

User needs for derived products from UKCP18

Background

In 2018 new climate change projections will be released (UKCP18). UKCP18 will provide an update to the 2009 projections for the United Kingdom (UKCP09) using improved climate models and observational data. UKCP18 will also provide some new components, a greater number of plausible climate change pathways, and data at a finer spatial resolution than was available in UKCP09.

Many decision makers will need information about the impacts of the climate changes that are described in the new projections for their specific areas or sectors of interest, for example, future flood or heat stress risk. Products that combine UKCP18 projections information with other data to create new or updated impacts information derived from UKCP18 – so-called derived products – are needed to fill this information gap.

The development of derived products lies beyond the scope of the UKCP18 project. However, the UKCP18 project has undertaken work to understand user requirements for derived products. This document summarises the findings of that work. It identifies principles to prioritise the development of derived products and suggests ways in which some of these products could be developed.

A [set of supporting slides](#) has also been developed to summarise user requirements in specific subject areas. These have been developed for use by project members, partners and users, to raise awareness of the need for derived products and to help them identify and progress opportunities for developing required products.

What products are needed?

The UKCP18 project completed a gap analysis of user needs for products derived from UKCP18. A non-exhaustive list of topic areas identified in the gap analysis are set out in Table 1. The level of detail with which users have articulated the exact product required also varies between subjects so needs are grouped into three broad categories:

1. The need has been well-defined and potential products that could address the need have been described at a high level.
2. The need has been well-defined, but the product required to fill the gap less so.
3. A need for better information on a particular risk area has been identified, but the product that might address the gap has not been articulated. Further scoping work is required.

Table 1: Subject areas needing derived products information.

(n) = narrative available

(n)+ = narrative and potential options available

Need defined; possible products defined	Need defined; product not well defined	Need defined; product to be scoped
• Coastal erosion (n) +	• Landslides (n)	• Air quality (n)
• Flood (n) +	• River erosion and bed scour (n)	• Fire risk
• River flow and river levels (n) +	• Soil moisture deficit (n)	• Health impacts
• Heat stress (n) +	• Drought (n)	• Earth movements
	• Urban drainage	• Groundwater recharge
		• Urban heat island
		• Vegetation growth
		• Water stress metrics

A set of narratives have been developed for all topics above marked with (n). The narratives address a number of questions, including:

- Who needs what products and why?
- What information and resources already exist?
- What expertise is required and what outputs from UKCP18 will need to be used?

Topics marked with (n)+ have been recognised as priority topics consistent with the findings of the UK’s second Climate Change Risk Assessment (CCRA2). This identified risks from flooding and coastal change, and risks to health, well-being and productivity from high temperatures as priority areas of further research.

How could derived products be developed?

Mechanisms for developing derived products could be to:

- Update an existing product (that was developed using UKCP09) with UKCP18 information. Transition guidance will be provided by the UKCP18 project on the important differences between UKCP09 and UKCP18. This guidance will help some establish whether research and resources developed with UKCP09 are still valid, or need to be revisited with UKCP18. For others, specific assessments will need to be undertaken.
- Incorporate consideration of UKCP18 into existing or planned research
- Influence others to create new products that meet well defined needs
- Conduct knowledge exchange or related events to further scope what work is needed for those topics where a risk is identified but the product need is poorly defined.

Which derived products should be prioritised?

Derived products should be prioritised where:

- There is a strong societal need for a product to benefit wider society (products that benefit specific organisations or individuals should be self-financed);
- There is an obvious market failure, meaning the market is unlikely to provide the information needed to build national capacity in climate resilience;
- The market is unlikely to deliver a product of the required standard;
- It would be more efficient and cost effective to do it once nationally;
- Producing the product nationally, once, would not compete with the market;
- It addresses a national research gap or priority identified in the national Climate Change Risk Assessment (CCRA2);
- It is practicable to develop an affordable and scientifically credible product.

How can you help?

Project members, partners and users are encouraged to use this document and the accompanying slide set to raise awareness of the need for derived products and to actively identify opportunities for developing them through your networks.

You can champion work to address priorities gaps in your area of interest by:

- Leading engagement with your networks;
- Supporting knowledge exchange events with researchers and practitioners to explore options for shaping and delivering products; and
- Helping to scope and refine the product requirement where needs are poorly articulated.

For more information [get in touch](#) with the UKCP18 project.