

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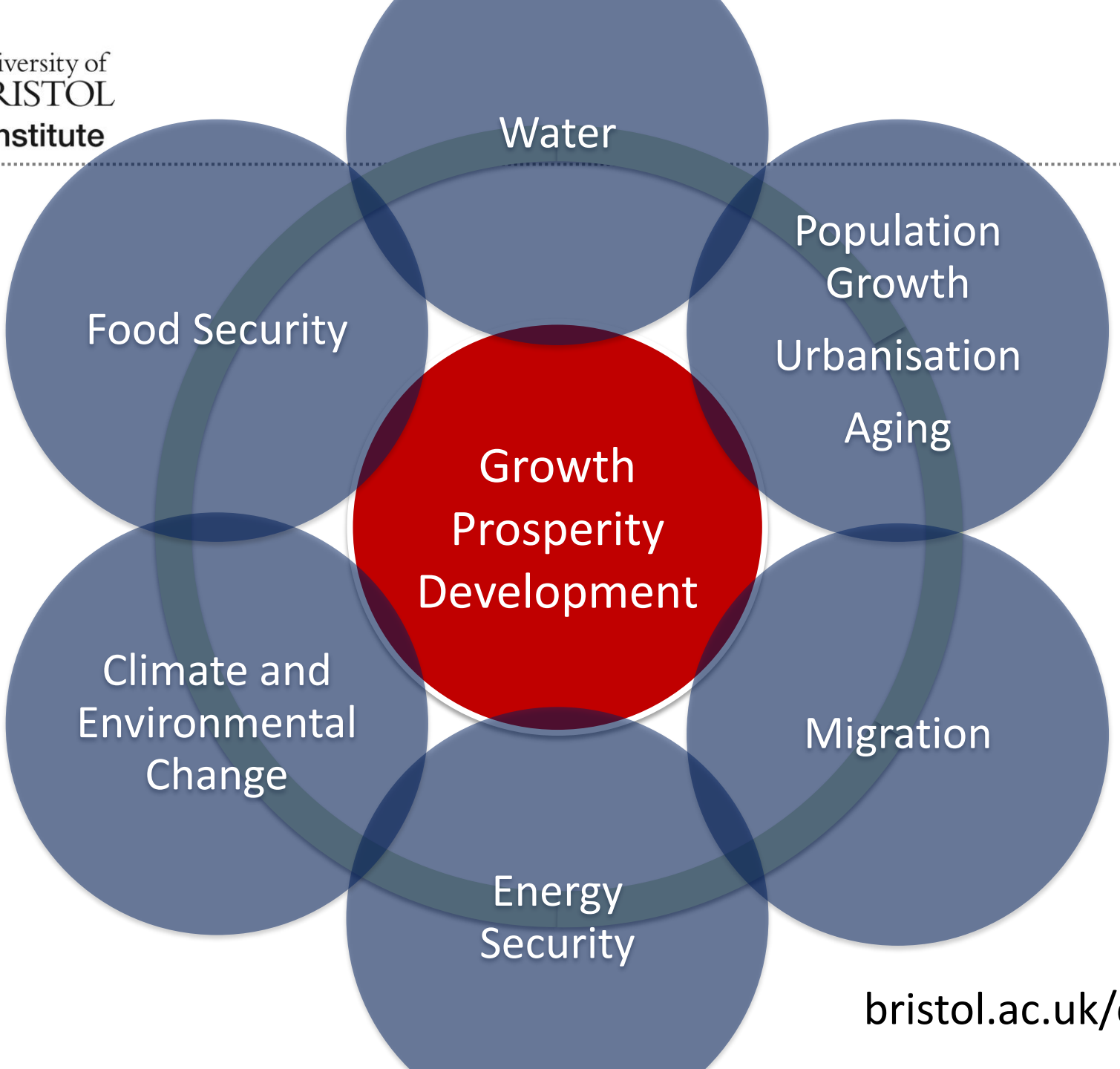

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1: Climate change uncertainty – especially deep and systemic uncertainty with respect to the response of social and biological systems to multiple stressors – *strongly* argues for mitigation rather than adaptation (reinforcing and adding to other arguments, i.e. ethical ones).

2. To limit global warming to 2C – in fact, to keep global warming below 5C – we must cut emissions markedly and eventually cease emissions.

