Adapted future landscapes – from aspiration to implementation.

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Project description:

This project will work with two natural resource management (NRM) regions to embed a planning and implementation process that is climate change informed and built on the best evidence of regional natural resource condition and community well being.

Helping regions in Australia plan for and implement changes in the way they use land for food and conservation in the face of changing climate, markets and social requirements is important. Developing effective plans and implementing changes that assist regional communities and improve the condition of soil, water, plants and animals requires good information and innovative analysis.

Researchers have developed ways of bringing all the information about a region together and then making projections about how to change what is done where on the land that will help people adapt land use into the future. Previous work has shown that with careful planning it is possible to adapt well to changed climate and to develop land use and economic buffers against the uncertainties of markets and costs in the future. To achieve this adaptation and buffering will require changes and hence policy incentives to guide and encourage what needs to be done.

This new project will work with two natural resource management regions to develop an experimental implementation process that uses future land use projections and allows assessment of possible policy and guidance incentives. The project team will use recent understanding of organisational change processes to develop a high level of awareness of a regional NRM vision. With this guiding ideal the options for possible future land uses that give the region the best chance of adapting will be identified using computer based outputs.

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Maps of current resource condition and projections of possible future condition are generated.

A new software “tool” is to be developed that will allow regional NRM staff to pose “what if” questions using the regional information and the climate change scenarios. Maps will illustrate how the landscape will look and how it will function. Regional decision makers will be more informed about the effects and consequences resulting from planned implementation. They can then more reliably assess which options will be best for their region given the level of bio-physical, social and economic risk they feel comfortable with.

If this experimental process is successful then its application to other NRM regions in Australia is relatively straightforward. This methodology provides a systematic way of gathering and presenting the information of what makes up an NRM region, what the condition of the resources are and what options are possible to guide successful adaptation. It is complementary to and builds on much of the data gathering that is being done.

With a greater emphasis on processes that develop ownership of the regional NRM vision (“what do we want our landscape to look like”) there is a much greater chance that regions will have more successful program implementation. The process leads to better evidence based decision making. It also provides a way of tracking more and less successful actions that will assist learning and responsive adaptive management. Regional areas and communities will be more “climate change ready” and have planning and implementation that is adaptive.

Potential distribution of land use in the Murray Darling Basin NRM Region that achieves regional NRM targets for habitat protection, minimum soil erosion and maintenance of agricultural productivity.

(a) This is the distribution with a “Most Cost Effective” policy assuming current climate conditions
(b) This is the distribution with a “Most Cost Effective” policy assuming a medium warming and drying climate in the future.