Project ICAD

Advancing Knowledge Systems to Inform Climate Adaptation Decisions

Social Status of Technical Climate Knowledge for Adaptation Decision-Making

Centre for the Analysis of Times Series, LSE – 21st March 2013

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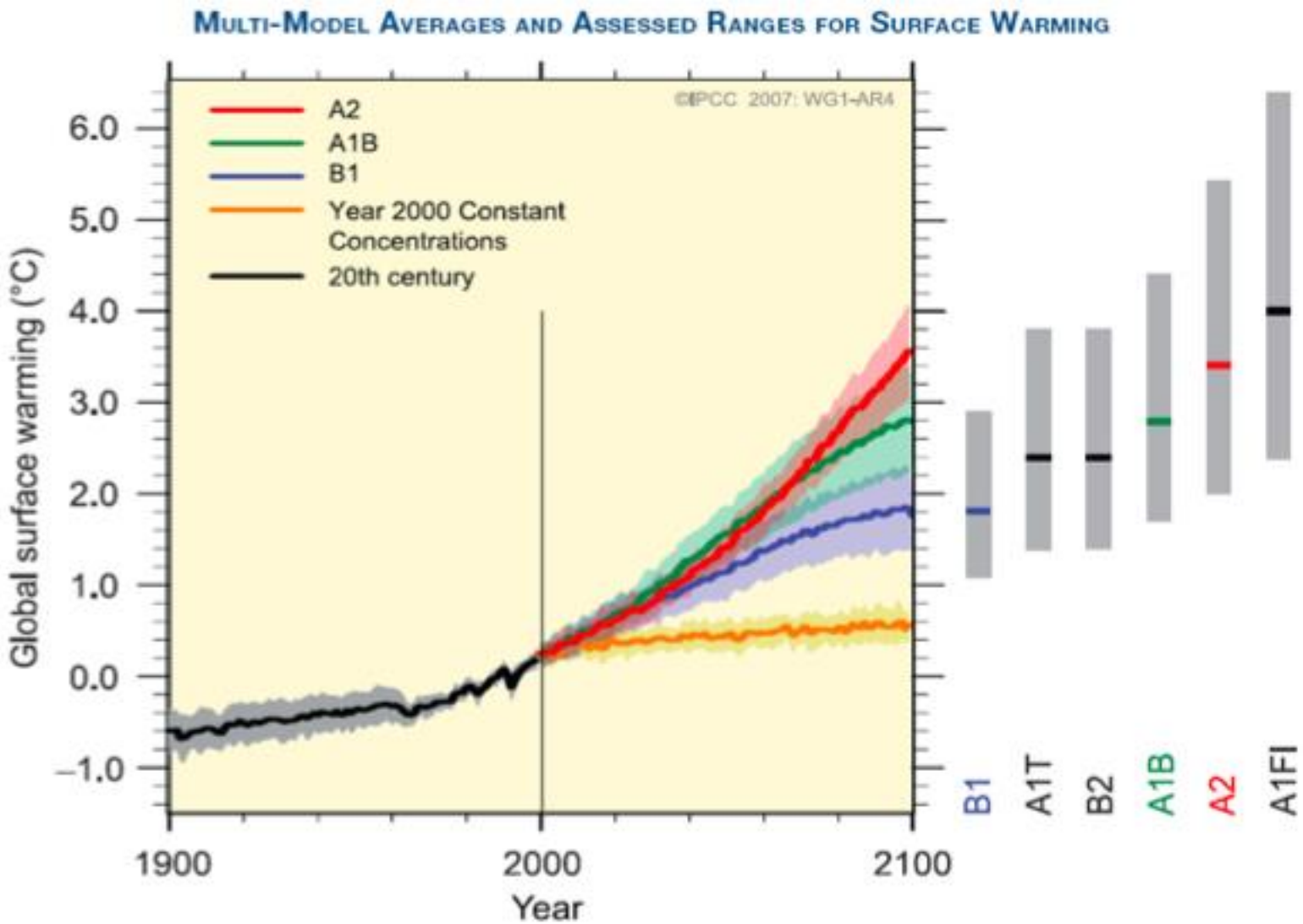
Why Adapt?

