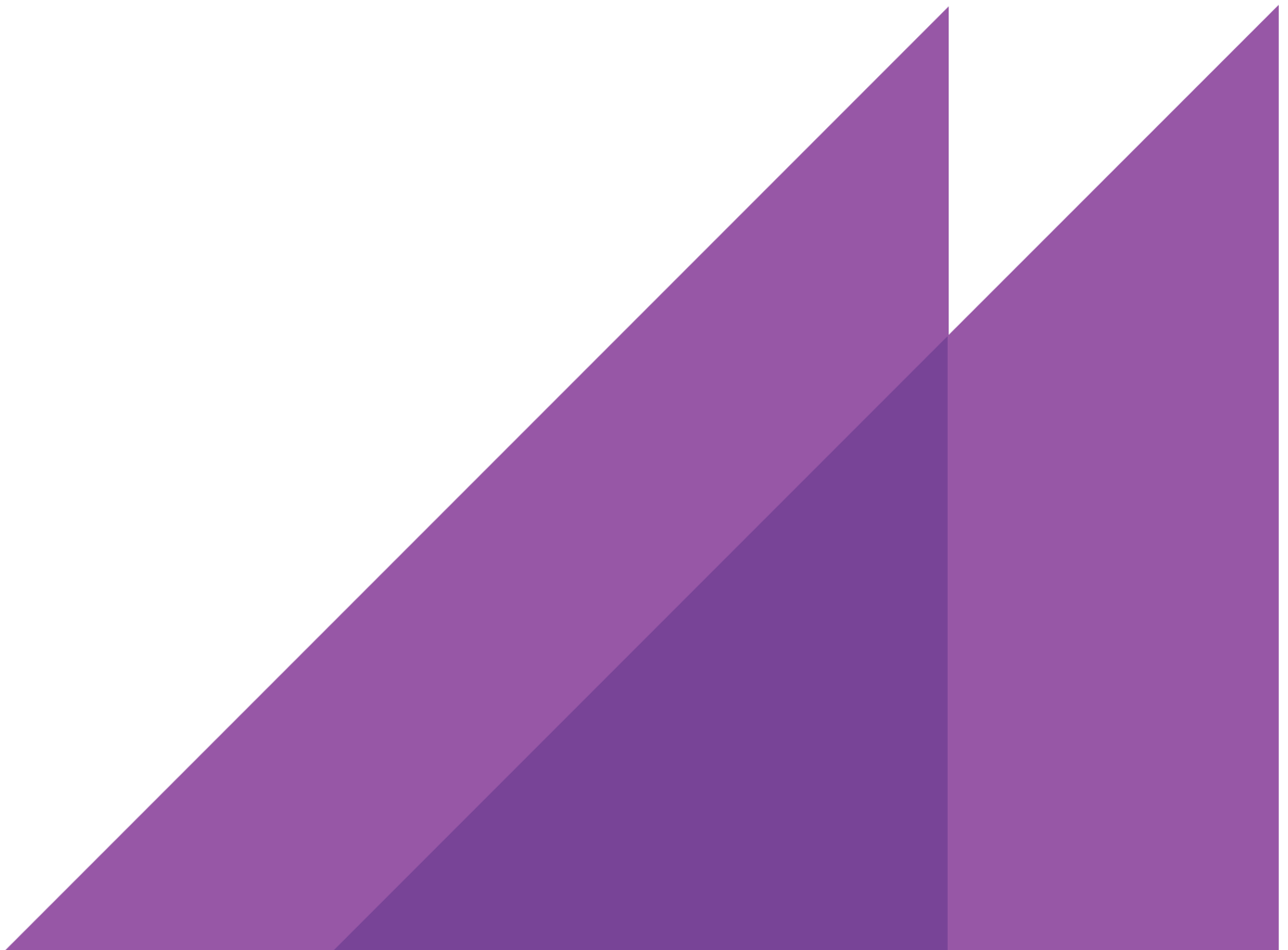


REPORT TO
THE DEPARTMENT OF JOBS, PRECINCTS AND REGIONS
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SUPPORTING AGRICULTURE TO ADAPT TO CLIMATE CHANGE



STREAM 2: OPPORTUNITIES AND
RISKS
EXECUTIVE SUMMARY





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EXECUTIVE SUMMARY

In April 2018, the Agriculture Ministers' Forum (AGMIN) agreed on the importance of ongoing cooperation between governments to support adaptation to climate change and managing emissions in agriculture. Ministers agreed to develop proposed actions and a work program to inform the development of a coordinated national approach to adaptation to climate change and managing emissions in the agricultural sector.