- We have to do this *anyway* as we do not have unlimited fossil fuel.

3: Change is already and inevitably embedded in the system. The consequential increase in deep uncertainty means that we must fundamentally change how we view and empower resiliency at individual, community and national scale.

4: Climate change is an ethical issue – the poorest are most exposed to climate change and have the least access to some capacities that underpin resilience. Reducing inequality and enhancing social cohesion will mitigate these factors.

5: Climate change does not exist in isolation from other environmental (and other) challenges; therefore, we should aspire to a whole system approach to policy making. That has profound implications for politics – from the need to build trust in society and considering new forms of governance (i.e. devolution).

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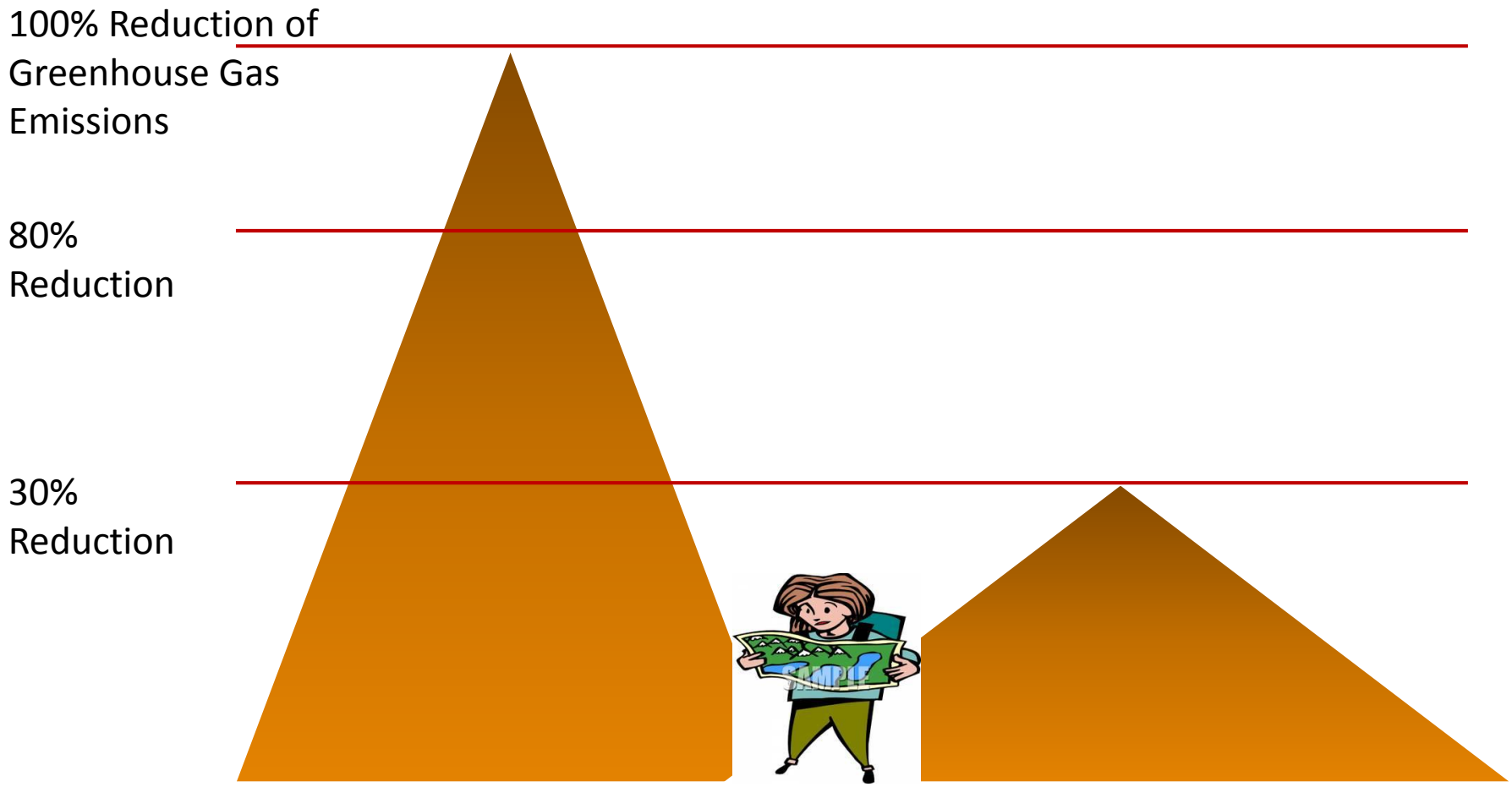

