



UCL POLICY COMMISSION ON COMMUNICATING CLIMATE SCIENCE

Developing Better Climate Mitigation Policies: Challenging current climate change risk assessment approaches

The UCL Policy Commission on Communicating Climate Science (CCSPC) brought together 30 policymakers, climate scientists and research funders in a workshop to explore how climate change risk assessments can be more effective drivers of climate change mitigation policy. The workshop mapped challenges and deficiencies as well as opportunities for improvement.

A key message from the workshop was the need for an iterative dialogue between decision makers, researchers and funders. This is needed in order to **ensure that the scientific research that informs Climate Change Risk Assessments becomes better aligned with decision makers' needs**. Since the workshop, the UCL CCSPC has already taken steps to foster this dialogue, and will continue to facilitate it in the future.

Current Approaches to Risk Management

Many contexts of risk management are commonly assessed in terms of threshold impacts, driven by questions such as: "What do we want to avoid?"; "What is the worst that can happen?"; or "What makes the impact irreversible?" For an insurance firm, for example, the

KEY MESSAGES

The workshop identified the need for an ongoing collaboration between the climate science research community, decision makers and research funders to align the questions asked of and by the different stakeholders. This collaboration includes the following:

- **Create opportunities for the co-production** of research questions.
- **Establish new 'knowledge broker' roles**, common in other areas of public policy such as security and health, to bridge the stakeholder perspectives
- **Better manage different approaches** to risk across stakeholder communities.
- **Reward 'policy relevance'** of climate research over traditional 'novelty / discovery'.
- **Develop scenarios** (e.g., plausible worst-case scenarios) to support decision making.

irreversible impact is insolvency; for a building planner, it can be building collapse.

In the domain of climate change, most of the existing research takes a different approach. Rather than looking at threshold impacts, it projects the most likely value of a parameter as a function of time, e.g. average global temperatures or median sea level rise.

In "Climate Change: a Risk Assessment", King and co-authors (2015) argued that the risks of climate change should be managed in the same way as risks to national security or public health. However, in the years since its publication, the response to the report has been muted and slow.

Climate Change Risk Assessments (CCRA) act as a bridge between climate science research and climate change policy. They identify the risks associated with climate change, and form the basis for planning and decision making. In the UK, the Climate Change Act 2008 requires the government to publish a CCRA report every five years. The most recent CCRA was published in 2017. Preparations for the 2022 report have already begun.

Challenges

The workshop set out to clarify the purpose of CCRAs and quickly uncovered differences between perspectives in understanding, practice and language¹. This demonstrates the importance of bringing together participants with diverse professional backgrounds to jointly explore CCRAs and demonstrates how much work may be required to manage tensions between the different perspectives.

Key challenges that were uncovered are around:

- **Scientific research.** Are scientists conducting research that is appropriate for risk assessment? Do funders understand what questions policymakers want to see answered? Do policymakers ask questions that can be answered by research?
- **The purpose of CCRAs.** Are they a communication tool targeted at expert users and decision makers, or should they be suitable for non-experts? Are they only to inform decisions on adaptation, or also on mitigation? To what degree do CCRAs need to be bespoke versus generic and/or reusable?

These challenges should not be seen as problems that can be permanently resolved. Rather, they are areas that need continuous management.

¹ One such tension that emerged was between 'risk' and 'impact'. The former, strictly speaking, only focus on the risks posed by climate change. The latter also look at the benefits of implementing mitigation and/or adaptation policies. We will not make such a distinction here, but use the term CCRA with the implication that additional benefits will follow from good policy decisions.

Challenges within a particular stakeholder groups can act as a barrier to effective communication between stakeholder communities. For instance, how ‘novelty’ is incentivised over ‘policy relevance’ in academic research plays a role in the misalignment between the questions policymakers would like to see answered, and the research the scientific community performs.

Some of the challenges that emerged are among the “usual suspects”, i.e., challenges that are endemic to the problem of climate change and can be expected to persist. For example, the desire for certainty among end users of CCRAs versus the uncertainty inherent in climate science; or the differences in timescales between the UK policy cycle (3 to 5 years) and the long-term consequences of climate change (30 years+). However, the discussion identified interventions that can deliver positive change in spite of this.

Workshop Aims and Format

The aims of the UCL CCSPC workshop were to map the perceived barriers to change, and identify ways to move forward. It assembled a group of decision makers from government departments, climate researchers and research funders in a one-day, facilitated co-production format. An implicit aim was to identify the diversity of perspectives on CCRAs, the tensions between the different stakeholder communities, and the potential areas for improvement. Rather than representing a consensus position of all participants, this document captures a collective picture of the challenges as well as key points for future development.

Conclusions

The range and variety of the proposed interventions available highlight how the responsibility for delivering change is fragmented across different stakeholder groups, and would therefore benefit from coordination and continued dialogue across the different stakeholder domains. The UCL CCSPC has started to identify opportunities to support this dialogue, and will continue to do so in the near future.

References

King, D., Schrag, D.P., Dadi, Z., Ye, Q., and Ghosh, A. (2015). Climate Change: a Risk Assessment. Centre for Science and Policy, University of Cambridge.

Opportunities for Development

Workshop participants identified a number of concrete steps which can be developed to improve how CCRAs inform the formulation of climate change policy.

- **Establishing new ‘knowledge broker’ roles**, common in other domains, to bridge stakeholder perspectives. For instance, in defence and security, risk analysts translate primary research into decision-relevant risk assessments. In health, co-production facilitators help to bridge the perspectives of patient groups, medical staff and health service management. Both the risk analyst and co-production facilitator role are currently absent for climate change.
- **International standardisation of how to conduct a CCRA**, which would establish CCRAs comparable across regions and nations, as well as provide a training blueprint for the capabilities required for ‘risk analysts’.
- **Case studies to support decision making**. Plausible worst-case scenarios would bring to life the potential scale of the problem for decision makers.
- **Allocate funding to conduct research** for the express purpose of informing CCRA reports. Previous reports had to rely on research that had not been tailored to the purpose of carrying out risk assessments.

The workshop also identified broader areas of systematic change:

- **Improved co-production between researchers, decision makers, and research funders** to align the questions asked of and by different stakeholders. Such co-production practices would need to be properly resourced in each group, and require building the capacity of the ‘knowledge brokers’ who take on intermediary roles.
- **Better management of different approaches to risk** in tolerance to or avoidance of ‘false positives’ and ‘false negatives’. For instance, in public health, preparing for the threat of an epidemic that fails to materialise (false positive) is preferable to an epidemic that escapes containment procedures (false negative). In contrast to other policy domains, climate research has tended to avoid generating false positives, resulting in opposing meanings of the phrase “conservative risk estimate”: for climate change, it may mean an underplaying of risk, rather than an overplaying of risk.
- **Changing academic incentive structures** which currently tend towards rewarding publication as the main measure of academic success, often failing to identify other areas of research impact, such as relevance to policy. A shift in academic culture, to one that rewarded research impact more generally, could result in more policy-relevant research.

1. Identify gaps in climate change communication and policy and create targeted interventions with significant impacts.
2. Help break down communication barriers within and between professional communities and the wider public.