

Victorian Climate Change Adaptation Program



Research Theme



Farming Systems Scenario Development

Agriculture functions as a complex, highly interconnected industry. It has many players in production, processing, transport, regulation and marketing. Agriculture supports regional communities, sells into a global market and provides a share of national export income. Climate, trade agreements, consumer preferences, input costs, currency values and government policies are evolving rapidly. How do we intelligently plan for the future in an environment which has considerable uncertainty?

Given these challenges, the Department of Primary Industries (DPI) has engaged in the Victorian Climate Change Adaptation Program (VCCAP) to provide guidance to government policy and regional decision-makers on effective responses to change in climate and other drivers.

The DPI VCCAP project is focussing research on southwest (SW) Victoria, as a pilot region. The project is progressing under a number of technical and social themes, one of which is scenario planning.

Scenarios aim to identify the world as it might be in the future. They are not predictions and provide plausible accounts of how issues might unfold.

Aims

The scenario theme will integrate the formal knowledge provided by other themes (biophysical and economic models etc) with the experience of on-ground stakeholders in policy, regional industries and agencies to:

- Develop 3-4 different and challenging scenarios of how the future for agriculture and communities in SW Victoria might unfold to 2050 and beyond,

- Explore the likely impacts of these scenarios for business, communities and the environment, and identify the likely adaptive response strategies of regional stakeholders,
- Use this information to provide guidance to policy groups (both State and regional), regional industries, agencies and communities on – What actions can they take in order to help Victorian agriculture and regional communities respond adaptively to an uncertain future?

Research plan

Stage 1 Scenario formulation. Scenarios are being developed around drivers of change for agriculture where we have little or no control. Those drivers include:

- Projections of climate variability and change. This uses the Special Report on Emissions Scenarios (SRES) of the Intergovernmental Panel on Climate Change (IPCC), with climate modelling provided by the Commonwealth Scientific and Industrial Research Organisation (CSIRO). The climate projections considered are the A1FI (high growth, high carbon), A2 (divided world) and B1 (green energy) projections,
- Non-climate drivers such as the global economy, markets, trade barriers and consumer preferences, declining terms of trade for primary producers, energy requirements, Government policy including the Carbon Pollution Reduction Scheme, dramatic change such as war, disease outbreaks and developments in science and technology.

In addition to guidance from the literature, relevant drivers of change for agriculture from regional stakeholders are also included. Plausible options for how those drivers might unfold in the future are being built into 3-4 final scenarios. When completed, the scenarios and their underlying rationale will be widely circulated to ensure their plausibility and internal consistency.

Stage 2 Scenario analysis. Formal knowledge will include biophysical modelling of climate impacts on grains and grasses, modelling of land-use change and regional economic modelling. The scenario theme will facilitate complementary informal assessment through a Technical Working Group (TWG). Their task will be to use their local and specialist knowledge to integrate the formal analyses with their understanding of business and community systems to provide a holistic assessment of:

- The likely impacts on the regional industry, economy, communities and environment in the SW produced by these scenarios,
- The likely adaptive responses of regional industries, agencies and the community to the scenarios themselves, and to the repositioning of agriculture in other parts of Australia and the world.

The TWG will be assisted by visual and textual representations of the scenarios developed by the visualisation theme.

Stage 3 Policy and adaptive response options. The information from stages 1 and 2 will be used to provide guidance to policy groups (both State and regional), regional industries, agencies and communities on – What policies and actions are needed in order to help Victorian agriculture and communities respond adaptively to the above futures.

Progress - achievements to date

- An extensive literature review on the key drivers for climate and non-climate change in agriculture at the national and international level has been undertaken,
- Engagement with DPI policy staff to define their key issues,
- A group of diverse stakeholders from major agricultural industries and agencies in the SW has been established,
- The stakeholder Forum has been used to define aspirations, values, challenges and opportunities for

agriculture and the region, key regional drivers of change, and the uncertainty in global / regional drivers,

- The embryonic storylines have been used to develop 3 scenarios that have been checked by Forum members for internal consistency.

Next Steps

The next step is to establish the TWG and to commence its operation in Stage 2 and 3. Outputs will be regularly provided to State policy groups, regional agencies and industry associations, through the VCCAP newsletter and briefings.



Scenario workshop participants at Dunkeld, SW Victoria

Futher Information

DPI VCCAP website: www.dpi.vic.gov.au/vro/vccap

Leon Soste, DPI Tatura

Future Farming Systems Research Division

Phone: (61) 3 5833 2400

Email: Leon.Soste@dpi.vi.gov.au

If you would like to receive this information/publication in an accessible format (such as large print or audio) please call the Customer Service Centre on 136 186; TTY: 1800 122 969, or email customer.service@dpi.vic.gov.au.

Published by: Department of Primary Industries
1 Spring Street, Melbourne, Victoria, Australia. July 2009

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ISBN 978-1-74217-073-2 (print)

ISBN 978-1-74217-074-9 (PDF)

Authorised by: Victorian Government 1 Spring Street,
Melbourne, Victoria 3000 Australia

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