



A National Climate Change Research Strategy for Primary Industries

Summary Fact Sheet



Changes to Australia's already variable climate will present great challenges and opportunities for our primary industries.

Primary industries need to understand the implications of climate change and greenhouse gas management, to minimise risk and maximise opportunities.

The National Climate Change Research Strategy for Primary Industries outlines opportunities for collaborative research to better identify and address the likely impacts of climate change on primary industries, and help build their capacity to adapt.



Research Priorities

Based on intensive consultation and analysis, the strategy identifies six key areas for collaborative research, development and extension across industry sectors and governments:

- 1 Understanding Future Climates
- 2 Managing Emissions
- 3 Preparing Industries
- 4 Accessing Information
- 5 Facilitating Change
- 6 Linking Decision Makers

Climate Change and Primary Industries

The changes in climate over the next few decades will be substantial, but the effects will vary widely across the country. Some regions are predicted to experience average warming of up to 1.8°C by 2030; in other areas average rainfall is predicted to decrease as much as 40 per cent by 2070 (compared to 1990).

Rainfall patterns, temperatures, the incidence of frosts and extreme weather events, availability of soil moisture, ocean temperatures, ocean chemistry and sea levels are all expected to be affected by climate change.

Government policies and regulations, prices, consumer demands and international markets will also change.



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A joint initiative of the Rural Research and Development Corporations; Federal, State and Territory Governments; and the CSIRO, managed by Land & Water Australia

An Industry-driven Strategy



Australia's primary industries have a strong desire to respond to climate change issues, supported by good-quality research, clear communication and the best available information.

The development of the National Climate Change Research Strategy for Primary Industries has involved unprecedented levels of collaboration among Australia's rural Research and Development Corporations, primary industry agencies, Federal, state and territory governments and the CSIRO.

Through intensive consultation and analysis, the strategy identifies the major needs for national collaborative research, the existing areas of research activity, and the major gaps in our knowledge. From this, the National Climate Change Research Strategy for Primary Industries has set a course for efficient, co-ordinated and collaborative research and its adoption.

The strategy is designed to ensure Australia's primary industries – agriculture, fisheries and forestry – are equipped to make the best possible decisions to manage for climate change, so that they remain a productive, sustainable and profitable part of the Australian economy.

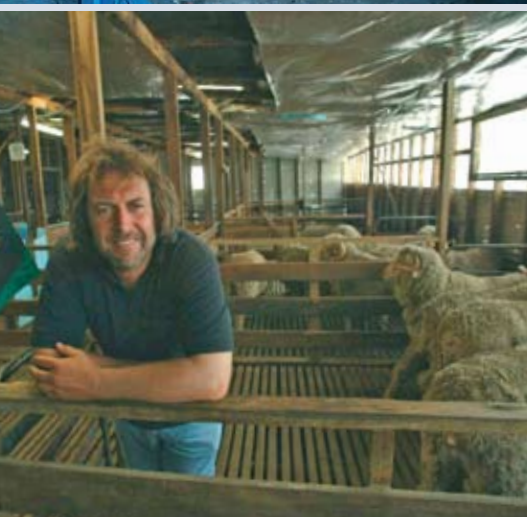
Adaptation and Mitigation

Adaptation (changing practices) and mitigation (reducing emissions) are two key ways of reducing climate change risk for primary industries.

Adaptation focuses on helping primary producers adapt their management and production systems to account for changes in climate, including changes to business systems or market demands. **Examples** of practical adaptation at an enterprise scale might include improved water-use-efficiency, selecting more drought-resilient plants and/or livestock, diversifying activities to spread risk and changing the timing and type of production.

Mitigation focuses on reducing emissions, improving production efficiencies, and identifying opportunities for offsets or sequestration. It also aims to quantify net greenhouse gas emissions from primary industries at the specific industry and enterprise scales. **Examples** of practical mitigation at an enterprise scale might include increasing the efficiency of nitrogenous fertiliser use, reducing fuel consumption, upgrading to energy-efficient equipment and increasing feed-use-efficiency in ruminant livestock.

The Australian Greenhouse Office estimates that primary industries account for **23 per cent of the total national emissions** (second only to the energy, gas and water sector).

