Delivering Useful Climate Information in the UK - Continuing to learn lessons

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Evolution of climate information

- UK climate projections produced since 1991
- UKCIP supporting delivery of UKCIP98, UKCIP02 and UKCP09
- Each version has become more detailed, building upon:
  - Improved scientific understanding of the climate
  - Increased computing power
  - Developing requirements of the user community
- Each has represented best scientific knowledge at that time
- Targeted user community has evolved and grown

CCIRG91  CCIRG96  UKCIP98  UKCIP02  UKCP09  UKCIPnext
Some weaknesses identified in UKCIP02

- **Ease of access and use**
  - UKCIP02 just numbers and maps – no capability to manipulate data
  - No UKCIP02 guidance

- **Uncertainty**
  - Limited quantification of uncertainty – leading to fewer decisions because of lack of confidence in basing a decision on one estimate.

- **Spatial Resolution**
  - UKCIP02 at 50km resolution, no administration region information

- **Observed Datasets**
  - Limited observed datasets for supporting current vulnerability studies

- **Training and Support**
  - Limited training and support to encourage use of UKCIP02
Production Partners

• Management by Defra, Hadley Centre, UKCIP
• User Panel, Steering Group, Expert Review
• Others delivered User Interface, Marine, Weather Generator, Guidance
Improvements

- Improved representation of the climate system
- Quantification of modelling uncertainty
- Probabilistic output → robust decisions
- More spatial and temporal detail
- User interface
- Training programme
- Managed enquiry system
UKCP09 – Responding to Users

Uncertainty

Marine

25 km grid

Spatial resolution

Administrative

River Basin

Temporal resolution

30-year time periods

1961–1990 (Base period)

2030–2060 (2050)
2020–2049 (2040)
2010–2039 (2020)
Users’ Panel

- Users from different sectors e.g., forestry, agriculture, government, utilities, academics, experts in uncertainty and communications
- Informed the modelling and the development of the user support - user interface, guidance and the website
- Provided input into potential uses of UKCP09 in different situations
- Advised funders on aspects of importance to the users
- Provided a forum for climate scientists and the users to talk to each other
Role of Users’ Panel

• User Guidance
  o Reviewing Structure
  o Reviewing content
  o Advising on language used

• Worked Examples
  o Developing hypothetical uses of UKCP09 in worked examples using dummy data

• Development of User Interface
  o Testing other websites to identify aspects to include in the UKCP09 User Interface
  o Testing Beta sites and commenting on structure and functionality
User/Provider engagement

- Meeting of users and providers to consider options and understand limitations and assumptions that would affect use
  - Providers’ opportunity to understand the nature and scope of potential uses
  - Users’ opportunity to share learning and challenges between themselves
- Meeting of Users with experts in communicating probabilistic information and reviewed associated literature
- Engagement of users and experts to consider the nature and scope of user guidance and worked examples required
Helpdesk and FAQs

- Users’ Panel helped define the scope of the helpdesk
- Using the helpdesk to create FAQs and identify areas of the guidance that need improving
- Using helpdesk to identify potential extras that may enhance the utility and uptake of UKCP09
Different users: different needs

- Not all uses need data!
- Key findings, headline messages, pre-prepared maps or graphs may suit the intended use
- These products may also better inform how the more detailed climate data could be used – focus on periods or areas of particular interest, choice of variables, etc
- Don’t let users to get mesmerised by the numbers!

Warmer and wetter winters, with hotter and drier summers
The summer mean daily maximum temperature is projected to increase from 4.8°C to 8.4°C.
There is a projected two-fold increase in the frequency of summer drought by the 2050s.

UKCP09 Weather Generator and its associated Threshold Detector
Pre-launch Training workshops

- 14 workshops held (English regions and Devolved Administrations)
- Users introduced to UKCP09 and probabilistic information.
- Workshop sessions explored:
  - How organisations might use UKCP09.
  - Support and guidance needs.
  - How to prepare to use UKCP09
  - Support needed for the transition from UKCIP02 to UKCP09
  - What the concepts and language used mean in terms of using UKCP09.
- UKCIP learned about delivering support
User engagement and UKCP09 delivery

- User-focused information delivered – decisions made were informed by user-provider discussions
- Delivered climate data for informing decisions rather than just describing the climate
- Guidance and User Interface both tested by Users
- Language and terminology used was understandable to users
- Users bought in - owned the process, and so owned the outputs
- Worked Examples were available at launch
- Providers now have a better understanding of users’ needs and priorities and users understand what can and cannot be delivered and how UKCP09 can and cannot be used
- Users and providers want to maintain engagement
What we would change if we did it again

• Involve users earlier in the process, especially in the decisions on the nature and scope of the information to be provided
• Smaller groups of users focussed on particular sectors or organisational types
• Allow some users to test the real data and user interface before launch
• Leave more time for user-provider interactions!
Remaining challenges

• More effective engagement of users across the ever broadening user community – alternative engagement models?

• Providing the support needed and expected within resource limits

• Encouraging innovation and sharing of experience between users

• Broadening the community of providers engaged

• Enhancing the information available to increase the utility to users, not just to advance climate science

• Meeting the evolving and increasing needs of users – different types of information, multiple sources and available yesterday
Accessing UKCP09

http://ukclimateprojections.defra.gov.uk

Or link from... http://www.ukcip.org.uk.uk

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