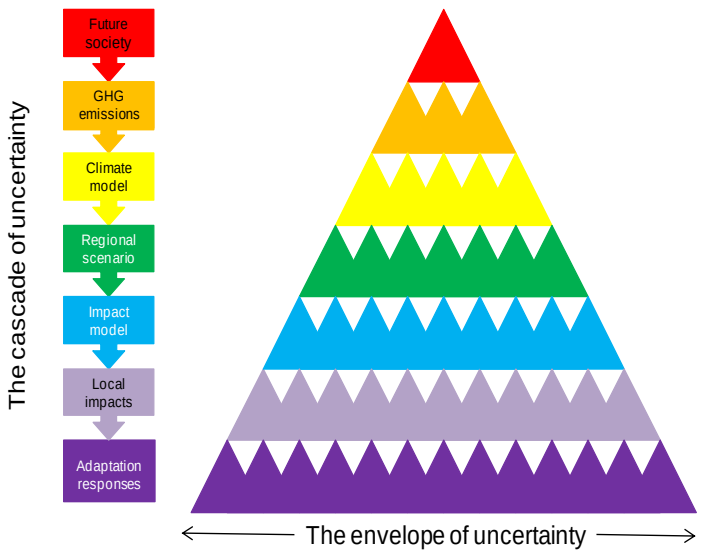

Multi-Model Averages and Assessed Ranges for Surface Warming
©IPCC 2007: WG1-AR4
A2
A1B
B1
Year 2000 Constant Concentrations
20th century
Global surface warming (°C)
6.0
5.0
4.0
3.0
2.0
1.0
0.0
−1.0
1900
2000
2100
Year
B1
A1T
B2
A1B
A2
A1FI

Why Adapt?

- Widespread consensus that climate change is happening, in large part due to human activities.
- "But knowing that the climate is getting warmer *on average* is of limited use in designing detailed adaptation decisions" (Frigg et al 2013).
- Need to understand local scale impacts but also need "reliable answers" to support decision-making (cf. Oreskes et al 2010; Tang & Dessai 2012).

The Challenge

- Climate variability and change are a major threat for the sustainable development of society
- Adaptation to the impacts of climate change is unavoidable
- There are significant uncertainties about how regional climate will change in the future
- Informing adaptation decisions will require new kinds of information and new ways of thinking and learning (NRC, 2009)



UK Context: Since 2008

Climate Change Act 2008

2008 CHAPTER 27

An Act to set a target for the year 2050 for the reduction of targeted greenhouse gas emissions; to provide for a system of carbon budgeting; to establish a Committee on Climate Change; to confer powers to establish trading schemes for the purpose of limiting greenhouse gas emissions or encouraging activities that reduce such emissions or remove greenhouse gas from the atmosphere; to make provision about adaptation to climate change; to confer powers to make schemes for providing financial incentives to produce less domestic waste and to recycle more of what is produced; to make provision about the collection of household waste; to confer powers to make provision about charging for single use carrier bags; to amend the provisions of the Energy Act 2004 about renewable transport fuel obligations; to make provision about carbon emissions reduction targets; to make other provision about climate change; and for connected purposes. 9

[26th November 2008]

BE IT ENACTED by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

UK 2012 | Climate Change Risk Assessment

Committee on Climate Change

Funded by:

defra

Department of Energy & Climate Change

Department of the Environment

The Scottish Government

Llywodraeth Cymru Welsh Assembly Government

Met Office

Environment Agency

Project Overview

- Principal Investigator: Prof Suraje Dessai
- PostDocs: James Porter & Geoff Whitman
- Funded by a European Research Council (ERC) Starting Grant under the domain of Social Science & Humanities (Environment and Society panel; SH3)
- €1.045 million grant spread over 4 years (1 April 2012 – 31 March 2016)

Research Streams

Social Status of Technical Climate Knowledge for Adaptation Decision-Making

Led by James Porter:

1.How, and why, does climate knowledge come to take a particular form in adaptation?