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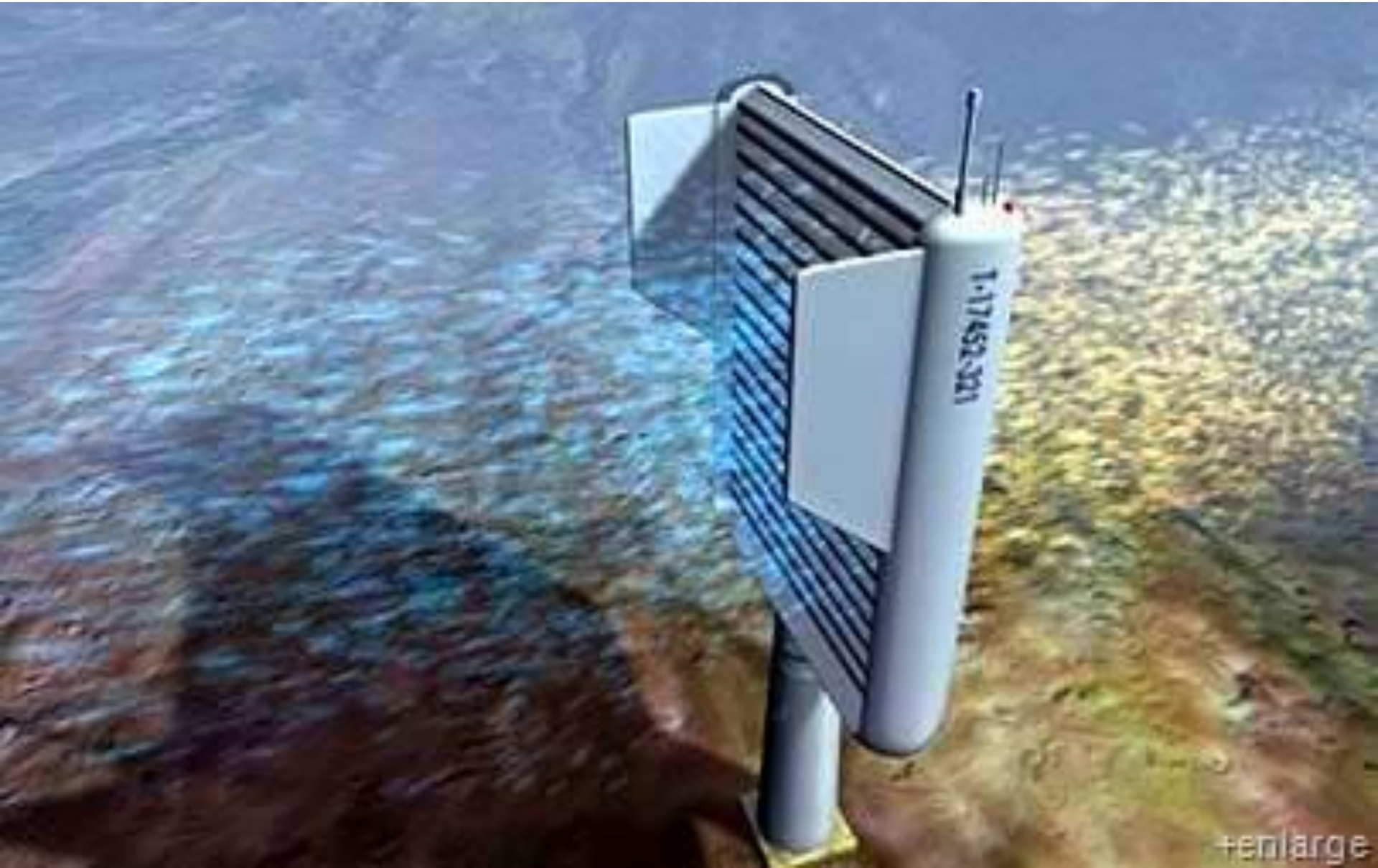

