

Communicating Climate Change

Module 16

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Managing risk in a changing climate: making tactical decisions in the Wimmera-Mallee

Farming under increased climate variability and climate change continues to challenge Australia's farmers. While tactical decisions are often presented in a framework of best management practice, this framework often only looks at the current situation. The tactical decisions that farmers face are influenced by both the immediacy of the current situation, the lessons learnt from previous decisions, and factors such as family, debt, health and issues outside the best management practice framework.

Vision: Your farm's purpose and your values

Decisions in any business should align with the vision for that business.

Strategic decisions are shaped by your vision for the future. The vision for the farm and the individual's aspirations are made up of:

- the **purpose** for running the business: **what you are planning to get out of the business/family farm**
- the **values** used to shape decisions: **why you do what you do**

A vision is most useful when it is created and shared with others involved in the business.

An action plan is an important component of having a vision that can be realised.

Action planning helps you to:

- consider the options
- identify the risks
- identify the costs
- decide what steps you need to take
- focus ideas

The best action plans are documented with a timetable.

A cooperative venture between

Managing risk and change is complex

Managing risk is about finding the balance between benefit and detriment. In financial terms, this means profit and loss. In marketing terms, it is the balance between security of supply and price paid.

In a changing climate, farmers need to improve their ability to balance risk across an increasing number of issues. Decision-support tools, such as AgriGater, PYCAL and Yield Prophet®, do not provide the answers but they do help you to analyse the balance of risk for specific decisions. For most farmers, managing climate change is about managing seasonal climate variability to maximise profits in good years and minimise losses in low-rainfall years.

Grain farming in the Wimmera-Mallee involves committing dollars from January through to July. Risk is high as returns are unknown until harvest. However, grain farming is a profitable business.

Major variable inputs for grain farming are fertiliser, diesel and herbicide. Budgeting and buying decisions on inputs are complex and farmers are often encouraged to buy or order nine months in advance.

The mix of cropping versus livestock and whether to crop a particular paddock are also important tactical decisions.

Spreading the risk, maintaining flexibility and acting when opportunities arise is the framework most farmers use when making decisions about inputs. But variable climatic conditions and commodity markets can make these decisions very complex.

Profit drivers for tactical decisions

A comparison of historical wheat yields (Figure 1) versus wheat yields in a high emission scenario over the next 60 years (Figure 2) suggests that median yield will reduce from 1.6 tonnes/hectare to about 1.2 tonnes/hectare, or a 25% reduction. This reduction is manageable when we consider the ability of new varieties and improved agronomy to cover the difference (Anwar et al. 2006).

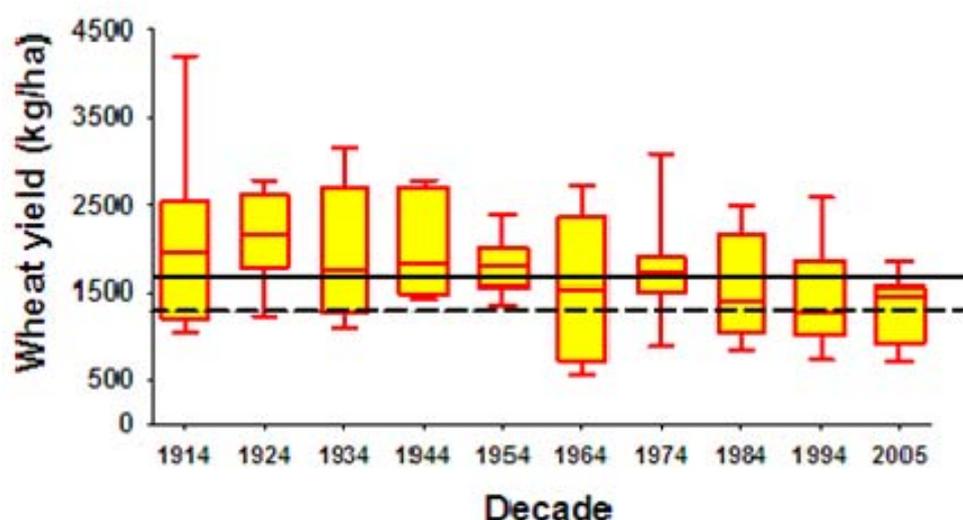


Figure 1: Simulated historical wheat yields at Birchip, 1914–2005 (Anwar et al. 2006)

