



# QUEENSLAND FARMERS' FEDERATION

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## Submission

9 January 2017

Climate Change Adaptation  
Environmental Policy and Planning  
Department of Environment and Heritage Protection  
GPO Box 2454  
BRISBANE QLD 4001

Via email: [adaptation@ehp.qld.gov.au](mailto:adaptation@ehp.qld.gov.au)

Dear Sir/Madam

### Re: Queensland Climate Adaptation Directions Statement

The Queensland Farmers' Federation (QFF) is the united voice of intensive agriculture in Queensland. It is a federation that represents the interests of 15 of Queensland's peak rural industry organisations, which in turn collectively represent more than 13,000 primary producers across the state. QFF engages in a broad range of economic, social, environmental and regional issues of strategic importance to the productivity, sustainability and growth of the agricultural sector. QFF's mission is to secure a strong and sustainable future for Queensland primary producers by representing the common interests of our member organisations:

- CANEGROWERS
- Cotton Australia
- Growcom
- Nursery & Garden Industry Queensland
- Queensland Chicken Growers' Association
- Queensland Dairyfarmers' Organisation
- Burdekin River Irrigation Area Committee
- Central Downs Irrigators Limited
- Bundaberg Regional Irrigators Group
- Flower Association of Queensland Inc.
- Pioneer Valley Water Board
- Pork Queensland Inc.
- Queensland Chicken Meat Council
- Queensland United Egg Producers
- Australian Organic.

QFF acknowledges that climate change poses a substantial challenge for all Queenslanders and the industries on which they depend. It is already evident that Queensland's climate is changing and that many aspects of everyday life are also being altered by these changes.

*The united voice of intensive agriculture*



Queensland must pursue the best possible climate science and be fully engaged with the economic drivers of the state. Queensland depends on industries that are highly dependent and responsive to climate in our tourism, recreation and primary industries. The state's economic wellbeing is closely aligned with the mining and resources sector, particularly the exploitation of vast coal and gas reserves. These economic drivers are highly dependent on linkages between the provision of efficient water and energy sources to support the state's core industries and the wider community.

Queensland's farmers are acutely aware that we live in a highly variable and at times a highly dangerous climate. QFF remains committed to assisting the Queensland Government to continue developing climate science capabilities and appropriate public policies and programs to deal with the challenges of climate change.

QFF welcomes the opportunity to respond to the Directions Statement and provides this submission without prejudice to any additional submission provided by our members or individual farmers.

**1. *How should the Queensland Government engage and work with communities, local governments and economic sectors to facilitate planning for climate adaptation.***

QFF considers that regional communities and industries still require a better understanding of climate risks, both those associated with seasonal variability and the inter-decadal climate changes. Greater skills and practical plans to cope with the changes are also required. Queensland's intensive agricultural industries see climate risk management as a continuous work-in-progress. As seasonal forecasts and climate change scenarios improve, farmers have a greater opportunity to apply more substantive information to adaptation and mitigation decisions. Primary industry peak bodies are informed about climate change issues at the state scale, but there are multiple gaps in our knowledge about risks at a practical business decision-making scale or commodity level.

QFF considers that if Queensland is to succeed in its response to climate change, it will need to address the following (as detailed in the Australia Government's 'Australia's Biodiversity Conservation Policy 2010-2030'<sup>1</sup>):

- a) Recognition of biodiversity values and ecosystem services;
- b) Recognition of indirect effects of farm activities on biodiversity values and ecosystem services;
- c) Perceived cost of these activities to restore degraded lands; and
- d) Economic, social pressures and incentives to bring about change to degraded farm landscapes.

There is always an overlap of regulatory responsibilities between federal, state and local jurisdictions due to the complex nature that surrounds environmental protection, water resources and land-use management. This is particularly true on issues that cut across state borders, such as water, and they therefore lend themselves to be dealt with at a national level.

The Queensland Government should take the lead role in designing and implementing NRM planning that targets the four main criteria above. The plans need to incorporate the climate change pressures, make the best use of the land for the stakeholders concerned and add to rather than detract from, the state's natural environmental assets.

In relation to land-use planning, the protection of valuable agricultural land will increase in importance, particularly if climate change reduces the available area of arable and productive land. There also needs to be the ability to reshape and move the agricultural footprint in Queensland to maintain natural assets while not compromising the productive capacity of agriculture.

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<sup>1</sup> National Biodiversity Strategy Review Task Group, 2010. 'Australia's Biodiversity Conservation Strategy 2010-2030'. <https://www.environment.gov.au/biodiversity/publications/australias-biodiversity-conservation-strategy>

Future planning decisions in the meantime will need to be based on the best information available. The establishment of an effective and timely method of communicating developments in predictive models to planning decision makers will be an important step in managing these risks.

Investment is required in programs that provide land use planners the best possible information to ensure appropriate development and the protection of valuable agricultural land.

