

**SUBMISSION TO PRODUCTIVITY COMMISSION:
Barriers to Effective Climate Change Adaptation
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ATTN:

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Queensland Farmers' Federation (QFF) is the peak body representing and uniting 16 of Queensland's rural industry organisations who work on behalf of primary producers across the state. QFF's mission is to secure a sustainable future for Queensland primary producers within a favourable social, economic and political environment by representing the common interests of its member organisations'. QFF's core business centres on resource security; water resources; environment and natural resources; industry development; economics; quarantine and trade.

Our goal is to secure a sustainable and profitable future for our members, as a core growth sector of the economy. Our members include:

- Australian Prawn Farmers' Association,
- CANEGROWERS,
- Cotton Australia,
- Growcom,
- Nursery and Garden Industry Queensland,
- Queensland Chicken Growers Association,
- Queensland Dairyfarmer's Organisation,
- Queensland Chicken Meat Council,
- Flower Association of Queensland Inc.,
- Pork Queensland Inc.,
- Biological Farmers of Australia
- Fitzroy Food and Fibre Association,
- Pioneer Valley Water Co-operative Limited,
- Queensland Aquaculture Industries Federation,
- Central Downs Irrigators Limited, and
- Burdekin River Irrigators Area Committee

QFF is pleased to offer this contribution to the Productivity commission inquiry into Barriers to Effective Climate Change Adaptation. The Federation has attempted to provide a positive, solution focused perspective. The comments of the Federation in no way prejudice the opportunity our members may take to provide their own specific contribution to this inquiry. Where possible we have attempted to provide a collective, representative position of our broad membership group.

If requested QFF would be happy to provide further contribution to this inquiry at a later date.

Regards



Dan Galligan
CEO

1. Introduction

QFF has been actively engaged in many of the climate change adaptation activities and inquiries identified in the Productivity Commission Issues Paper “Barriers to Effective Climate Change Adaptation”. QFF considers that this inquiry is timely and appropriate given the ongoing intervention by governments in many aspects of policy in relation to management of climate change and variability Australia.

Since 2007 QFF and most of our members have taken a lead role in understanding and communicating climate adaptation research and practice. QFF continues to provide advice to governments on requirements of farmers and agribusiness in this aspect of public policy.¹ We also remain engaged in the National Climate Change Adaptation Research Facility (NCCARF) and have provided advice on its primary industries research plans.² Further, our industry members have taken deliberate and specific steps to invest in gaining greater knowledge or influencing policy in this arena.

While QFF does not see itself as having particular expertise to provide detailed advice on all aspects of the Terms of Reference as provided in the Issues Paper (October 2011), QFF is in a position to comment and advise on some key questions which are important to farming and agribusiness interests in Queensland. This submission therefore addresses only those matters where QFF sees it can contribute to discussion about appropriate government responses to climate change.

This submission accepts the narrower definition of “climate change adaptation” to mean human actions to adjust to climate, rather than the broader ones involving all ecosystem responses. QFF also emphasises that there is no clear distinction between what is a human action in response to climate change and one in response to climate variability. In farming, enterprise decisions made in an uncertain environment tend to be risk management decisions in a continuous adjustment to circumstances, rather than an absolute adjustment. We will provide further comment on the practical implications of “decision making under uncertainty” in the pages that follow.

2. Making Adaptation Effective

The issues paper states that the inquiry will not consider mitigation policy. However, we ask the Commission to acknowledge that mitigation policies (primarily the *Clean Energy Future* and *Carbon Farming Initiative*) may have a direct effect on the adaptive capacity of many industries. Because these policies were developed in isolation to address mitigation issues, they represent a missed opportunity to link mitigation and adaptation actions, particularly in the agriculture sector. It is important that this mistake is not repeated while developing adaptation policy frameworks. Mitigation and adaptation activities are implemented in an integrated way in the farm business, and policies need to be developed in such a way as to allow and indeed encourage this to occur.

QFF appreciates why the public sector chooses to treat mitigation and adaptation separately, and why climate change literature uses phrases like structural adjustments, tipping points and maladjustments, but in a competitive economy these terminologies can create

misunderstandings about how individuals and businesses conduct risk management. As the Commission noted peoples actions to ameliorate a risky situation will range across the spectrum and it is only with hindsight that any evaluation can reasonably be made.

How is effective adaptation best defined? How can it best be assessed? In other words, is the rate of adaptation ‘too much’ or ‘not enough’, ‘too soon’ or ‘too late’? What other considerations may be relevant for maximising the net benefits to the community from adaptation?

For the agriculture sector, successful adaptation will involve the maintenance and expansion of agricultural productivity in the face of a changing climate. While the mix of commodities may change and the major production regions may move, the total productivity must be maintained or increased (in line with other government policy initiatives for agriculture).