2.What do experts' think users' need?

3.To what extent is climate change knowledge co-produced?

4.How, and with what effect, does climate knowledge come to be translated across different social worlds?

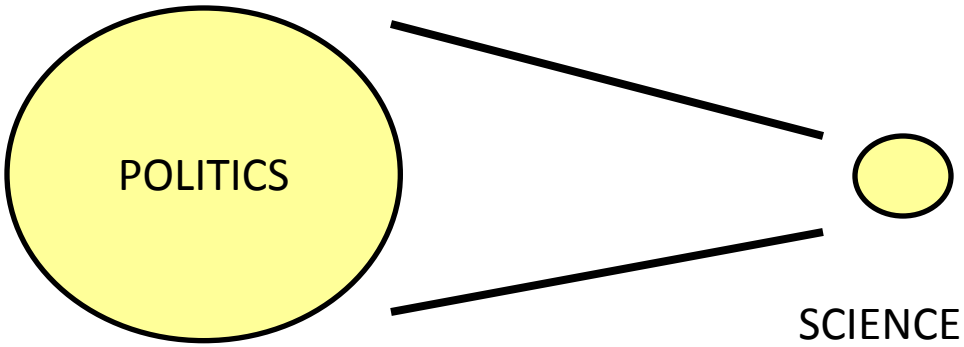
Understanding Climate Information Needs Across Society

Led by Geoff Whitman:

1. What is the capacity for different users to apply climate information?
2. How do organisations use climate information in their decision-making?
3. What levels of uncertainty are they able, or willing, to tolerate in decision-making?
4. To what extent is climate change knowledge co-produced?

Changes to Science and Policy

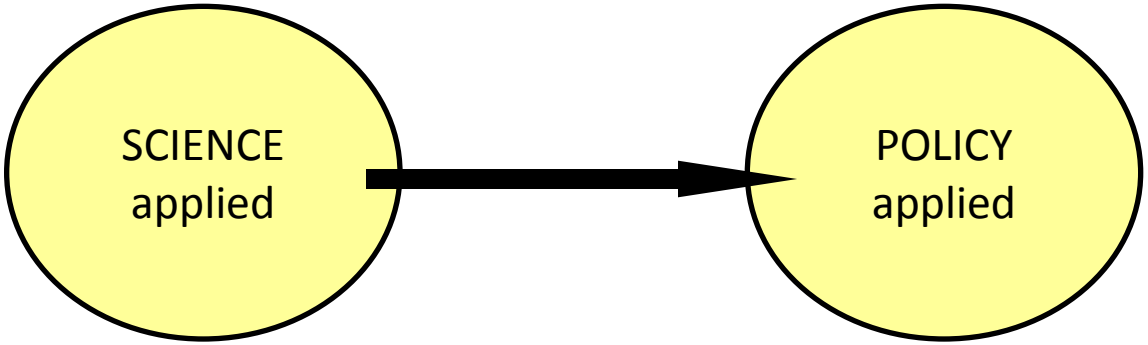
Conventional Political History Approach of Science-Policy