Ministers requested the preparation of advice providing an overview of climate scenarios and potential impacts; a stocktake of the current work being undertaken by jurisdictions on adaptation and managing emissions in agriculture; and the identification of risks and opportunities of climate change in agriculture. This work will provide input to jurisdictions in considering actions and a work program to support a coordinated national approach.

Stream 1 provided an overview of potential climate change scenarios and impacts; a description of current work on managing emissions; and a stocktake of approaches to adaptation across jurisdictions.

This paper is the second step in the process and provides an analysis of the opportunities and risks for agricultural industries arising from climate change. Subsequent work will propose options for actions (in response to the opportunities and risks) which could be considered as part of a work program for a coordinated national approach to support the agricultural sector adapt to climate change.

Consultation

A stakeholder consultation process was undertaken to ensure stakeholders' views on opportunities and risks were captured. Stakeholders were identified in collaboration with all jurisdictions. Stakeholder input was sought through workshops, interviews and written input. The considerable effort of stakeholders to provide input into the process was much appreciated, particularly in view of the tight timeframes for the project and the period over which consultations were held. The views gathered through the consultation process are a primary input into the analysis of the opportunities and risks.

Methodology

A wide array of cross-cutting issues were identified from engagement with stakeholders and jurisdictions. All are important and warrant consideration in the analysis of opportunities and risks. The first step of the analysis involved using a PESTLE framework as an initial classification for each issue from the consultations.¹

¹ PESTLE stands for political, economic, social, technological, legal and environmental.

Opportunities and Risks

Table ES 1 shows the outcomes of the qualitative assessment of issues, grouping them into high level themes, incorporating both opportunity and risks elements into each. The assessment process considered:

- the extent to which the opportunity or risk was relevant and applied across geographic regions; and
- the extent to which the opportunity or risk was relevant and applied across a range of agricultural commodities.

Some themes have both significant opportunities and risks, while others are predominantly one or the other.

TABLE ES 1 KEY THEMES

Theme
Coordination, collaboration and governance of climate change responses
Driving productivity and profitability of agricultural production through research and innovation (R&I)
Climate policy certainty
Value-adding along the supply chain
Financial instruments and tax incentives to address climate change
Social cohesion of rural communities and individuals
Land use planning, competition and management
Climate change impact on water policy
Leadership and coordination in the provision of climate data
Biosecurity
Infrastructure planning and investment

SOURCE: ACIL ALLEN CONSULTING

Each theme (and its opportunity and risk elements) was analysed in terms of its relevance to the concepts of resilience, adaptation and mitigation; linkages to broader policy considerations; and responsibilities and timeframes for actions to address the issues raised.

Coordination and collaboration: A coordinated and enduring regulatory and policy framework that is farmer focused, is essential to manage the risks inherent to the sector (including risks stemming from climate change and extreme weather). Such an approach would need to recognise the diversity in agricultural systems across Australia, the considerable differences between regions and commodities, and ensure that farmers, commodity sectors and communities are able to take advantage of the opportunities to adjust and adapt.

Stakeholders also made it clear that such coordination meant a drawing together and integration of otherwise discrete policies and programs. From a farmer's perspective, long-term stability in the settings for energy policy; water availability and security; drought policy; biodiversity and biosecurity programs; agricultural R&I coupled with deployment initiatives; effective water and carbon markets; and emissions reduction commitments, are fundamental to the sector's willingness and ability to make long-term investments in adaptation and emissions management.

Adaptive responses that deliver incremental adjustment, such as changing crop variety between seasons, are relatively low cost but unlikely to deliver the quantum of adaptation necessary in the long-term. More substantive and transformative responses such as consolidating enterprises; moving to other commodities or markets; shifting the enterprise to a different climatic location; or diversifying into other businesses, require significant capital investment and longer lead times.

R&I: The long-term viability of components of the agricultural sector are at risk in the absence of adaptation responses that deliver a step change in the levels of productivity. Innovative, new research activity focused on transformational changes, is required. Consideration of the overall R&I system indicates the scope to provide greater coherence in direction, stability of ongoing funding, and a

stronger focus on delivery at the regional and farm level. Improved coordination between the institutions, companies and scientific communities engaged in agricultural climate adaptation research, development and innovation programs would deliver better outcomes.

Stakeholders consider that farmers' needs are not adequately targeted and highlighted the importance of their engagement in the development of R&I policy and programs addressing climate change.

Climate policy certainty: The lack of a consistent long-term policy on climate change has created a stop-start approach to measures to manage emissions and the impacts of climate change. Stakeholders perceive that the uncertainty that pervades policy in this area has hampered longer term thinking and action by the sector. This has reduced the willingness of industry, markets and governments to make investments in long lived infrastructure or land use changes to help mitigate climate change due to the uncertainty around whether policies will remain in place long enough to deliver a positive return on investment (ROI).

