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The Commissioners, c/-The Officer in Charge
Barriers to Effective Climate Change Adaptation
Productivity Commission Inquiry
LB2 Collins Street
Melbourne, Victoria 8003 6 June 2012

Dear Commissioners,

Draft Report: Barriers to Effective Climate Change Adaptation

In reference to the Draft Report on Barriers to Effective Climate Change Adaptation (BECCA) I am writing with some comments about the Report. By way of background our company is approaching conclusion (with a Draft Report completed) of a research project on food security, risk management and adaptation to climate change[1] for the National Climate Change Adaptation Research Facility at Griffith University, supported by the Department of Climate Change and Energy Efficiency. This project, based on more than 36 foreign and local food firm case studies (including regulators), has helped inform the comments made here and which does focus more on adaptation in the food supply chain and the implications for food security. The views expressed in this letter are not necessarily the views of NCCARF.

First, it seems important to recognize that adaptation to climate change is part of a bundle of adaptation or adjustment activities happening constantly, every minute of every day, in response to a myriad of external and internal influences on people and organizations throughout the country. This raises the question of whether there is anything special or unique about adaptation to climate change. Answers to that question will vary but depend ultimately, I believe, on how the influence driving the adaptation has effect on or has potential to have effect on the objectives of people and organizations. If there is little influence on objectives expect less effort into adaptation and conversely if there is large influence then expect a large effort into adaptation. Improved risk management is one way of adapting to uncertainty and that raise the question of identifying areas of uncertainty and measures for control. In our research project the case study respondents have rated regulatory uncertainty and climate change uncertainty as areas of most concern to their risk management (along with market and currency risk).

Responses to uncertainty can become muted when the signals or warnings to adapt are extremely uncertain. We agree with the Draft Report's preference for a risk management approach to adaptation because it has potential to improve control of uncertainty at an individual level and help people and organizations achieve their objectives in a way that can be matched to their tolerance and appetite for risk.

Adaptation can, however, also become muted or modified when people and organizations become desensitized to a negative or positive stimulus. This may happen with excessive exposure to a stimulus or a group of similar stimuli that subsequently are shown to be not that relevant or where the stimuli can be avoided. For this reason it is important to recognize the influence of correlated factors of influence that may have little influence in isolation but a larger influence when bundled together. An example is the impact of regulations on people and organization's incentive to adapt. By itself one regulation may have little impact and the aim of the regulation may be achieved without any

[1] The formal title of the research report for this project is 'Australian Food Security: Impact of Climate Change for Risk Management: How prepared are Australian food industry leaders?'

unintended side-effects. When, however, a large number of regulations exist the unintended side-effects may accumulate and at some point outweigh the positive impact. For this reason it is important for the regulatory and legislative development process to be subject to a risk management process in the same way as the targets of the regulation.

If the risk management approach is to have the beneficial impact intended then consistency is required and that means regulations and legislation also require a risk management approach to their design and implementation because of their influence on individuals and organization's behaviour. Otherwise the risk management impact is governed by the influence of the weakest link in the risk management chain. In these circumstances we may find people and organization making an exit from an industry or region to avoid exposure to an uncontrolled regulatory risk. Sometimes that may be beneficial, other times a loss to efficient allocation of resources.

In view of the importance placed on risk management in BECCA it seems important to recognize that uncertainty can be tackled or controlled (to some extent) by direct action on the source of uncertainty (e.g. climate change or the regulatory environment) and by direct action on the activities that expose an individual or organization to a particular risk.

1. **Systemic risk.** The Draft Report states that 'within limits, the impacts of gradual climate change should be manageable. Few systemic barriers to climate change adaptation have been identified and Australians have a long history of coping with climate variability and structural change'.

There are three questions raised around this statement: systemic barriers; systemic risk; and what happens when events happen outside 'limits' ('extreme events').