The type and timing of the actions required to achieve successful adaptation are highly variable. For example, in some annual production systems, ‘on the fly’ adaptation may be possible through the selection of new varieties. In contrast, in perennial systems such as temperate fruit trees, adaptation may require significant capital investment in new plants and equipment, and there may be many years between planting and first harvest. As a result, decisions on adaptation will need to be made many years in advance of the action being required, and there may be a significant delay before achieving a return on investment. Furthermore this type of adaptation can be capital intensive and therefore the signals that point to such a change need to be as coherent as possible when consider within the broader risk management and investment plan for the business.

Among policy makers, it is not often recognised that individual farmers and landowners are the primary agents of adaptation in agriculture. Individual landowners must collect the relevant information, assess the level of climate risk, make the management decisions, take the necessary actions, pay the costs of implementation and assume responsibility for any negative outcomes. As a result, government and industry strategies must target these landowners to ensure that they have the support required to act on climate adaptation. The focus on regional adaptation is misplaced. QFF would contend that assessment of the need for adaptation and the associated options for action needs to be made at both the regional and industry scale. Actions in the end will be undertaken at the business scale and any assessment needs to consider its relevance to the business in order for it to make a case for change.

What kinds of adaptation to climate change (and variability) have proven most effective to date?

Historically, climate variability has been addressed using appropriate information (such as long-range weather forecasts) and decision-support tools. Because Australia has a highly variable climate it has developed considerable comparative advantage in dealing with weather extremes and QFF believes this will continue to underpin our economy even as climate change accelerates.

How can uncertainty be addressed in the context of adaptation to climate change?

The major tools that industries use to manage uncertainty and risks revolve around insurance products and production techniques to ameliorate weather risks. In farming there are a wide range of tactics that producers utilise to deal with climate and these will continue to be

developed as circumstances demand. Water, energy and other input efficiencies are continuously being sought.

3. Barriers to Adaptation

The issues paper adequately defines the market and regulatory matters that affect policy development but QFF notes there is a rich literature surrounding the matter of what causes people “to deviate from the ideal response”.

What is the most useful way to classify, define and identify barriers to adaptation? Are the categories set out above appropriate? Are there other types of barriers?

There are a number of regulatory and policy barriers that may limit adaptation actions within agricultural industries.

Behavioural and cultural barriers – constraints on decision making abilities resulting from a lack of relevant information, a lack of appropriate decision-support tools, and in some cases, cultural resistance to change. It is also important to recognise that agriculture is an inherently complex enterprise with many competing risks that require simultaneous management. For example, in addition to managing risks associated with climate change (which may be considered to be a longer-term problem), producers also need to manage risks associated with pest/disease incursions, extreme weather events (current climate variability), market perturbations, competitors, government policy and regulation etc.. The level of risk is dynamic, and priorities in risk management will change over time in response to changing conditions. Producers need coherent signals to inform them of when and how to change. Often it is not the issue of greatest long term importance that is reacted too, but merely that issue that is most clearly communicated to the decision maker.

Information barriers - these may contribute to behavioural and cultural barriers, but are sufficiently important to require a separate heading. A lack of relevant information on the hazards associated with climate change and the practices that may reduce risk is a major barrier to adaptation in agricultural industries. Despite considerable investment in climate change research for primary industries, the major research programs do not produce information that is relevant for a large number of industries. For example, the research strategies of the *Climate Change Research Strategy for Primary Industries* (CCRSPI) and the *National Climate Change Adaptation Research Facility* (NCCARF) both aim to be demand-driven and claim to place a high priority on stakeholder engagement. However, neither strategy includes a process to assess demand in the main stakeholder group (producers), nor a method to incorporate that demand into the process for establishing research priorities. As a result, the outputs are (and will continue be) of little relevance or value for informing on-farm adaptation actions.

Pre-emptive adaptation to higher temperatures relies on access to relevant climate projection data, knowledge of specific climatic requirements of a particular crop, and the identification of potential adaptation strategies.

Adaptation is not only about managing risks, it is also about defining opportunities that may come with climate change and governments need to be continually reminded of this to ensure policy responses are balanced.

Financial barriers – the costs of adaptation will vary greatly among crops, regions and production systems. In some cases, adaptation will require significant capital investment; for example, a switch to protected cropping under shade netting, redevelopment of irrigation infrastructure, purchasing new land to diversify production and manage risk, or switching crops and systems (which may require new machinery and training).

Regulatory barriers – resulting from interactions with other regulations and policy instruments. Eg.

