

## **Inquiry into the impact of climate change on Queensland agricultural production**

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# Submission to QG Inquiry into the Impact of Climate Change on Queensland's Agricultural Production

Healthy Land & Water

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## Traditional Owner acknowledgement

We acknowledge that the place we now live in has been nurtured by Australia's First Peoples for tens of thousands of years. We believe the spiritual, cultural and physical consciousness gained through this custodianship is vital to maintaining the future of our region.

## Contact details

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# Submission from Healthy Land & Water

## ABOUT THIS SUBMISSION

This submission is made by Healthy Land & Water to the State Development and Regional Industries Committee.

**This submission identifies three priority impacts of climate change to tackle with priority, together with suggested strategies the role the Queensland Government can play in helping to address them.**

## ABOUT THE SUBMITTER

Healthy Land & Water is the peak environmental group for South East Queensland (SEQ). *Healthy Land & Water is the official natural resource management group for SEQ and coordinates the SEQ Natural Resource Management Plan on behalf of all the communities across the region.*

With a focus on environmental investment and sustainability, Healthy Land & Water has led numerous projects to enhance sustainable farming, restore waterways, improve habitats, and educate communities over the past 23 years.

Our success and strength stems from our extensive knowledge, science and evidence which informs investment in our environment. We have expertise in research, monitoring, evaluation and project management. Our team has led many thousands of projects to improve sustainable farming, restore waterways and landscapes, improve native habitats, manage weeds, protect native species, inform policy and educate communities on the best ways to improve and protect the environment.

Working in partnership with Traditional Owners, government, private industry, utilities, farmers and the community, Healthy Land & Water delivers innovative and science-based solutions to challenges affecting the environment. Through a combination of scientific expertise and on-ground management works, Healthy Land & Water *leads and connects through science and actions to preserve and enhance our natural assets and support resilient regions long into the future.*

Healthy Land & Water has been dedicated to investing in and leading initiatives to build the prosperity, liveability, and sustainability of our 'future region'.

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Authorised by Dr Andrew O'Neill, (Acting CEO).

## **1 PART A: The impacts of climate change and climate variability on Queensland agricultural production and the existing and potential future risks of climate change on the sector.**

A hotter and drier climate juxtaposed with increasing intense rainfall events will have significant impacts on Queensland's agricultural production.

Climate change and climate variability will impact on Queensland's agricultural production in many ways. Some of these impacts are well understood and some not.

### **1.1 Farmers will need to continue to adapt**

- The quality and quantity of current crop yields will be hard to maintain under the predicted changes in climate meaning particular crops may become unviable in regions where they are currently grown (Henry and Howlett, 2021).

- Livestock production may be difficult to maintain under the predicted changes with pasture production, liveweight gains and herd fertility impacted.
- In order for agricultural businesses to stay viable, additional inputs (e.g. irrigation), transition to new commodities, or diversification (or a combination of these) may be required.
- Carbon farming and other environmental markets offer opportunities for farmers to diversify income streams whilst contributing to biodiversity improvements, and Australia's greenhouse gas emission targets.

## 1.2 Farming is risky business; climate change makes it riskier

- Changes in seasonal conditions (period 2001-2020) have reduced annual average farm profits by over 20% (Hughs 2021).
- Scenario results show a wide range of outcomes for Australian farms, due mostly to uncertainty across climate projections, particularly for rainfall (Hughs 2021).
- Uncertainties faced by farmers over future climate projections have the potential to constrain adaptation, particularly adaptation requiring long-term investment (Hughs 2021).
- How farm businesses manage any increase in drought risk, by improving their physical and/or financial resilience, will be central to future outcomes in the agricultural sector (Hughs 2021).
- Boom and bust seasons, and the increasing frequency of natural disasters and extreme climate events are likely to make natural capital markets riskier for farmers.
- Insurance has historically been difficult for agricultural businesses to access; under predicted climate scenarios there is a risk that adequate and affordable insurance policies to allow adaptation will be increasingly difficult to access (Knudsen and Muller 2017).

