

Identifying the needs for climate Services

Ambitions of users for climate information

What would success look like from a user perspective?

- Capability to have an informed discussion (question asked is informed as is the response)
- Basis for taking a defensible decision, effective regulation
- Quick access to credible, reliable and tailored information, including via existing channels, and available in different ways at different temporal and spatial scales (reflecting users' needs, including scales of decisions).
- Information would be clear and easy to understand and use – within existing management framework (not want to change) – also need to recognise limitations of using existing frameworks
- Adaptable to user needs (still scope to adapt decision-making framework)
- Different levels of information, tiered / hierarchical information
- Recognise people are the decision-makers and users
- Timelines of information – relevance to decision timeframes
 - What is available and understanding of time for bespoke/improved information
- Engaging – excited about using it
- Users would be 'less baffled' and find it easier to understand climate information, how the climate changes and how to make decisions that required the use of climate information.
- Greater awareness of users' needs within research community – mechanisms for linking research to users?
- Able to draw on an endorsed evidence base (a 'gold standard' for climate information)
 - Some want credible/known people delivering the service
 - Some form of quality assurance, e.g. ISO 64321!!
- Multiple metrics of success.

- General principles about how to use the data and the parameters around its use.
- Open about and acknowledge the value judgements that come in as you move from the 'raw' and 'pure' scientific data to the information and knowledge required for making a particular decision.
- There would be an organisation that knows what's going on and where to get/how to get things done.
 - a bit like a 'call or help centre' able to answer the easy questions / requests but also able to link up with others for the more complex
- Organisations are taking climate into consideration along with other business risks. Organisations are able to assess and understand their climate risks (public, private, government) – climate change risk assessment for all, including individuals
- Case studies are available based on real life situation – demonstrate and share learning (good and bad practices).
- Set of rules for climate services provision and use – recognise the challenges associated with establishing and maintaining such rules, the current level of agreement, whether there might be winners and losers resulting from this process and thus how to bring in a power dimension. It was perceived that some people 'crave' a rule book but others would not want to be so highly regulated and would prefer example to work with and fit to their own situation.
- Question: How much information to put into public domain versus focusing on public understanding
- Develop 'standard' methodologies (e.g. -> Decision Frameworks for risk assessment). Could offer qualifications for using these (e.g., Prince II)
- Interdisciplinary science is available that meets users' needs
- Recognition that there is no silver bullet nor crystal ball
- Free use/exchange of data within research community
- Need to evaluate – better decision – how to define/value – linked to QA/QC requirements.
- Process of provision/development should be transparent – due diligence/liability/professional responsibility
- Role of a regulator in providing guidance/benchmark

What makes information useable?

- Consistent and comparable information
- Readily available /accessible in time to make a decision (whether publically available or bespoke information)
- Format consistent with different users' needs
- Justifiable cost
- Meets a recognised standard – quality and credibility high
- Matches the decision-making process – appropriate to the problem (useful in that it solves or illuminates the problem at hand)
 - The right spatial scales
 - Relevant / relevance to the decision being made
 - Information about assumptions and limitations
 - Degree of conformity to users' needs (minimum need to adapt)
- User/decision-relevant – recognises that users have different needs (not one product to fit all. Does it contain the information users need (e.g., the distribution of wet and dry days rather than a monthly average)?
- Saliency – does this make sense?
- Legitimacy - does it have an (e.g.) IPCC stamp of approval?
- Trust in the information; in the source and in the process
- Question of how understandable is information on uncertainty and confidence
- Standardised approach to data handling/data use – keeping it simple, e.g. UKCP09 rotated grid versus OS grid?
- User tested in real life situation
- Effective methods of visual communication not just numbers – designed in from start
- Appropriate language - understandable
- Strong engagement user-provider
- Gives users an edge
 - getting info before others

- Able to get something new
- Ownership of climate services (info and knowledge) shared where necessary – right expertise
- Clearly defined information as to how climate information can be used (could be called ‘guidance’)

In addition to information what else is needed to make climate services a success?

- Users are making decisions incorporating climate information – recognition that climate information is useful
- Credibility of climate information and other climate services
- Improve science education
- User dialogue/human element –Legitimacy of the users’ needs and diversity
- Genuine listening to the needs of users and genuine interaction between users and producers. This includes learning from the interaction on both sides about the challenges and what is needed.
- Convert useful outputs from existing knowledge as well as co-creating new knowledge with users involved and collaborating on an equal footing from the design stage onwards.
- User investment in climate services
- Training of users and providers on climate services – good practice
- User motivation – Awareness, experience and market
- Regulation
- Balance between expectations and capability, e.g. integration with professional organisations and networks through existing channels
- Consistency with other constraints, e.g. regulation
- Support and guidance, including worked examples and case studies, as well as guidelines on interpretation of services
- Multi-disciplinary approach should help end product be fit for purpose
- **Funding**
 - The institutional structure must be well funded to allow and support the required engagement (2-way interaction). In addition to a change in ethos they will need extra resource to ensure it happens.
- As an enabler to further research - Freely available data and clear ownership (IP)

- Adapt a principle that public money will only get you so far, e.g. UKCP009 provides data but what you do with it is up to you.
- Enough 'Trained' 'educated' people able to work interdisciplinary and multi-sector space
- Hub where science/decision-maker needs are available
 - Website/tech centre/networks (academics and users)
 - People and timelines
 - Not Big Brother
 - Identify needs and improvements
 - Awareness – need to evaluate and to mine what we know and where to go next
- Fora for engagement
 - Networks
 - Right people/not closed
 - Raise awareness of supply and demand
- Pathways to impacts useful (stakeholder engagement) – support by RCUK
- Co-evaluate the effectiveness of the climate services and the process (engagement) with the users.