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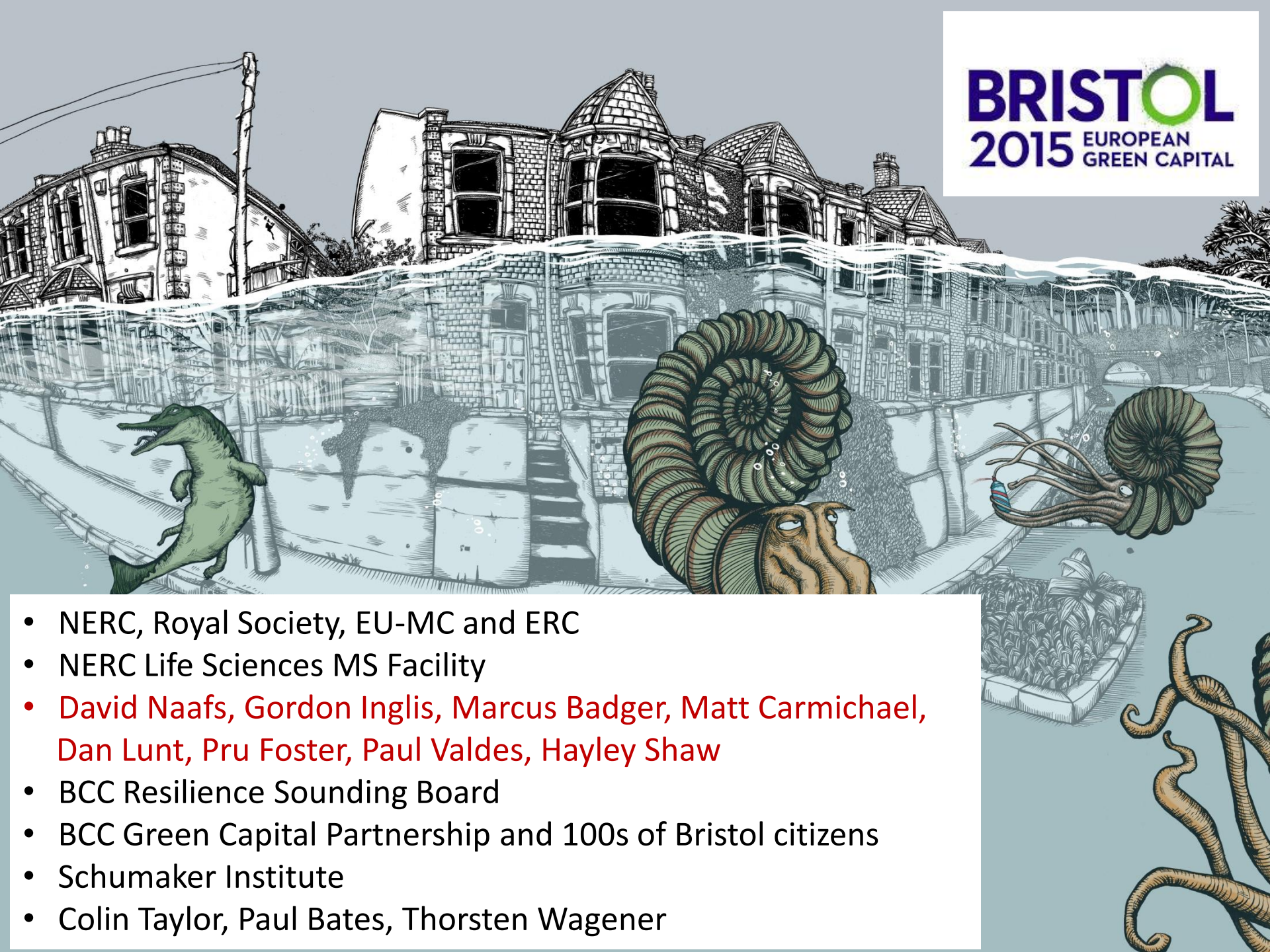

- NERC, Royal Society, EU-MC and ERC
- NERC Life Sciences MS Facility
- David Naafs, Gordon Inglis, Marcus Badger, Matt Carmichael, Dan Lunt, Pru Foster, Paul Valdes, Hayley Shaw
- BCC Resilience Sounding Board
- BCC Green Capital Partnership and 100s of Bristol citizens
- Schumaker Institute
- Colin Taylor, Paul Bates, Thorsten Wagener