



The Climate Change Explorer - Facilitating understanding of long-term climate forecasts for screening adaptation strategies and actions

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Adaptation is a social process. It requires us to assess and respond to climatic impacts, to increase adaptive capacity and resilience to multiple stresses, and to formulate plans and policies in ways which reduce the risk of adverse outcomes in the future. A key step in improving the way adaptation strategies are developed is to make use of the best available science to take stock of the extent, condition and climatic trends that are currently experienced and that may be exhibited in the years to come. The purpose of this step is to identify strategies that are robust against a wide variety of future conditions, rather than assuming we can predict future impacts in detail and provide climate proofing measures.

Delivering information to decision makers is often a bottleneck in turning research results into effective decisions and policies. Successful integration and dissemination is dependent on creating flexible and scalable frameworks that can deliver information to a wide audience in ways that will enable these users to evaluate how best it may be applied. Yet in the complex nexus of 'what actions to take, when, how and at what cost', accurate information regarding expected risks posed by climatic change is lacking. Moreover, little attention has been given to the development of pragmatic tools that help decision-makers leverage the best available data when addressing their specific problems.

This paper describes the Climate Change Explorer (CCE), a tool that aims to facilitate the gathering of climatological information and its application to adaptation strategies and actions. The CCE packages data access routines with guidance and customized

analytical and visualization procedures. It is designed to simplify the tasks associated with the extraction, query and analysis of climate information, thereby enabling users to address issues of uncertainty when devising policies and strategies, and also when implementing actions.

The CCE encourages users to focus on the conditions, assumptions and uncertainties of model-based statements about future climate. This enables them to evaluate the relevance of the information, the appropriateness of response options, and to make an informed assessment of risk. It presents an envelope analysis of ensembles which defines a domain of plausible climate change from a wide range of multi-model projections. It is driven by the search for climate spaces relevant to the localities and systems of interest. Exposure and adaptation are context-specific. An interactive exploration of the climate science is therefore critical to the provision of useful information, and appropriate contextualization for decision support.

This delivery of climate information encourages users to become familiar with displaying and querying climate data, from a quick scan of future possibilities through to more detailed, downscaled information to explore the local scale details of regional change. The Climate Change Explorer provides users with an analytical foundation from which to explore the climate variables relevant to their particular adaptation decisions. The approach makes crucial links between understanding vulnerability, monitoring and projecting climate hazards and planning adaptation processes.