## **2. *What infrastructure, assets, services and functions are most threatened by climate change?***

Agriculture relies heavily on a variety of on-farm infrastructure such as buildings, energy supply, telecommunications, renewable energy installations, water storage, private roads, bridges, fencing, marine and estuary structures etc. More severe rainfall events, increased temperatures, and more severe storms will require a design and construction response if infrastructure is to be constructed and maintained at a standard that prevents loss and interruptions in the supply chain. The associated costs of new and/or retrofitted infrastructure to withstand climate change may be substantial.

Agricultural production will be directly impacted by climate change. As Queensland experiences higher temperatures, hotter and more frequent hot days, fewer frosts, more storm and storm cell activity, reduced rainfall and conversely more intensive rainfall events; direct crop-losses and reductions in productivity result. To manage these challenges, agriculture is continuously adapting. Crop selection, new crop varieties, different management practices and the design of on-farm infrastructure is, and will continue to influence commodity production in Queensland, which may result in the obsolescence of some crops.

The security of service infrastructure is vital in many agriculture industries. For example, prolonged interruption to the electricity supply poses significant challenges for the cane, cotton, horticulture, dairy and intensive animal production industries. This is generally the case for any industry that has the need to maintain energy supply for animal welfare needs or the maintenance of perishable fresh produce awaiting transport to markets. An increase in the duration and/or frequency of interruption may require farms to implement expensive back-up systems to protect production.

Investment is required in infrastructure design and construction that minimises supply chain and essential service interruptions. This design should take into account planning for emergency supplies; such as: access to local generator supplies and backup plans to ensure movement of animal feed and fresh produce, and contingency planning for freight routes of last resort. There is also increasing reliance on large-scale infrastructure, in particular ports and airports to transport perishables straight to market; for example, from local producers to customers in Asia. In larger scale supply chain infrastructure, the impacts on products and production (e.g. lack of timeliness and bottlenecks) will obviously be greater, so investment, design and construction is critical.

## **3. *How can the Queensland Government support effective climate adaptation?***

Understanding future farming and potential landscape management options and practical uptake of strategies for dealing with climate change would allow farmers to improve their strategic business decisions. This would also aid in the acceleration of climate change adaptation to develop a more resilient, profitable and competitive farming sector.

Queensland primary industries require appropriate cutting edge climate change modelling that can be downscaled to a level that makes sense for consideration of future management options to an individual enterprise. In doing so we need to recognise that the scale associated with recent advances in model selection and downscaling may not match the scale needed by a major farming enterprise. There needs

to be a comprehensive evaluation of the future of farming landscapes and possible opportunities for alternate land uses using climate and crop/livestock models ground-truthed in a working farming situation in Queensland. Expected outcomes of future modelling work would include the development of robust adaptation strategies related to long-term viability, sustainability and manageability for future farming in Queensland. QFF considers that improved modelling frameworks are required. For example, integrating models such as Agricultural Production Systems Simulation Model (APSIM) and AussieGrass with weather and climate information would aid practical decision making.

Continued and expanded future support from government for industry Best Management Practice (BMP) programs (discussed further in Question 7) is vital, as these programs are extremely useful in both planning and evaluating climate adaptation. As the climate changes it is important that investment in projects is not only reacting to these changes, but it also enables people to improve their resilience to change. BMP programs are evolutionary by nature and have genuine farmer buy-in, making them the ideal vehicles to incorporate climate change planning and evaluation.

While the response to this question focusses on production, there are many other climate risks poised to impact on the agricultural sector including: water resource management; fire risk; and new biosecurity challenges.

#### **4. *How should the Queensland Government work with your region to promote adaptation action?***

QFF anticipates that other stakeholders will comment on this section in more detail.

Information to assist farmers to make timely decisions on the potential impacts of climate change will be essential to agriculture preparing for, and adapting to changes in climate. There is substantial work by a large number of organisations on climate change underway, so ensuring the linkages between this work is essential. Keeping informed of the latest and most credible predictions, estimates, or actions is a difficult task for individuals given the volume of reports and commentary.

QFF considers the most effective and relevant way to present information to the primary industry sector is by investing in a communication strategy delivered by industry. The investment will ensure farmers engage and they are able to access the most relevant and credible information. Investing time and resources to ensure the information remains current and is on a time scale relevant to production systems will also be important to assist day-to-day decision making.

#### **5. *What are the priority economic sectors with which the Queensland Government should build adaptation partnerships?***

QFF supports the development of an industry-led adaptation plan for the agricultural sector that will form a critical component of the Queensland Climate Adaptation Strategy (Q-CAS) currently being developed. The sector plan partnership with the Queensland Government will provide a vehicle for the agricultural sector to work with state and local government agencies and industry members to prioritise adaptation activities. Having industry organisations involved in the development of Q-CAS and the sector plans, will further encourage the desired and necessary bottom-up approach.

Queensland's agricultural sector is particularly vulnerable to the long term impacts of climate change if not managed properly. Appropriate adaptation strategies can secure the long term sustainability of Queensland's farming sector, helping to ensure food security, regional employment and export earnings.