## 1.3 ESG means market forces will increasingly require environmental credentials (who pays?)

- Trading partners and sources of capital and finance are increasingly expecting companies and products to meet global environmental, social and governance principles (ESG) (NFF 2023).
- Agricultural producers may have little time to adapt to this change with markets moving quickly to demand environmental credentials.
- ESG guidelines have no national, or global, set of standards and are instead open to interpretation by individual businesses; currently there are more than 30 different industry ESG models operating in Australia (Robert Poole – ABC News interview, 2023).
- The onus on providing a positive ESG status could still fall to individual farmers meaning additional costs for producers with no guarantee of cost recovery through premium prices or access to higher value markets (Robert Poole – ABC News interview, 2023).
- Opportunities for farmers to leverage national and regional mechanisms such as Accounting for Nature and regional environmental report cards can reduce the action prioritisation, monitoring and reporting burden.

## 2 **Part B: The opportunities for the Queensland Government to create and support resilience, adaptation, and mitigation measures in preparing the agricultural sector for future climate change**

### 2.1 **Continuity of funding for quality extension services through limited, qualified service providers**

- Quality extension programs have a measurable positive impact on sustainable land management change and resilience to climate change. In Healthy Land & Water's recent end of program survey for the 5-year Regional Land Partnerships program:
  - 96% of the landholders who attended Climate Adaptation workshops identified climate adaptation strategies and/or management practices they were considering implementing on their properties/businesses.
  - 91% of landholders indicated that their involvement had increased long-term sustainability and production.
  - 91% of landholders indicated that their participation has led to increased resilience of enterprise and natural assets to deal with climate change.
- Practice change relies heavily on the relationships between agricultural producers and extension staff and the knowledge base that exists within them.
- To build resilience to the challenges that climate change and variability will bring to agricultural landscapes, producers need to adopt the well evidenced practices and technologies that already exist as well as adopting new science and technologies as they emerge.
- Many providers of agricultural extension services survive on short-term, project-based funding. Their contracts may or may not be renewed after the 1, 2 or 5-year programs have ended. This makes attracting and retaining extension staff very challenging.
- Continuity of service provision is important because it facilitates knowledge and relationship building in a more meaningful way.
- These hard-won relationships fall away, and knowledge is lost when extension/project staff move on due to the instability of tenure, gaps between funding rounds, and program cessation.
- Current funding models usually allow for multiple service providers to deliver concurrent short-term programs – maximising inefficiencies through double up and overlap.
- To ensure the effectiveness of programs designed to build resilience and adaptive capacity in agriculture, there needs to be an ongoing commitment to supporting landholders across all agriculture industries to develop holistic Property Management Plans, including Farm Business Resilience Plans, and continuing to support and refine Best Management Practice (BMP) programs.
- To ensure Plans and BMP programs are more effective, truly holistic and consider all risks – climate, environmental, biosecurity, production, financial and market based - there should be greater collaboration with regional NRM and industry extension and adoption staff to enable experienced and local trusted advisors to be directly involved in the delivery of programs.
- Addressing the critical need for extension staff – especially those with soil conservation and erosion management skills and expertise – will help moderate the increasing risk to soil health and stability, production systems, agricultural and community infrastructure and the natural environment associated with more frequent and intense rainfall events and flooding.
- Ensuring there is a long-term commitment to providing quality independent extension services by ensuring dedicated support for mentoring and training for staff to ensure the transfer of knowledge and skills from leading researchers and extension staff.
- Integrated Queensland Government programs – e.g. ensuring funding packages, such as the Natural Resource and Recovery Program, are integrated with water and land use planning decisions. Extending

this integration opportunity to Federal Government programs such as the Future Drought Fund and the Regional Delivery Partner program.

## 2.2 Supporting farmers to adapt

Climate change and climate variability present tremendous challenges for agricultural producers in Queensland. Conversely, it may also present opportunities to adapt their current operation, transition to a new commodity or diversify into higher value, green credentialled products or natural capital markets.