a.) In regard to **systemic barriers** we agree with the comment (page 53) that '…Government regulation has the potential to impact on the adaptation decisions of individuals, businesses, organisations and other levels of government and could impose a barrier where the costs of regulation outweigh the benefits.' The Draft Report, however, doesn't pursue this matter in sufficient detail and concludes there is no case for a systematic review of legislation. As indicated, in our project (Food Security, Risk Management and Climate Change) the respondents rate regulatory (not just food regulations, but also the general regulatory climate) and political uncertainty (alongside climate change uncertainty) as among the most significant barriers to effective risk management and food security. The results of our research mirror those of international forums including the World Economic Forum (ranking Australia at 75th out of 142 countries in terms of regulatory burden) and the World Bank's Cost of Doing Business Database (CODB) (ranking Australia at now 15th in the overall ease of doing business out of 183 countries). In some categories of the CODB the ranking is quite low for a developed country. For example, Australia is ranked 30th for barriers to trade, 53rd for tax payments, 37th for accessing electricity, 42nd for dealing with construction permits and 65th for protecting investors). There are signs of regulatory fatigue (as evidenced by the deteriorating ranking) in Australia and that presents a problem when solutions to the regulatory burden require substantial reform including probably elimination and modification of regulations to reduce the burden on targets and bystanders. One of the defining features of the current EU and Euro problems is regulatory paralysis that has stifled the incentives to adjust to stimuli outside the regulatory rules. Several other countries are responding to regulatory paralysis with new programs. For example, the UK has established the 'Red Tape Challenge'[2], the US has brought in more vigorous leadership to the Office of Information

[2] The 'Red Tape Challenge' is based on the following background justification as described by the UK Government: " Good regulation is a good thing. It protects consumers, employees and the environment, it helps build a more fair society and can even save lives. But over the years, regulations – and the inspections and bureaucracy that go with them – have piled up and up. This has hurt business, doing real damage to our economy. And it's done harm to our society too. When people are confronted by a raft of regulations whenever they try to volunteer or play a bigger part in their neighbourhood, they begin to think they shouldn't bother…Every few weeks we're publishing the regulations affecting one specific sector or industry – from retail to hospitality to construction. And throughout the process we're publishing the general regulations that cut across all sectors – from rules on equality to those on employment. All these regulations will be open for your comments. So if you

and Regulatory Affairs and Japan has a heightened sense of priority in the Council for the Promotion of Regulatory Reform. There are some signs of improving risk-based regulation in Australia at a State level.3

One of the reasons the regulatory burden has grown to the point of threatening competitiveness and adaptation to climate change is that legislation and regulations in Australia are not consistently subject to risk assessment. This means the burden of risk can be shifted, perhaps unintentionally, to people and organizations less able to manage or absorb that risk. In turn, these people and organizations may elect to remove their exposure to the underlying uncertainty or reduce it through improved risk management, but neither of these responses may be optimal in terms of efficient use of resources. Risk based regulation across all tiers of government has potential to improve the regulatory climate but more is needed and in the not too distant future, including modification of the conclusion in the Draft Report that a 'systematic review of legislation and regulation to identify impediments to adaptation would not be justified…' It's an anomaly in the Draft Report to suggest improved risk management for individuals, businesses and local government but to leave the regulatory and legislative area out of examination. In our view, review of risk management used in design and enforcement of regulations and legislation is justified because in its present state the regulatory climate is emerging as a systemic barrier to adaptation in not just the food industry but the general economy and not just to climate change but adaptation generally. That is, the overall regulatory burden is a threat to adaptation to climate change. It's important not to be deceived by the resource price driven terms of trade bank of capital investment projects as a sign everything is perfect about the Australian investment climate. The impact of regulations and legislation has to be seen in terms of the wider context and the future outlook and where the country might be if the terms of trade corrects which now seems more likely than not. The Draft Report has context recognized properly in the risk management box (page 203) but context includes internal and external influences including interactions with the current environment and other influences on adaptation. The impact of regulations and legislations also affects different industries, enterprises and individuals in different ways and intensities. This doesn't seem to be recognized fully in the Draft Report which means the urgency is lost.

It's recommended that in view of the growing regulatory burden in Australia there be a systematic review of risk management practices and principles used to design and implement legislation and regulations with a view to identifying impediments to adaptation at an industry (including but not limited to the agricultural and food industry) and regional level. Regulatory review measures being adopted in other countries like the UK's 'Red Tape Challenge' should be examined for application in Australia.

b.) In regard to **systemic risk** it is this area where more attention is required to ensure Australia doesn't follow the systemic risk prone path taken by the finance sector. Systemic risk is non-diversifiable risk, driven by aggregate uncertainty which might arise from extreme events including major climate shifts that may affect resources, general income levels, distribution of income, savings and the macro-economic environment. Our Draft Report expresses some concern about systemic risk affecting the food industry. It's possibly a small risk, but with potential for a major impact.