## **6. What are the key climate risks for community or sector?**

Considering production risks, an increase in the frequency and scale of weather events will threaten both plant and animal production systems. Annual and perennial crops will be impacted by storm, flood and hail damage. In intensive production industries, where the geographical scale of properties is not as large, systems such as netting have been used to protect crops from some of these weather events. However, an increase in intensity of these events may require a redesign of physical protection systems.

An increase in extreme temperature variations will raise the potential for severe heat or severe cold events causing widespread damage to annual production. Research and development focussed on breeding new varieties more suited to changing weather conditions is positive with mixed results to date. Investment is required in programs to improve the security of crop production in the event of an increase in frequency and intensity of extreme weather events, and further work needs to be done to address the lack of financial tools that farmers have to insure against these type of events.

Greater climate variability also poses challenges livestock industries. Extensive industries may face substantial changes to carrying capacity from year to year, while intensive industries may face greater variation in the access to and cost of fodder and grain supplies. Investment is required in programs that facilitate the ability of production systems to level out any increase in the variability of carrying capacity and fodder production.

## **7. What climate adaptation activities are already underway in your community or sector?**

Agriculture has considerable capacity to adapt to the climate. Changes in land management practices, geographic diversification, crop and cultivar choice, selection of animal species, targeted plant and animal breeding programs, and technologies to increase water use efficiency are just some adaptations already implemented. All of these activities could and will be further deployed by farmers to respond to climate change, although as the degree of climate change increases the limits of this adaptive capacity may be tested. There may be some gains in some regions emerging from low levels of climate change as a result of longer growing seasons, fewer frosts, higher rainfall (northern Australia) and CO<sub>2</sub> fertilisation.

The agribusiness units and regions most at risk will be:

- those already stressed — economically or biophysically, as a result of land degradation, salinization (increasing salt content in soil) and loss of biodiversity;
- those at the edge of their climate tolerance; and
- those where large and long lived investments are being made — such as in dedicated irrigation systems, slow growing cultivars and processing facilities.

QFF's member organisations have been working on developing both commodity-specific and sector-wide action plans to ensure that farmers have the tools to assess the risks and opportunities associated with climate change and factor that into their ordinary business. Farmers have been dealing with climate variability for many generations, and those that have the risk management skills best able to deal with climate change will best placed in the longer term.

BMP programs exist for many agricultural industries, providing guidelines and benchmarking tools to assist producers in their daily management across the farm business. BMP programs comprise of modules that guide farmers through different aspects of the farm's operations, from irrigation efficiency to industrial relations. The modules help farmers to identify management issues and develop an action plan for future improvements. While most BMP programs do not have a climate module at this time, many existing modules will include areas relevant to climate adaptation (e.g. modules that address water use efficiency or drought risk management). Data from BMP programs can provide essential information on adaptation progress and be useful in both planning and evaluating climate adaptation.

QFF advocates working with government agencies whose key role should be researching and providing advice on appropriate scenarios for various industries, commodities and regions, and working with industry on developing appropriate sectoral responses including supporting the development of BMP climate modules.

**8. *What can be done to build on current climate adaptation initiatives within your community or sector?***

QFF and its member organisations have sought funding to progress climate change initiatives previously, but so far only a few very targeted projects (dairy, cane and horticulture regional case studies) have been resourced. There is serious risk that this will result in a fragmentation of efforts to keep farmers engaged in the important work to manage the impacts of climate change on farm, and a more comprehensive approach is required. QFF advocates for constructive relationships between industry bodies and rural R&D corporations, as well as continued investment in updating BMP programs.

Changes in farm business structures and ownership of the resource may also be driven by the effects of a changing climate. Some industries have already seen a growth in corporate and non-farmer investment in properties and supply chains. There are also examples where the management expertise of a farm is separate from the ownership of the production resource.

If seasonal production becomes less secure, the capacity to spread risk through new and novel business structures will assist farm enterprises to manage these risks. New approaches could also be used to leverage new entrants into agriculture through the provision of management expertise. Greater agreed understanding of the tax, corporate governance and land tenure arrangements that either support or hinder this flexibility is required.

However, history suggests that the majority of farms will continue to be family owned and operated and facilitating appropriate business structures for these enterprises will be important. The Queensland Government needs to invest in programs to develop farm business structures that facilitate ability for farm businesses to manage increased production risk.

**Summary**

Capturing the opportunities and managing the risks will be challenging, and farming and regional/rural communities need to be prepared as best they can to deal with the eventualities. Investments that aim to secure Queensland's food, fibre and foliage production industries, and maintain rural populations are necessary for the long term benefit of the Queensland community and economy.

QFF and its members look forward to entering into partnerships with government to progress climate adaptation in our sector and to further prepare it for the challenges ahead.

Yours sincerely

Travis Tobin  
Chief Executive Officer