



UK Climate Resilience Programme Workshop

Leeds, 14-15th November 2019

Summary Report

Kate Lonsdale and Suraje Dessai (Programme Champions)

Overview

The workshop brought together the first tranche of funded projects of the UK Climate Resilience Programme from both the Met Office and UKRI. The objectives of the workshop were to:

- Introduce the programme and the science plan
- Share emerging findings from research
- Identify common themes and make connections between projects
- Share approach to user interaction for impact
- Inform funded researchers of future calls and discuss how they can stay involved

Mapping funded projects to programme legacy

Each of the 24 funded projects was asked to make a 3-4 minute 'taster' presentation of their project to augment the 'project in a page' information shared in advance of the workshop. In addition, each presenter was asked to indicate which of the three programme objectives (i.e. characterising the risk; managing the risk and co-producing climate services) applied to their project and which of the seven legacy items their work contributes to. Many researchers felt their projects related to more than one of the objectives, and to more than one legacy item.

Mapping the project against programme legacy (see Appendix 1 for image)

Legacy Item	Name	No. Projects contributing
1	A step change in future Climate Change Risk Assessment capability	14
2	Enhanced capability and understanding of climate hazard and risk	11
3	Strengthened understanding of how people, organisations and policy scales are adapting	9
4	Consistent set of UK socio-economic scenarios	1
5	UK roadmap for climate services	3
6	Growing the community of interacting researchers, practitioners and policy-makers in climate resilience	12
7	Synthesising findings across the programme to provide updated national guidance standards, regulations and good practice	6



Progress to Impact

The focus of programme evaluation for the champions is to support **learning** from and within the programme. The delivery bodies also have a programme management evaluation need to assess accountability - a linked but different focus. For UKRI funded projects are expected to complete Research Fish and Met Office projects to comply with their own internal monitoring and evaluation systems.

Having mapped the currently funded projects against the legacy items and the objectives, we wanted to hear more about what was emerging from the projects and to trial an approach to draw out progress and learn more about what was changing or might change as a result of the funded research. Outcome harvesting, the proposed approach, can be used to 'identify, describe, verify and analyse the changes brought about through a project intervention'¹. The focus is primarily on learning about what was achieved, the process of change and how an outcome contributes to this (effectiveness rather than efficiency/performance). The underlying question is: What is happening in a different way because of the influence of the work you are doing? Trialling this approach each project produced at least one example of an outcome or progress towards an outcome (27 outcomes in total). The vast majority (16) were planned outcomes and only one completely unanticipated. Six outcomes were considered somewhat unanticipated or something that was 'aspired for' but not sure if it would be achieved. These outcomes are listed in Appendix 3 of this summary.

The vast majority also felt that their outcome would be replicable and scalable – and some described more concrete next stages for scaling up. As many of these projects are short, sustainability depends largely on the availability of further funding although there were a couple of examples of where getting findings into regulations e.g. the Care Quality Commission, meant that there could be longer term impact of the work and also where project work was part of a bigger initiative e.g. Copernicus. The outcome harvesting approach was seen as a reasonable way to evaluate the initially funded projects of the programme.

Identified cross-cutting themes

Having reflected on the currently funded projects a number of themes were identified by participants as cutting across the UK Climate Resilience Programme. Notes from this session outlining the themes discussed are given in Appendix 2. Six of these themes then went on to form small group discussions later in the workshop. The summaries of these discussion sessions are given below.

Theme 1: Climate information – models and methods

Many projects are already accessing climate data such as UKCP18 and noted that it essential to have this on the most appropriate time and spatial scales. Additionally, a number of ideas were put forward for additional needs. Many people noted a range of different methods available, including both simulation models and statistical approaches, and asked for better provision of knowledge on the robustness of different approaches, including the assumptions they use. Additionally, some users of climate data asked for a wider range of metrics relevant to them, so that they don't need to calculate it themselves (for example PET and pre-calculated indices, including some that are built

¹ <https://www.intrac.org/wpcms/wp-content/uploads/2017/01/Outcome-harvesting.pdf>



form very high frequency data). The group highlighted the importance of co-production in projection datasets and tools in order to make them more useful. The idea of more training, including that aimed at postdocs was discussed and noted as a need. More guidance on choosing the appropriate tools would be welcomed.

A number of projects highlighted the importance of combining climate information with other situation relevant information, including exposure and vulnerability data. The usefulness of non-numerical data was also highlighted with examples of SURGEWATCH and TEMPEST discussed. Some projects also highlighted the importance and sometime the difficulty in propagating uncertainty through between the climate data and more user relevant systems. The use of storylines and worse case scenarios was discussed. The people in this group generally all agreed on the importance of being able to better communicate uncertainty to a range of different audiences and people from other subject areas. The need to draw on a wider range of disciplines to help this communication activity was noted.

One particular aspect of the discussion that emerged strongly was the need to be able to consider extremes, and impact of climate extremes on various systems. Examples included: Neil Macdonald project, Emergency planning experience, Water planning / water quality, Crop / ag projects, Biodiversity / extremes / recovery (UEA). There was interest in the need to further consider compound events, multiple hazards, 'repeat' extremes, and recovery timescales.

Theme 2: Co-production and stakeholder engagement

There are a range of approaches to co-development in the currently funded work of the programme. Not all the currently funded projects are working with non-academic partners. Some projects represented in the group reported changing their approach in response to user feedback suggesting that non-academic partners can influence research direction. An example was given of decreasing flexibility for research where funders (not for this programme) complained when researchers changed direction in response to external influences. It was also noted that there are multiple levels of users and very different implications for approaches depending on who you are working with.