e.g. Atom Bomb

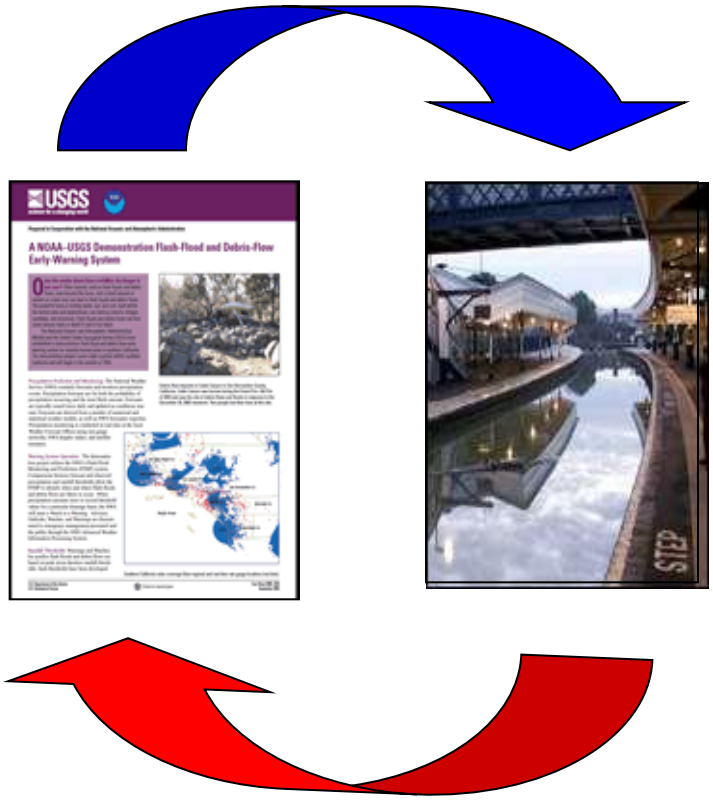
e.g. Personal Computers

Linear Model of the Science-Policy Information Flow



Co-Producing Science and Policy

e.g. Jasanoff (2004)



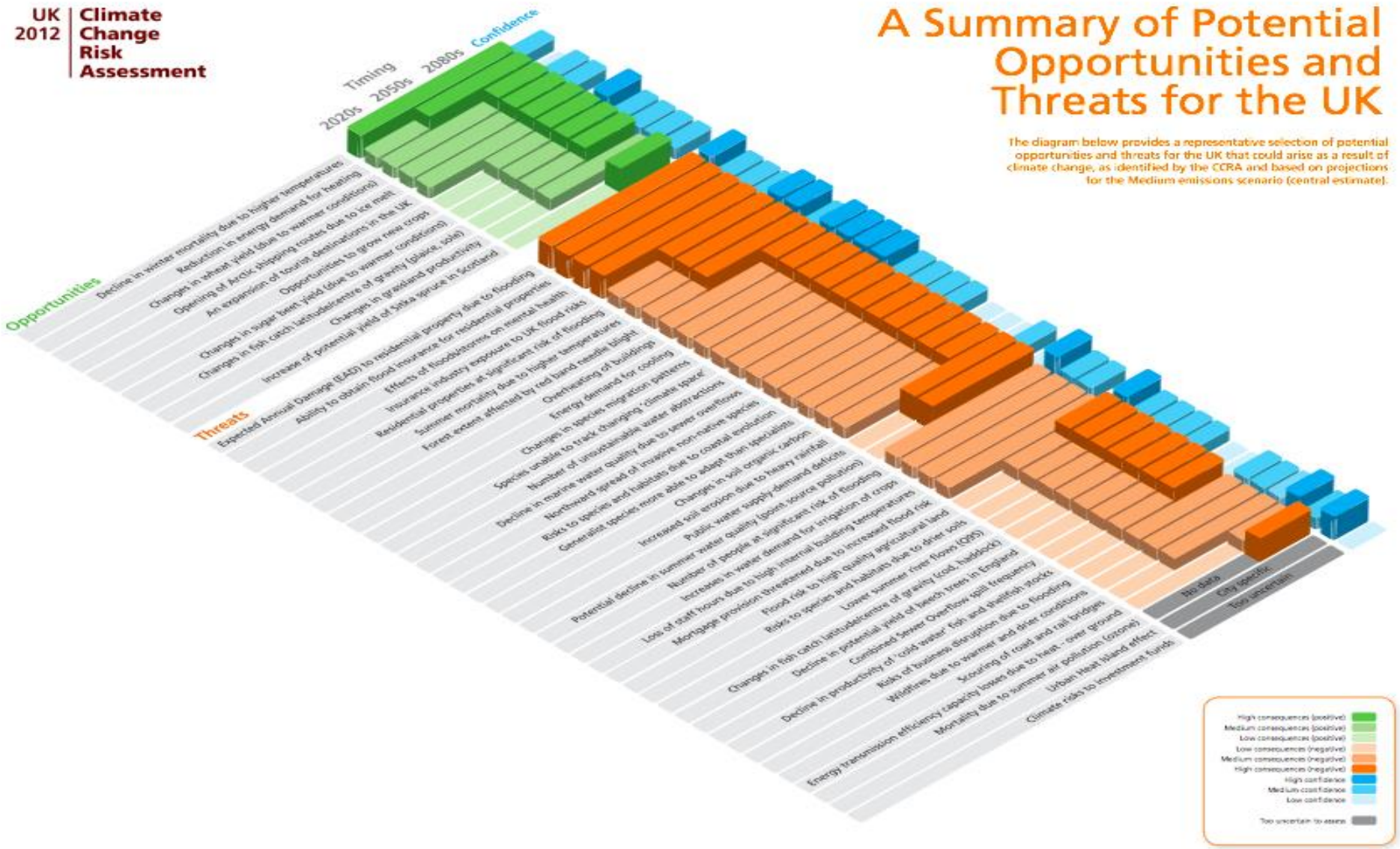
UKCP09: Stakeholder Engagement?

