

B. Hewitson: Meeting User Needs: limits, ideals, and realities

Delivering information to society that is actionable in decision making is a complex challenge requiring partnership, understanding, and enhanced awareness between researcher and stakeholder. This dual responsibility presents challenges that remain only weakly addressed. Climate modelling is seen in some quarters as the panacea of information needs for informing stakeholder decision making in response to climate change and variability. Commonly, model data is disseminated (often in time and/or space aggregated forms) as information, and the issues of scale limitations, probability and uncertainty, and information from other lines of evidence are often avoided. In such a context the door is opened to problematic over-interpretation and associated (probably negative) consequences. The reasons for this can be simple or complex; ranging from a users limited access to different information sources, the lack of understanding of inherent limitations of a particular information source, or perhaps less explicit factors such as institutional loyalty and perceptual bias. Compounding this situation is the ever increasing deluge of data, coupled with rapid growth of post-processed products, dissemination portals, and perceptions about needs for specific products, such as downscaling.

These issues take place in a wide range of contexts, from developed nation commercial activities through to developing nation subsistence practices. Underlying this are a range of fundamental assumptions; such as that there is predictive skill in the data product, that the information content is clearly represented, that the information content meets the “good enough” test for decision making, or even that the limits to predictability in a system make achieving a useful prediction possible.

The situation presents three key challenges to the research community. First, understanding the information content of disseminated products, and identifying the limits to predictive information for a given context. Second, finding value and information within the vast volume of data, and then transforming this into tailored and relevant knowledge products for user application. Third, how to deliver, communicate (a two way process), and responsibly apply a climate knowledge product in a multi-stressor context of a stakeholders risk framework for decision making. An emerging approach is to draw on multiple information sources of different attributes to build tailored climate messages that are defensible in the understanding of the causative processes, and actionable in being robust to warrant use in a decision framework.

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Dr Bruce Hewitson holds the South Africa Research Chair in Climate Change. He graduated with an MS in 1990 and a PhD in 1991 from the Pennsylvania State University. He is currently director of the Climate System Analysis Group (www.csag.uct.ac.za) at UCT – a research group focusing on the integrated nature of the coupled climate system, including aspects of the social dimension, with a special focus on climate modelling and regional climate change projections. Dr Hewitson was a coordinating lead author on regional climate change projections in both the IPCC Third (2001) and Fourth (2007) Assessment Reports, and continues as a CLA in the forthcoming Fifth Assessment

Report. He participates in a range of international committees and programmes on climate change, and the communication of climate science for adaptation activities, and has a special interest in capacity-building in developing nations. Currently his research is focused on regional climate change projections and downscaling, limits to predictability, and the communication and application of climate information to stakeholders in vulnerability, impacts and adaptation activities.