A long-term, stable policy on climate change would provide the agricultural sector with greater confidence to invest in developing and implementing measures to both manage emissions and adapt to the impacts of climate change. It would also provide a stable framework for programs that provide support to the sector to make those investments.

Supply chains: Stakeholders saw an opportunity to build on Australia's reputation for clean, green products. If agricultural emissions are curbed, coupled with appropriate marketing, Australian agricultural products would be well positioned to obtain a premium in the marketplace. Stakeholders identified that action is required to facilitate this opportunity and to also address possible disruptions to the supply chain arising from climate change.

Financial instruments: A lack of financial instruments and tax incentives were seen as hampering investments to adapt to the impacts of climate change and manage emissions and risk. Many forms of adaptation require farmers to make significant upfront, long-term capital investments that have greater than normal periods for a ROI. Tax measures and other incentives can encourage capital investment in infrastructure and resources (e.g. fodder reserves) which can be called upon in times of stress (e.g. drought). Transformational adaptation or recovery from extreme weather events may not be possible under current settings owing to the significant upfront capital investments required.

It was seen that in order to drive decisions and investments by farmers on emissions mitigation, clearer signals on carbon price, offsets and sequestration were required, together with clarity around emissions policy and impacts on agriculture. A clearer market signal on carbon price could be facilitated by governments articulating a set of specific goals for adaptation and emissions management. This could be complemented by establishing mechanisms for trading in carbon credits by the not-for-profit or private sector as well as governments.

Social cohesion: Stakeholders noted that the movement of agricultural production to more suitable climatic zones, enterprise consolidation, and the increased frequency of local and regional extreme weather events, will impact on rural and regional communities and individual farmers. There were expected to be economic and social effects and impacts on the viability of a number of rural townships and regional centres (especially those which are solely or primarily reliant on agriculture as the key economic driver). Stakeholders observed that this could occur incrementally or rapidly, particularly if a locality experiences several extreme weather events over a short period leaving little time to adjust or recover. The long-term impacts could be profound and include significant social and economic costs.

Land use: Stakeholders observed that agricultural producers may expand their areas of operation to allow for the possibility that the region(s) they are currently operating in may become less productive or suitable for their agricultural activities over time. This could lead to land use conflicts. A reduction in the land available for agricultural uses could reduce the ability of farmers to adapt to the impacts of climate change.

Water policy: The agricultural sector needs to plan for and manage periods where there is not reliable access to a known quality of water. For non-irrigated enterprises, on-farm water resource management (e.g. better farm management practices to improve the water holding capacity of the land and investment in efficient irrigation practices) is key, and water quality and the availability of 'safe' water resources for livestock is vital.

Stakeholders observed that there is likely to be increasing competition for scarce and highly variable water supplies between agricultural commodities and communities, which could lead to an increased price for water, structural adjustment and dislocation of communities.

Climate data: Access to a robust, reliable, consistent, single source of climate modelling and projections at a national, regional and local scale, that are regularly updated and further developed, was seen as necessary to underpin actions. Quality projections would facilitate emissions management at the farm level. Improved projections data may also inform decisions about on-farm mitigation measures and investment, while its absence may lead to ill-advised decisions.

This information was seen as essential to underpin research, development, innovation and deployment of adaptive responses in the agricultural sector and elsewhere, and for mitigation. This capability in climate systems and forecasting could be drawn together and provided through national leadership. The private sector would then be able to develop the tools and provide the commercial application systems and services that are needed by the agricultural sector.

Biosecurity: Stakeholders identified that increases in the prevalence of pests and diseases could lead to reduced yields and/or reduced income for agricultural producers. Pests and diseases were also seen as having the potential to destroy much of the asset value related to carbon offsets. While biosecurity threats arising from climate change include incursions from overseas, the main threat was seen as species migration from neighbouring regions within Australia.

Infrastructure: Stakeholders raised increased planning for, and investment in, infrastructure would help to reduce the potential disruption caused by the impacts of climate change. Additional infrastructure may be needed to ensure that emergency services have the capacity to respond in a timely fashion to increasingly frequent extreme weather events. A failure to plan for, and invest in, infrastructure will increase the risk of agricultural activities being disrupted, resulting in reduced earnings for farmers and a loss of resilience. Key areas for infrastructure investment need to be identified.

Next steps

The analysis will feed into Stream 3. Stream 1 and Stream 2 have served to identify the underlying issues and explore the opportunities and risks that climate change presents to the agricultural sector. Stream 3 will consider options to take advantage of the opportunities and to address the risks. These could form the basis of a work program for a coordinated national approach to support the agricultural sector adapt to climate change and manage emissions.

