Integrating NRM implications into a production-based SCRM system

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Location: Toowoomba, Queensland

Principal investigator

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The need

Building farmers' capacity for sustainable management of natural resources is different to helping farmers adopt new innovations for greater productivity. This is largely because (i) market forces do not drive such change since adoption does not result in competitive advantage, (ii) the results of management change are not readily visible, and (iii) adoption requires complex knowledge transformations. Recent experience of engaging farmer groups on natural resource management (NRM) matters demonstrated that scientists who are engaged with farmers on production matters are well positioned to extend such engagement into NRM issues.

Yield Prophet® provides a web-enabled user interface to the cropping system simulator APSIM. Yield Prophet is currently delivering seasonal climate risk management (SCRM) tools in the context of farm management decisions to a rapidly expanding national network of advisers and grower groups (van Rees et al.; these proceedings). Subscribers enter their actual management information and generate reports that update the current status of the crop, soil moisture and soil nitrate; and provide forecasts of crop yield potential in response to alternative management scenarios.

How this project fits with MCV objectives

This project addresses the MCV objective of increasing adoption of climate risk management in the natural resource management sector.

Project objectives

1. Associate information relevant to NRM (e.g. deep drainage, runoff and soil erosion risks) with the management scenarios outlined above by developing tools for predicting NRM implications of production-based crop management decisions and integrating this capability into the Yield Prophet system <www.yieldprophet.com.au>
2. Build on the existing network of researchers, advisers and grower groups
3. Develop an action research program to research methods for integrating information from NRM applications of SCRM into the context of farmers' land management operations
4. Benchmark and evaluate impacts of this project on the knowledge, aspirations, skills, and practices of growers, advisers and SCRM researchers in the applications of SCRM in NRM management

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Methods

We propose to provide farmers and their advisers with opportunities to learn about the NRM implications of their production decisions, and to participate in discussions and in virtual experimentation that will allow them to learn and to draw their own conclusions. An action research program will investigate the best way to achieve this integration in the context of farmers' land management operations. We will engage these farmers in group discussions on NRM issues and evaluate the impacts of these activities on farmers' NRM knowledge.

Experience suggests that it is unlikely that farmers will learn about managing NRM issues without participating in learning activities in suitable social settings—with their peers and credible scientific support. Similarly, farmers are more receptive to learning about NRM issues when these are closely coupled with their production issues. We therefore propose to link this project to other MCV projects that are aiming to increase adoption of SCRM, and negotiate links with the relevant National Heritage Trust Catchment Management Authorities to deliver a participatory action research program to a network of landholders, farmer groups and advisers.

Desired outcomes

- A national network of farmers, consultants and researchers engaged in producing 'what-if' tactical crop management scenarios, and thinking about the NRM consequences of these scenarios
- An improved understanding of what it takes to get farmers to consider NRM implications at the time of making production management decisions
- Farmers identifying win-win production-NRM strategies and modifying their production decisions in order to improve NRM outcomes

Achievements to date

The project is in its infancy.

What is left to do?

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MCV is a collaborative program between the Grains, Rural Industries and Sugar Research and Development Corporations; the Australian Government Natural Heritage Trust and Department of Agriculture, Fisheries and Forestry; Dairy Australia; Meat & Livestock Australia; and Land & Water Australia. The National Farmers Federation and Australian Wool Innovation Limited are associate partners.

For more information on MCV, visit http://www.managingclimate.gov.au
Land & Water Australia is the managing agent for MCV.
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