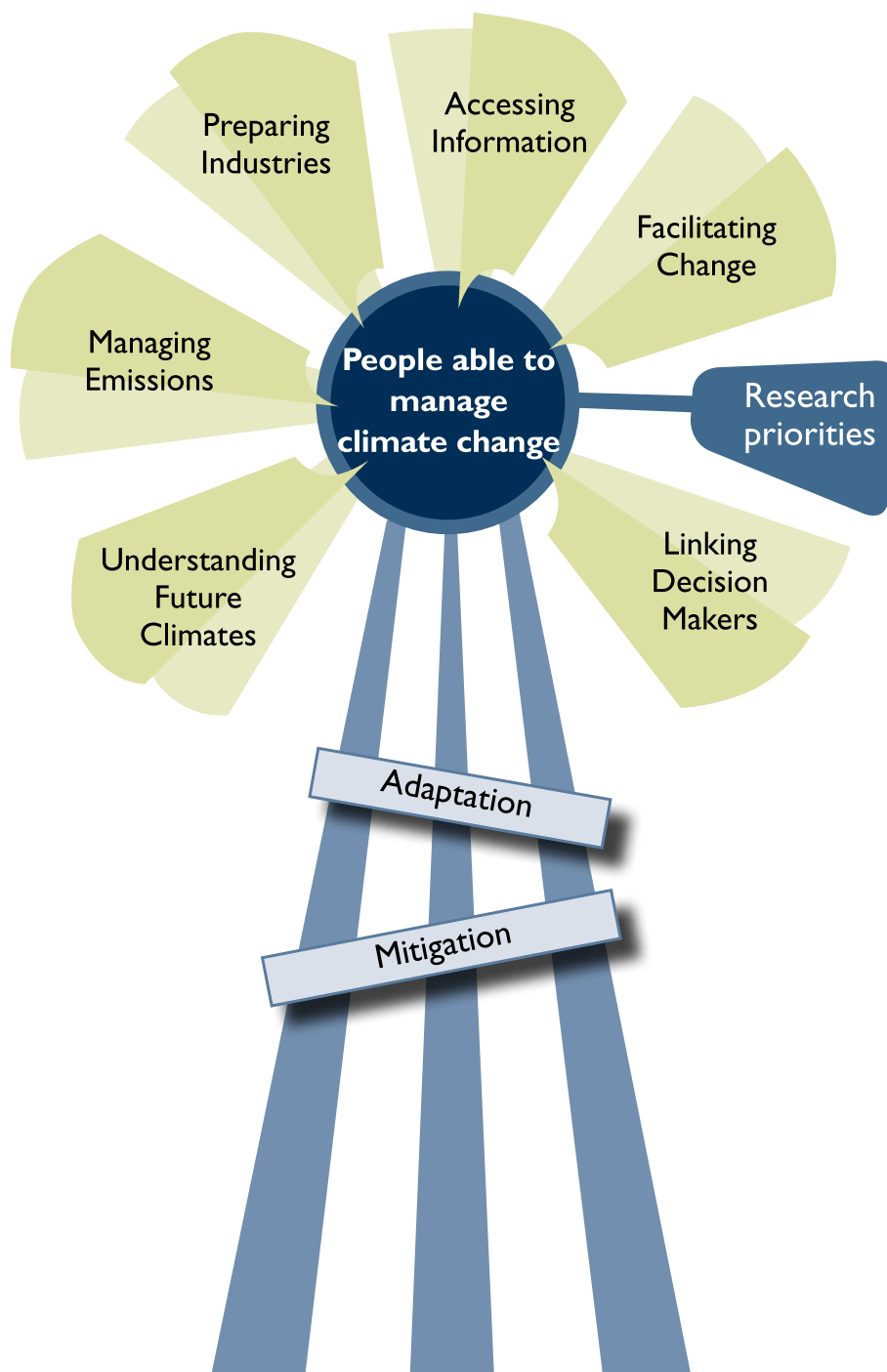


Adaptation and Mitigation

The National Climate Change Research Strategy for Primary Industries has two main goals related to adaptation and mitigation:

- 1 **ADAPTATION** – Primary industries are able to make the best possible decisions to manage change due to climate change.
- 2 **MITIGATION** – Primary industries are able to manage greenhouse gases in response to policy and market expectations.

The Six Collaborative Research Priorities for Primary Industries



More about the Research Priorities

Through stakeholder consultation, research and analysis, six clear priorities for research, development and extension have emerged:

Understanding Future Climates, (projected climate and seasonal climate)

Better information is needed to help understand how climate change will influence the biophysical environment and the capacity of Australia's primary industries. This information will underpin the ability of individuals, regions and industries to identify and manage production risks, as well as informing further research priorities.

Collaboration is needed to agree on the information primary producers and industries require from climate projections. Consistency across industries is needed in the way information is treated and communicated, including the development of different scenarios for national and regional climate change. Providing accessible, easy-to-understand climate variability projections at seasonal timescales is a high priority to assist with risk management strategies at an enterprise level.

Managing Emissions

Research is required to understand and manage emissions (including life-cycle assessments) in response to market and policy demands. Consistent methods of calculating and reporting on emissions are needed to allow information to be shared and compared across different primary industries. This will aid good policy development, and underpin research into reducing emissions, developing alternative management options and opportunities for offsets and carbon sequestration.