Our Draft Report states: "Looking further ahead there are mixed indicators arising from growth in population and per-capita consumption of food; uncertainty about the terms of trade; emission reduction commitments and incentives to switch land-use for increased sequestration; uncertain extreme climatic events; increasing resource constraints (especially fuel and oil); soil degradation; biodiversity preservation demands; lower R&D expenditure; export commitments to help sustain global food security; incentives to switch land use from food to energy production; threats of food-borne infectious disease outbreaks; and growth of foreign government owned investment in land and water that can divert production away from

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own a shop, if you're running a small business, if you're a volunteer who is fed up with pointless or outdated rules – get online and tell us… http://www.redtapechallenge.cabinetoffice.gov.uk/about/

[3] Peterson D. and Fensling S. 'Risk-Based Regulation: Good Practice and Lessons for the Victorian Context', Conference Paper presented to the Victorian Competition and Efficiency Commission Regulatory Conference, Melbourne, April 2012

traditional market channels. By themselves none of these risks are likely to be cause for concern about food security. The real risk is from a systemic convergence of negative external shocks including the re-emergence of an extended drought overlaid by longer term climate change. It's equally important to recognise there is also the risk of a convergence of several positive external shocks including better than expected climate change impacts, higher productivity growth, lower population growth, lower per-capita food consumption and better than expected adaptation to food-borne illnesses. This alternative risk scenario could actually lead to lower commodity and food prices, increased adjustment pressure at the production level but improved food security and welfare for consumers. Growth in productivity is one market driven strategy for dealing with both extremes of uncertainty.

The capacity of the Australian food industry to adapt to the uncertainties that lay ahead is being constrained by three major influences:

● Patchy evidence that uncertainty is being managed with best risk management practices in either public or private sector organisations.

● High burden of regulation.

● Uncertainty about climate change impacts and lack of confidence in climate change impact projections".

In responding to these constraints it's recognized that the regulatory environment has an important role to play in protecting and improving welfare, security, safety, sustainability and society generally. At the same time it's equally important to recognize that balance is important to avoid the regulatory environment undermining its own objectives. This is the basic reason for recommending *'a systematic review of risk management practices and principles used to design and implement legislation and regulations.'*

c.) **Extreme events**. The IPCC states that '..an extreme weather event is an event that is rare within its statistical reference distribution at a particular place, normally defined as rare as or rarer than the 10th or 90th percentile. By definition, the characteristics of what is called extreme weather may vary from place to place. An extreme climate event is an average of a number of weather events over a certain period of time, an average which is itself extreme (e.g. rainfall over a season)'.

Extreme events may be defined more generically to include weather, climate change and other external influences of an uncertain nature.

If it's accepted that the burden of adaptation to climate change will be borne by individuals and organizations in the normal course of living and going about business and everyday activities it becomes even more important to improve capacity to manage risk, preserve or improve resilience and enable business continuity. For this reason it would be useful to build skills and capacity. There are several options for dealing with this requirement. First, just leave the market to sort it out with people and organizations to build their own skills in risk management under the normal market incentives. Alternatively, there could be a program of direct intervention to provide training and technical assistance in building risk management, resilience and business continuity skills. The case for government intervention for skills and training would be based on market failure in delivering adaptation at sufficient speed and in providing skills that facilitate positive adaptation. If those affected by climate change adjust simply out of the industry or by winding down investment that will not necessarily produce a result that's efficient or effective. In addition, there would be advantages in public organizations quickly becoming familiar with the demands of risk based regulations and running organizations under a risk management framework.

It's recommended there be a risk management training program for trainers (both private and public) in risk management with specific attention to developing skills to comply with the new ISO standards for risk management, resilience and continuity management.

2. Infrastructure and adaptation

In our study of 'food security, risk management and adaptation to climate change' many respondents indicated infrastructure is a risk with likely frequent failure and a major impact on their organisation's value within the next 10 years. The food industry is quite dependent on transport (road, rail, sea and air) infrastructure for delivering commodities as well as electricity for storage. We received some evidence that interventions in support of competition regulations had adversely affected cooperative activities between firms in concentrated sub-sectors during extreme events (e.g. floods) and in markets where world class logistics are required for distribution and storage. These results suggest it may be necessary, in the interests of adaptation, to relax standard competition rules and regulations during extreme events.

The Draft Report describes the Australian Government's *Critical Infrastructure Resilience Strategy* including the Critical Infrastructure Program for Modeling and Analysis (CIPMA), noting that food and health sectors are not included in CIPMA. We believe this is an anomaly and food and health should be included in CIPMA to gain insights in to flow-on impacts of disruptions to critical infrastructure for delivery of food and health services.

