COMMUNICATING THE AGRO-MEΤEOROLOGICAL IMPLICATIONS OF CLIMATE CHANGE SCENARIOS TO LAND MANAGEMENT STAKEHOLDERS

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INTRODUCTION:
A shared understanding of specific climate change (CC) challenges on a particular sector is a vital precursor to effective research-based support for adaptation in policy and practice. A social-learning approach to reduce the comprehension gap between research, policy and practice communities is presented. A cooperative assessment was taken with land management stakeholders of preferences for agro-meteorological metrics and co-developing of a framework of climate change indicators. Agro-meteorological metrics are important indicators of conditions that influence farm scale decision making. Metrics derived from projected future climates provide an opportunity to characterise the impacts of CC on agricultural practices.

METHODOLOGY:
• Generate meteorological summaries and candidate agro-metrics with both observed weather data and downscaled Regional Climate model data (A2 2070-2100 scenario).
• Elicit preferences for agro-metrics and their parameterisation with land-management stakeholders during group interviews and workshops.
• Refine agrometrics and re-parameterise and present for further stakeholder analysis.
• Use the agro-metrics as mediums for awareness raising and stimulating deliberation on possible adaptation strategies.
• Evaluate the benefits and limitations of using social learning approaches for communicating complex, contested issues with significant and irreducible uncertainty.

RESULTS:
• Meteorological summaries could be effective in highlighting the nature of change BUT.
• Agro-metrics were more effective in encouraging stakeholders to consider possible impacts on their land use systems and stimulate thinking on how they might adapt.
• The credibly of the indicators and the case study data was enhanced by interactive processes of explanation where the basis of the indicators can be debated and if necessary customised.
• The specific metrics of greatest interest were those that related to the distribution of growing season and access days, the potential for increased soil moisture deficits, reductions in the period of frost (with implications for pests and disease) and the potential for plant heat stress.

CONCLUSIONS:
• Land management stakeholders were open to the use of more complex model-based indicators.
• The credibility of the agro-metrics depended partly on the climate models’ ability to represent historical periods but mainly on the inclusive nature of the processes of interaction between stakeholders and researchers.
• The authors thus recommend including a strong social learning based component within any climate change research communication strategy.