"consult[ed] widely with a broad spectrum of users to establish an understanding of their requirements and expectations of climate change information…" (UKCIP 2012).

- Users' need to quantify uncertainty or science-first?

- Data friction – access, collaboration and commercial considerations

- New projections (n=10 model runs) – strategic positioning?



- Different data richness across different data infrastructures, why?
- Representative of maturities of different sectors, OR

Paranoia?

- CCRA reports place considerable emphasis on "defensibility, traceability and accountability"
- Cancelling of second phase of stakeholder engagement over "confidentiality concerns"
- "standardisation and proper surveillance are in some ways more important to a public measurement system then a close approximation to true values" (Porter, 1992: p391).

Where Are We Headed?

1. Genealogy of UKCP09 and the CCRA

- How, why, and with what effect, did UKCP09 and the CCRA come to take the particular forms they did? How is uncertainty managed through each process? And which experts matter at what point, and why?

2. New Production Sites – Growth of Commercial Climate Science

- How have specialist consultancies applied UKCP09 and CCRA? How do they add-value to the translation, interpretation and repackaging of climate information? And what friction, if any, does climate knowledge encounter as it moves from one site to another?

3. UK's Next Generation of National Climate Scenarios/Risk Assessments

- When will new UK climate projections/assessments will be commissioned? Will they differ from previous incarnations? If so, how, and of course why?

Extras

Online Surveys:
1.Climate Adaptation Information: A Survey of UK Organisations

1.Climate Adaptation: A Survey of Local Authorities in the Great Britain

- 407 Local Authorities in GB - 28.5% response rate
- Follow-up interviews (n=20) across different regions
- Comparison with Demeritt & Langdon (2004) survey

•LA workforce better informed and more confident about accessing and using climate information BUT:
•Challenges over the framing of climate change (mitigation has value adaption doesn't)
•Business case for mitigation outweighs adaptation
•Loss of statutory targets (cf. NI-188)
•Rise of resilience (short-term timescales)
•Regional differences (England Vs. Scotland and Wales)

Summary

- Social processes involved in, and their effects on, the creation of technical climate knowledge and its use
- Disentangling why decisions were taken and understanding the role practical considerations, at once socio-technical and institutional-political, played
- Just the beginnings of the fieldwork so watch this space!

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