

Australian Farmers Managing Climate Change

IMPACTS AND ADAPTATIONS



The variability of the Australian climate has always been a challenge for Australian agriculture.

While Australian farmers have managed this recent drought with remarkable tenacity, it has highlighted the vulnerability of agriculture to climate variability - vulnerabilities that will be compounded by long-term changes in the climate. (IPCC 2007) ¹

In the face of these vulnerabilities and risks from climate, many farmers are testing and using different farming practices to build the resilience of their farms, so their properties are better able to withstand drought and other extreme events.

In some wheat-growing areas in Victoria, for example, farmers have been keeping stubble and ground cover on their paddocks, and have successfully reduced soil erosion.

1 Australian agriculture already faces the most variable climate of any of the world's major agricultural production areas ²

2 Climate change will probably continue throughout the 21st century, and possibly accelerate ³



How will Climate Change Affect Australian Agriculture?

Climate change is predicted to:

- ▶ **Increase the variability of Australia's already variable climate – temperature, wind and rainfall, and in turn, evaporation, frost frequency and severity, soil moisture and water availability.**
- ▶ **Increase the frequency of extreme events – droughts, floods, storms and cyclones.**
- ▶ **In the longer-term, shift the locations of some agricultural production systems and activities.**

Examples of the Impact

- ▶ By 2030 we can expect at least a 1 degree increase in temperature and reduced rainfall over southern Australia – a double impact on rain fed and irrigated agriculture.
- ▶ Fewer frosts may change the opportunities to grow crops and varieties, especially for our increasingly high-value horticulture industry.
- ▶ Reduced rainfall may shift the eastern margins of the WA wheat belt.

Australian agriculture needs innovation through continued research, development and adoption to meet these challenges – delivering better seasonal forecasting, decision tools for cropping and grazing, improved irrigation scheduling and new plant varieties.



More Information

Please visit www.managingclimate.gov.au:

- ▶ to subscribe to our free newsletter, **CLIMAG** OR for more information about the MCV program.

Managing the Risks

A risk management approach allows farmers and resource managers to plan for the risks and to develop plans to prepare for and manage the risks and opportunities presented by a changing climate.

In the coming years, our farmers will increasingly have to make business decisions that take climate change issues into consideration.”

(The Hon Peter McGauran MP, Minister for Agriculture, Fisheries and Forestry. 19 March 2007.

The role of research and development is to provide farmers with information and tools to be able to better manage risk.

A myriad of strategies can be used to manage the climate risk. A particular farm, region, commodity, enterprise or industry needs its own tailor-made responses. Some examples:

- ▶ Include climate information in decision making, such as using climate forecasting tools to model and predict yields;
- ▶ Build a resilient system that expects and can withstand drought;
- ▶ Improve water use efficiency;
- ▶ Make the most of any rainfall – being able to respond to actual weather conditions;
- ▶ Consider biotechnology possibilities – the ‘frost gene’ technology for example; and
- ▶ Plant different varieties/crops.



Improving Climate Forecasts for Agriculture

The Managing Climate Variability Program’s top priority is to provide more accurate and reliable climate information, forecasts and tools to enable farmers and natural resource managers to reduce their exposure to risk from climate.

The Managing Climate Variability Program has contributed to the development of seasonal climate forecasting tools that assist managers to make decisions which maximise climate opportunities and reduce costs in poor seasons - Yield Prophet, WhopperCropper, Australian Rainman and AussieGRASS.



- 1 Intergovernmental Panel on Climate Change (IPCC). 2007. Climate Change 2007: The Physical Science Basis. Fourth Assessment Report (AR4).
- 2 Clark et al. 2006. Science for Decisions Makers. Climate Change Adaptation in Agriculture. Bureau of Rural Sciences
- 3 Clark et al. 2006. Science for Decisions Makers. Climate Change Adaptation in Agriculture. Bureau of Rural Sciences.