- Planning and zoning regulations which may limit the range of possible adaptation actions on existing agricultural land (such as building protective structures or other on-farm infrastructure).
- Planning and zoning regulations that prevent the expansion of agricultural production into areas that may become suitable under a changing climate, while current production areas become unsuitable.
- Mitigation policies such as the *Clean Energy Future* (CEF) package and the *Carbon Farming Initiative* (CFI) which prioritise mitigation actions rather than adaptation. Financial penalties associated with mitigation policies ensure that they will remain a higher priority.
- The increase in farm input costs resulting from the carbon price will reduce the capacity of farmers to engage in adaptation actions.
- Regulatory requirements of CFI methodologies that remove flexibility in farm management decisions (eg. the permanence requirement in sequestration offsets).
- Water policy. Water availability and affordability are likely to be important factors in facilitating adaptation for many crops and production regions. Within existing systems, water requirements are likely to increase in response to higher temperatures, higher evaporation rates and heat/water stress. In addition, water is an important component of some climate adaptation strategies, such as evaporative cooling of crops via micro sprinkler irrigation. Clearly, there are important interactions between climate adaptation and policies/regulations regarding water.
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- QFF also suggests that the education and training sector is probably underperforming when it comes to appropriately informing and skilling the Australian population about climate change impacts and consequences.

What market failures could inhibit adaptation in any specific sector or region?

QFF is unsure if there are any market or regulatory failures other than those noted above. We need to accept that there are limits and shortcomings in competitive markets and the population should not always expect that government intervention will rectify all problems.

4. Policy Instruments and Reforms

QFF notes that the issues paper provides a comprehensive listing of government actions on climate adaptation but doesn't provide for the full consideration of cross-over programs that probably interact with individual and collective responses. QFF has noted for other inquiries that there is often a disconnect between the inquiry process and reform agenda. For instance QFF and others have been involved in the "national drought reform" processes and inquiries since 2006 and yet, even after a comprehensive Productivity Commission review and recommendations the reforms have only been partially trialled and there is no government impetus to implement the needed changes.

QFF does not feel it has the expertise to comment on the broad macroeconomic policy settings and specific government programs that the issues paper discussed. However, we do note that "caution" is required when considering labour, capital and insurance markets, because government intervention can lead to unintended consequences.

Which broad-based reforms also offer potential benefits for facilitating adaptation to climate change?

We strongly advocate the provision of information and tools to assist producers to assess the level of climate risk and potential opportunities. Given agriculture's strong history of successfully adapting to climate variability and change, many industries are far more advanced in adaptation practices than are recognised in current government policies and initiatives.

Some potential ways agriculture could assist include:

Strengthening price signals – eg. Payments for habitat conservation, environmental stewardship etc.

Incentive schemes to assist with financial costs of adaptation taking account of many successful models that industry and Government have partnered on in the past such as Rural Water Use Efficiency programs and the Reef Rescue program.

Minimising transaction costs.

Review ability of existing regulations to limit adaptation actions.

Future policy development processes should include analyses of potential implications on climate adaptation, resulting in a *climate adaptation statement* (similar to climate impact statement).

What kinds of information are already provided by governments to help individuals or businesses to understand risks? Is there a case for more government provision of climate-related information, or to disseminate this differently?

Yes. Despite the existing government investment in climate research, the outputs are not particularly relevant for on-farm adaptation actions.

- The research needs to be demand-driven
- The resulting information must address relevant climate parameters (such as the number of heat stress days or chilling hours) rather than just mean temperatures
- The information must enable the estimation of climate change risk for different crops and regions.
- The information must support the development of appropriate adaptation practices and strategies.
- Outputs should be accompanied by analyses of the relative costs and benefits of alternative actions (including doing nothing).

Again however, QFF suggests caution in the provision of these by government and agrees with the issues paper suggestion that NDRRA interventions should not dilute or crowd out private risk management activities. We would also caution about the linkages between climate change and seasonal year to year weather variations where the “science skill” is still underdeveloped.

Are there significant overlaps or inconsistencies between the adaptation policies of different levels of government? If so, what are these and what problems might they cause for effective adaptation? Alternatively, where differences exist, are there good examples of cooperative arrangements that could be adopted more broadly?

Yes. Although none of the policies appear to offer any concrete solutions, there is significant overlap among the jurisdictions leading to inefficiencies.

Is there a need to alter policy responsibilities (or clarify responsibilities) across the different levels of government in order to facilitate adaptation?

Yes, to improve efficiency and remove uncertainty for industry.

Are local governments adequately resourced and equipped to respond to climate change and implement policies developed by state and territory governments?

No

What are the most appropriate governance arrangements for overseeing adaptation responses at the local level?

Given our criticism of the arrangements at the State and Federal level, QFF would suggest it is too early to determine the most appropriate local arrangements but we would welcome further discussion on this point.

5. References

1. QFF (2008). A Farmer's Guide to Climate Change in Queensland.
2. Various submissions can be found at www.qff.org.au and www.growcom.com.au