Government spokespersons make regular comments about public private partnerships (PPPs) being the solution to Australia's infrastructure investment requirements. Theoretically PPPs should enable infrastructure project risk to be reduced by bringing together the risk management skills of the public and private sector and leaving residual risks with the party best able to manage them. The empirical reality, however, is that PPPs have a patchy performance record in Australia due to a number of factors including high costs of tendering[4]. There are other reasons including inability to recognize the best risk owner and when and where to shift risk. In addition, PPPs tend to work better with larger projects due to economies of scale impacts. But even more importantly the investment climate has to be favourable.

Australia is ranked not that well at 37 out of 142 countries on the World Economic Forum's competitiveness tables in terms of the overall quality of infrastructure. For roads the ranking is 34th, railroads 28th, port 40th, electricity supply 33rd and air transport 29th.

The impact of the quality of infrastructure affects industries and consumers differently. It can expose the vulnerability of some stakeholders that are highly dependent on that infrastructure. That's the main reason we have recommended a priority for infrastructure affecting the Australian food industry.

It's recommended there should be a detailed examination of the infrastructure bottlenecks affecting or with potential to affect Australian food security including identification of priorities for development across all States and Territories. Food and health should be included in CIPMA to gain insights in to flow-on impacts of disruptions to a critical infrastructure

3. Real options and limitations

The Draft Report places significant confidence in the use of real options for dealing with the uncertainty of climate change:

"The 'real options' approach can help to identify reform options that are likely to increase the wellbeing of the community. This approach recognises that if uncertainty about the benefits of climate change adaptation is likely to reduce over time, there can be benefits in deferring costly or irreversible

[4] Van Grieken L. and Morgan-Payler 2012. 'Australia: Improving PPP tender processes and procurement'. Norton Rose, Melbourne

actions until there is confidence that the benefits will exceed the costs. In the meantime, the priority should be to identify low-cost measures to address immediate concerns".

There are, however, limitations to the use of real options in capital investment projects and it's vital they be recognized. The Draft Report is too uncritical of the limitations of real options and too prescriptive for them to be a solution for managing the risks of climate change.

Among the problems with real options is that they don't have the same flexibility to be terminated as is found with market driven financial options. This means the value of the option depends very much on the culture, discipline and management rigor of the organization holding that option and their willingness to execute the option. This can be a problem for organizations with less than best practice management standards and excessive political influence, a situation not uncommon to many public organizations and for that matter PPPs. Moreover, our research shows the general quality of risk management in the Australian food industry, as one example, is somewhat patchy and not just with organizations having informal risk management systems. The option or flexibility to delay, expand or terminate a project under real options is more conceptual for many public infrastructure projects because the information often remains uncertain. Furthermore, in regard to adaptation, real options may simply provide a way or excuse for not embarking on much needed transformation because of a liberal interpretation of 'uncertainty' about the pay-offs, remembering that the long-run is basically a series of short-run events and experiences. Nevertheless, we recognize real options have potential value as a tool for treatment of uncertainty and managing risks. They are, however, a tool, among others, that fits best within the ISO 31000 risk management framework (Box 10.4) and would be best placed in this framework, rather than being a prescribed tool for management of and adaptation to climate change. Other tools include the capital asset pricing model and discounted cash flow, despite their limitations in dealing with uncertainty.

It's recommended real options be recommended as one of the tools available for use within the ISO 31000 framework but not as a prescribed tool.

4. Conclusions

Adaptation to climate change is part of a bundle of adaptation activities happening continuously, in response to a myriad of external and internal influences on people and organizations throughout the country. Most adjustment takes place by people and organizations throughout their normal working lives. There is no best fit situation for any adjustment situation. They are all different and require a diverse range of tools and methods to suit the circumstances of that situation. For this reason a contingency approach is likely to provide the best situation, that is, one that is governed by the objectives, strategies and culture of the organization with risk management used to help that process. This project on climate change adaptation provides a unique opportunity to introduce risk management as a preferred way of dealing with climate change. In that respect it's important for the public (including the regulatory sector) and private sector to both embrace risk management as a preferred way of dealing with climate change. Any reluctance to not review (in part or totally) in some way the burden of regulation now evident in Australia will almost certainly help sustain the burden of regulation and diminish the capacity of people and organizations to adapt to climate change.

Sincerely

David Michael (Manager).