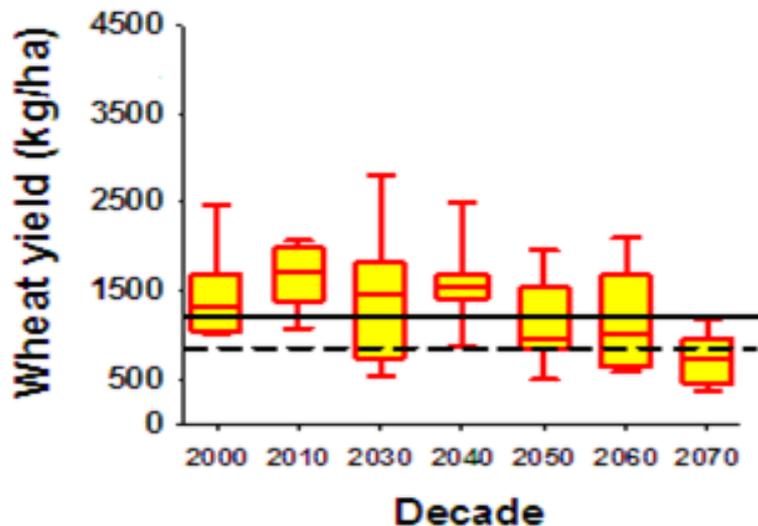


Figure 2: Projected wheat yields at Birchip, 2000–2070, with elevated levels of CO₂ (Anwar et al. 2006)

There are two equally important drivers to profitable farming in the Wimmera-Mallee, when looking at variable costs and gross margin. These drivers will still be the major focus in a climate change scenario:

- Only buy inputs that can be effectively utilised by the crop. For instance, there is no point putting urea on a crop if the crop already has plenty of nitrogen available.
- Grow crops to maximise yields and apply the appropriate level of inputs. For instance, if targeting a 3-tonnes/hectare wheat crop, make sure that the crop has enough nitrogen available to reach that yield.

Farmers who think about inputs per tonne of crop yield rather than per hectare are better at managing their total expenditure on inputs.

Decision-support tools

There are a number of decision-support tools that can help you make tactical decisions. These include:

- the Bureau of Meteorology's Predictive Ocean Atmosphere Model for Australia (POAMA)
- PYCAL (Potential Yield Calculator)
- Yield Prophet®
- seasonal climate outlooks
- short-term weather outlooks
- soil moisture and nutrient budgets

Each of these tools provides only one piece of the jigsaw. Most pieces of the jigsaw are determined by the more strategic area of decision making—the vision for the business. This includes how profitable the farm is, the level of debt, how the family is going, family stress levels, health, and succession plans.

Strategic decisions greatly influence tactical decision making, especially when weighing up risks and rewards.

Knowing if the business is on track

The key indicators of whether the family farm/business is on track are:

- return on capital (equity)
- growth in equity (wealth)
- net cash flow (liquidity)

They show how the farm is going in achieving its purpose.

Net cash flow is the key reflector of tactical decisions.

Finding indicators that measure values is difficult because they are internal and hard to measure. They include satisfaction, happiness and quality of life.

AgriGater

AgriGater is a computer-based decision-support aid. It can help you develop an annual budget plan for the family farm/business and then provide indicators of how the business will be at the end of the year. The indicators include monthly cash flow, return on capital, growth in equity, and both gross and net margins. It is designed for use by grain farmers, mixed wheat/sheep/beef farmers and horticulture. It is available free from the Department of Primary Industries, Victoria.

Sources

Anwar, M, O'Leary, G, McNeil, D, Hossain, H and Nelson, R 2006, 'Climate change impact on field crops and adaptation options in Southeastern Australia', 13th Australian Agronomy conference, Perth, September 2006

Further information

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