Preparing Industries – Adaptation

Primary producers and authorities responsible for natural resources need to understand climate change and its implications on production systems and regions. Agreed regional climate change projections are necessary for identifying priority issues, communicating the risks and developing production system options. A greater understanding of the implications of policy, program and market responses will also be important in supporting decision-making and adaptation to climate change.

Accessing Information

Access to clear, relevant and factual information is needed to help primary producers and industries understand the implications of climate change and emissions management for their production systems. Good quality information that is nationally consistent and regionally relevant will help producers make decisions about the most effective changes to production and avoid mal-adaptations. Improving access to credible information and research is a priority, with strong support for the creation of internet-based information hubs.

Facilitating Change

The rate of change in primary production systems is expected to accelerate as producers adapt to climate change and manage their emissions. The capacity to identify and assess vulnerabilities, risks and opportunities, and access to decision-making tools will help to promote efficient change. Social research will help identify the drivers that motivate producers to make changes, adapt their management systems and take up new technologies.

Linking Decision-makers

It is essential that dialogue and collaboration increase between researchers, policymakers, primary producers and other agribusiness stakeholders (including industry groups) so that decisions address the challenges and opportunities of climate change within a practical industry context.

The development of an emissions trading scheme has been identified as a key area for collaborative research between scientists, policymakers and producers to provide practical outcomes and opportunities for primary producers and governments.

New Information and Publications

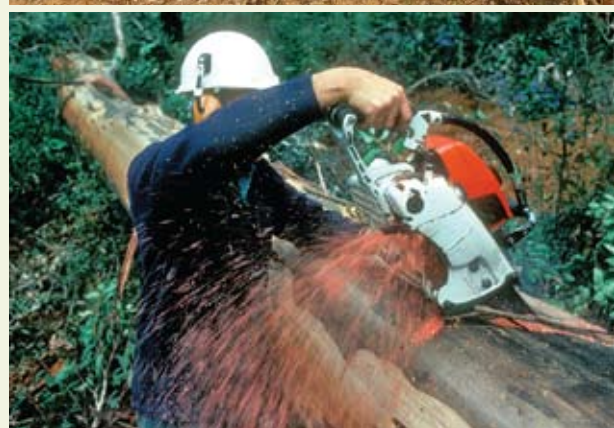
Providing consistent, credible and easy-to-understand information is a key component of the strategy. Some of the latest information on existing research across Australia; climate change impacts and adaptation in the primary industries; and emissions trading and primary industries is contained in the strategy's appendices.

The National Climate Change Research Strategy for Primary Industries is being released along with six appendices which can be downloaded from the Land & Water Australia website at

www.lwa.gov.au/ccrspi

- ★ **Appendix A:** Part 1: State of Knowledge and Identification of Research Gaps
- **Appendix A:** Part 2: List of Research Projects on Primary Industries and Climate Change
- **Appendix B:** Summary of the CCRSPI Reference Group Discussions
- **Appendix C:** Key Findings from Primary Industry Consultations
- **Appendix D:** Key Findings from Public Consultations
- **Appendix E:** An Overview of Climate Change Adaptation in Australian Primary Industries – Impacts, Options and Priorities by the CSIRO Climate Adaptation Flagship.
- **Appendix F:** Knowledge Gaps and Opportunities for Research to Inform and Position Australian Primary Industries to Respond to a Future National Greenhouse Emissions Trading Scheme by the Australian Farm Institute.

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Next Steps

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The collaboration is continuing strongly. Through 2008-2009 a number of government, research and industry stakeholders will use the strategy as a foundation for developing more industry-specific and cross-sector research programs. An implementation plan for the next 10-20 years is also underway.

The national research strategy is the first step of several which will be required so that good science will underpin the long-term economic, environmental and social sustainability of our primary industries.

Working Collaboratively

Working collaboratively, researchers, primary industries and policymakers can maximise research investment. Information systems, tools and management approaches can be shared across industries. A collaborative approach is expected to address some of the shared industry issues, including duplication of research, particularly at a regional level; difficulty accessing completed research or identifying relevant information where it is part of a larger research effort.

Partners in the Strategy

Funding and support for developing the strategy has been provided by all fifteen rural Research and Development Corporations (RDCs), the Commonwealth Government, State and Territory Governments and the CSIRO.

- Australian Egg Corporation
- Australian Pork Ltd
- Australian Wool Innovation Ltd
- Cotton RDC, Dairy Australia
- Fisheries RDC
- Forest and Wood Products Australia
- Grains RDC
- Grape and Wine RDC
- Horticulture Australia Ltd
- Land & Water Australia
- LiveCorp
- Meat and Livestock Australia
- Rural Industries RDC and Sugar RDC
- The Australian Government Department of Agriculture, Fisheries and Forestry
- State and Territory Governments, and
- The CSIRO.

Land & Water Australia has been the project manager for the strategy.

For further information

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