### The Queensland Government can support adaptation through:

- a. **Agricultural economic extension**
- b. **Transition, diversification or market adaptation grants**
- c. **Targeted research priorities with appropriate oversight**

#### a. Agricultural economic extension

- Farmers need to implement strategies such as practice change, diversification, ESG requirements and transition to other crops or commodities to stay viable. There has been a distinct focus on providing training and agricultural extension directed towards effecting this change. This would benefit from including the assessment of the financial consequences of change/s for individual farm businesses.
- Farmers also need support to understand the financial impacts of climate change on their farming enterprise and assess the financial viability of each adaptation option to find the right fit for their farming business.
- Initial research suggests that capacity to analyse, plan and assess the costs and benefits of transformational adaptation activities is essential to drive change (Knudsen and Muller, 2017).
- Farmers will also benefit from independent advice that provides clear pathways to engage with carbon credit aggregators; for example, what will be required to scale up credits in regions like SEQ where smaller holdings are more typical.

#### b. Transition, diversification and market adaptation grants and adapting recovery grants to be more inclusive of producers with off-farm income

Change is expensive and agricultural businesses may need assistance to transition, diversify or adapt to meet environmental credentials. In Healthy Land & Water's recent end of program survey for the 5-year Regional Land Program, respondents reported a lack of financial resources as the biggest barrier to making changes to land management practices.

<u>Transition grants</u>	Assistance to shift from one commodity to another.
<u>Diversification grants</u>	Assistance to incorporate a new commodity or activity into the current farm business.
<u>Market adaptation grants</u>	This could come in two forms: <ul style="list-style-type: none"> <li>• Short-term support to help agricultural producers to adapt when markets require them to adopt environmental credentials or regulations in a very short period of time.</li> <li>• Longer-term support to assist agricultural producers to prepare their businesses to comply with expected or impending environmental credentials or regulations.</li> </ul>
<u>Changes to recovery Funding criteria</u>	Many farming businesses require off-farm income to provide financial stability for farming families. This is particularly true in the context of climate change and climate variability. As highlighted recently in the media, recovery funding criteria mean some farming businesses are excluded from assistance due to off-farm income despite being heavily impacted.

NRM Groups can play a pivotal role in the dissemination of grant opportunities, supporting landholders to develop grant applications, and providing the extension services required to see grant outcomes realised.

### **c. Targeted research priorities with appropriate oversight**

- Directing research to better understand how agricultural producers can more effectively manage climate risks in their business and developing practical tools and technologies which have wide application across industry.
- Ensuring Universities and research organisations work more closely and collaboratively with industry and NRM organisations, and utilise current structures such as the Drought Innovation Hubs, to ensure that research programs meet the needs of the agricultural industries they represent.
- Encourage further research to address current gaps on climate related impacts; to date there has been limited climate research into sown pastures and legumes in southern coastal Queensland over recent years, and the impacts of predicted climate change on disease, biosecurity, pasture growth and pasture quality.

## **2.3 Protection of agricultural land against fragmentation and the pressures of urban development.**

- Subdivision and fragmentation of productive agricultural land and the pressure of encroaching urban development is an issue for agricultural productivity, particularly in South East Queensland.
- The update to *Shaping SEQ* currently being undertaken by the Queensland Government must account not only for existing agricultural business needs, but also changing needs due to climate change and urban growth.
- The productive capacity of agricultural land can be impacted by a land-use change that fragments productive land areas or brings them into conflict with adjoining land uses (such as urban development) (*SEQ NRM Plan, 2009*).
- In general, more marginal agricultural lands, occurring primarily in the lower rainfall rangeland areas, are where the more severe impacts of climate change are observed (Hughes, N. 2021). Therefore, an appropriate strategy would be to prioritise the protection of prime agricultural land in the higher rainfall zones from fragmentation or land use change.
- Farm survey data consistently shows higher productivity and profit levels among larger farm businesses (Hughes 2021).
- Larger farms are less sensitive to drought risk (Hughes 2021).

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