Quick turn around and short lead in time for these projects. As these projects had to be turned around very quickly PIs only had time to involve people they knew well. A gap in time (not specified but tentatively between 2-4 months) between the launch of an opportunity and the bid deadline would enable research teams to get the optimal group together outside the usual suspects and/or potentially a small scoping project before larger funding pot was made available.

Shifting the focus of the funding. Funding and research calls focus typically on advancing the science and less on the user engagement. There is potential for users to be recognised more fully in future calls and recognise that project scope might change and funding needs to allow for adaptive management and course correction over time. True co-production requires equality and thus is difficult when only the academics get paid. Non-academic partners could be paid and there are two examples of subcontracting in the currently funded projects. The value of co-production needs to be recognised by project reviewers and funders. And a signal needs to come from UKRI that this is a key part of the work. Science excellence is the currently stated goal but this may need realigning to include usability and applicability in an SPF context. Potentially projects need to set aside part of their budget for this (5%).

Next steps:



- blog post that describes good examples of co-production
- Discuss what needs to change to support more equal research co-production with Steering Committee, UKRI, Met Office in order to ensure ongoing research excellence. Could co-opt a user representatives onto the Steering Group to focus on this? Or develop an additional advisory committee
- Think about how to support co-production in the remaining work of the programme e.g. through the embedded researchers

Theme 3: Uncertainty – modelling, data and communication

Communication of uncertainty was identified as a challenge for the community. There was recognition of a tension between fulfilling user needs and matching user understanding. Best practice in communicating uncertainty depends on user/decision context which requires the testing of uncertainty communication strategies.

Uncertainty in data and modelling was discussed by the group. For example, there was discussion about how the different UKCP18 products relate to each other since they are sampling different parts of the uncertainty space. The group also discussed the calibration of models, uncertainty in processes (including observations) and the risk of multiple hazards.

Theme 4: Socio-economic scenarios

Many projects do and should use socio-economic information, including academic projects, projects by industry (e.g. large water companies) and national policy makers. A project will be announced shortly that will produce new UK socio-economic scenarios. The members of this group highlighted the need to include both academics and other potential policy or planning users in helping to steer this work. There was some discussion of how to achieve this given limits to the size of a user group for the project: ideas included a workshop with the project providers, or a survey of the existing projects.

There was some discussion of what should be in the new scenarios, such as energy infrastructure, health, education, population (split by geography / age / employment / etc). At present many projects are using different projections e.g. ONS – projected to include current government stats.

A number of people with expertise in this area highlighted the need for consistency, for instance with IPCC and CCRA, and other widely used data. The ability to easily compare methods with those produced for other regions was noted as being useful. There was discussion of but no firm conclusion how to include some major policy uncertainties, such as BREXIT.

Theme 5: Knowledge brokering – bridging between research outputs and application

Recognition for everyone: The whole process of research and impact is one of adaptive learning. This learning is about the programme as well as the projects.

Tasks for the Champions – Immediate: There is an ambition for stakeholders to be part of policy dialogue/forum in June and this might be a time to discuss application and showcase good examples of co-production. Also to bring people in to maximise the scope of the programme with external knowledge and discussion of application.



Tasks for the Champions - Medium term: It is crucial to have learning outputs from projects about what went well and what went less well and perhaps something more specifically on climate services. It would be useful to map on to the CCRA's strategic gaps and users' knowledge aspirations identified in the design of the programme.

Theme 6: Definitions and conceptualisation of key terms

The concept of resilience was discussed. There was general agreement that in broad terms resilience was uncontroversial, but when applied to different systems different definitions and conceptualisations emerge. We discussed how resilience could be measured.

Next steps for the programme

UKRI are now inviting applications for further UK Climate Resilience funding opportunities for the following topics:

- Present & future climate hazard (led by NERC): Developing and evaluating new methods and techniques to characterise current and future climate hazards and underlying driving processes. <https://nerc.ukri.org/research/funded/programmes/ukclimate/news/further-ukri-opportunities/>
- Embedded Researchers (led by NERC): Providing support for researchers to undertake UK based climate resilience research through close collaboration with non-academic host partners. <https://nerc.ukri.org/research/funded/programmes/ukclimate/news/further-ukri-opportunities/>
- Living with Climate Uncertainty (led by AHRC): Exploring the understanding of what it means to live with uncertainty <https://ahrc.ukri.org/funding/apply-for-funding/current-opportunities/uk-climate-resilience-programme-living-with-climate-uncertainty-research-grants-call/>

National and international dimensions

Participants were encouraged to contribute to the IPCC Sixth Assessment Report (AR6) by reviewing drafts and submitting their research to peer-review journals by the following deadlines:

Working Group 1 – Physical Science Basis:

- Literature submission cut off – 31 December 2019
- Literature acceptance cut off – 30 September 2020

Working Group 2 - Impacts, Adaptation and Vulnerability:

- cut-off date for submitted papers – 1 July 2020
- cut-off date for accepted papers – 1 May 2021

Participants were encouraged to present their research at **key international conferences** e.g. American/European Geophysical Union meeting; American/European Meteorological Society meeting; International Conference on Climate Services (Feb 2020); Adaptation Futures 2020 (April in New Delhi) and 2022 (May/June in Montreal); European climate change adaptation conference (2021 in Slovenia); Global Adaptation Summit, Amsterdam, 22 Oct 2020.



Nationally, participants were encouraged to present their research at the Climate Impact and Risk Assessment National Meeting – probably in September 2020 in Exeter; Likely to be a COP science conference and input into CCRA3 evidence report.

Key dates for providing evidence to CCRA3:

- CCRA3 second call for evidence – out now, deadline 31st January 2020
- Link: <https://www.exeter.ac.uk/gsi/ccra3/evidence/>
- **Cut off evidence date for CCRA3 - Aug 2020**
- CCRA3 publication – June 2021

- CCRA4 commences – start of 2023 (approx.)