

## Role of Government

7.1 In their joint submission to the inquiry, the Department of Agriculture, Fisheries and Forestry and the Department of Climate Change outlined the Australian Government's response to climate change:

Many farmers are testing and using different farming practices so their businesses are better able to withstand drought and other extreme events. However, this will not be sufficient to manage the future impacts of climate change, and farmers will need support and guidance to do this.

Coordinated national effort by governments, agriculture industries, regions and individual producers will be required to put in place sound climate change strategies to ensure that agriculture is able to effectively manage the risks associated with climate change.

The Australian Government's response to climate change adaptation in agriculture is therefore to focus on providing fundamental information and knowledge, and the decision support tools that will allow farmers and rural industries to manage the risks of climate change.

This reflects the government's preference for markets to operate with minimal intervention, concentrating its role on situations where there is market failure, where there is a clear need to intervene to protect or maintain a public good, or where there is a high risk to assets of national significance.<sup>1</sup>

7.2 The submission further noted:

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<sup>1</sup> DAFF/DCC, Submission no. 70, p. 2.

Industry is best placed to respond to market drivers. Governments' responsibility is to ensure consistency in policies, regulation and incentives to facilitate adaptation, particularly so that these do not inhibit market signals or encourage maladaptation.<sup>2</sup>

7.3 This emphasis on providing a broad policy framework, creating a regulatory environment in which market driven responses can flourish, and intervening to correct market failure was also reflected in the submissions of various State Governments.

7.4 In its submission, the Tasmanian Government stated:

In summary, governments' role is to provide policy settings that assist businesses, communities and individuals to adapt to the impacts of climate change, and to take account of these impacts when making decisions about the provision of public goods and management of public assets.

It is crucial that policies reflect the 'triple bottom line' – economic, social and environmental – in order to sustain the agricultural sector.<sup>3</sup>

7.5 In his submission, the Minister for Agriculture, Food and Forestry, Western Australia, noted:

Government has a role in researching and communicating the implications of climate change. It needs to devise response strategies for the short term and long term. It needs to support industries and farming communities with information to enable informed decision making, as well as to develop risk mitigation strategies for extreme events.<sup>4</sup>

7.6 The submission continued:

The Western Australian Government has a role in assisting agriculture and forestry to adapt through:

- Acting as an "information broker" to both translate and integrate climate change implications and provide guidance on management responses;
- Undertaking research and development that will maintain or increase productivity in a changing climate; and

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2 DAFF/DCC, Submission no. 70, p. 8.

3 Tasmanian Government, Submission no. 57, p. 3.

4 Minister for Agriculture, Food and Forestry, Western Australia, Submission no. 61, p. 1.

- Ensuring land use planning and regulation takes into account climate change projections to maintain sustainable and profitable agricultural and forestry production while protecting and maintaining the natural resource base.<sup>5</sup>

7.7 Similarly, the RM Consulting Group saw the role of government as one of facilitating rather than creating change, creating the conditions for successful adaptation rather than actually driving it:

Considering the areas in which farmers need assistance, there is a strong rationale for governments to invest in research and development of new technologies and practices and sectoral and regional information of changes to farmers' environment, communities and regions. In the case of new technologies and practices, research of these is clearly a public good. So too is information regarding how the physical and community environment farmers operate in will change. In fact, government is the only party that can inform farmers as to what is likely to happen to key government services in the future.

7.8 The Committee notes RM Consulting Group's observation that the rationale for assisting farmers with providing relevant and useful information and assisting them in streamlining their decision making processes is less clear cut. Furthermore, the Committee agrees that 'the case of climate change' raises particular challenges, in that 'past rules of thumb may no longer be relevant.' RM Consulting Group notes that

... farmers are also likely to benefit significantly by developing better systems for managing information, managing their finances and their business, and making decisions. On balance, there is a role for government in developing programs and policies to assist farmers in these areas, but the cost of such programs should be shared by the farmers themselves.<sup>6</sup>

7.9 In its submission, CCRSPI outlined the role of government in facilitating the adaptation of communities and industries – including facilitating the use of migrant workers in downstream processing:

There is a role for government in assisting individuals and communities to transition from declining industries to emerging ones, while minimising social dislocation and dysfunction.

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5 Minister for Agriculture and Food: Forestry, Western Australia, Submission no. 61, p. 2.

6 RM Consulting Group, Submission no. 29, pp. 9-10.

Less reliable production associated with a more variable climate is likely to reduce returns to capital and increase the difficulties associated with maintaining, operating and staffing processing infrastructure. The cost of future capital investments will probably rise in response to these risks.

Downstream processing of agricultural products, especially animal products, tends to be labour intensive. Processing facilities that incorporate greater flexibility or that use less capital tend to be more labour intensive. While capital costs are high, agricultural labour is scarce...

The Commonwealth's 457 skilled work visas and *Australian Pacific Seasonal Workers Pilot Scheme* offer suitable alternatives for labour provision to some primary industries. There is clearly a role for Government in providing appropriate regulatory frameworks to ensure these programs benefit the wealth and wellbeing of all Australians without exploiting the migrant labour force or their communities. Rural RDE networks have a role in providing the training necessary to ensure farmers and agribusiness are equipped to access and effectively work with these new labour pools.<sup>7</sup>

#### 7.10 CCRSPI continued:

The government has a critical role in assisting Australia's primary industries adapt so they can continue to contribute to the nation's wealth and wellbeing. One way governments can do this is to help correct market failures by –

- addressing information failures through:
  - ⇒ research into new knowledge to strategically filling existing gaps;
  - ⇒ ensuring the existing information is provided to farms and businesses throughout the supply chain in forms they can readily use;
  - ⇒ providing frameworks to better share and utilise information, to reduce transaction costs associated with knowledge generation, distribution and utilisation;
- providing appropriate regulatory frameworks to enable the efficient operation of markets;

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7 CCRSPI, Submission no. 10, p. 10.

- correcting externalities relating to the aspects of goods or services that are not adequately captured in their market prices by:
  - ⇒ subsidising the provision of goods and services which contain a significant element of public good e.g. education and biodiversity;
  - ⇒ pricing or limiting negative externalities associated with the provision of goods or services e.g. pollution and food safety;
  - ⇒ assisting in the commercialisation of new or infant industries - particularly those which have considerable potential for public good e.g. biotechnology and distributed renewable energy;
- providing public goods and/or shared infrastructure where a market rent cannot be efficiently levied or captured by an individual firm or entity e.g. biosecurity.<sup>8</sup>

7.11 CCRSPI endorsed the use of co-regulatory frameworks for facilitating adaptation:

Co-regulatory frameworks such as farm or environmental management systems (EMS) provide governments with a mechanism to achieve widespread and ongoing adoption of best management practices (BMPs) without excessive regulatory costs e.g. Cotton BMP program, *Pathways to Industry EMS* program.<sup>9</sup>

7.12 In its submission, the South Australian Farmers Federation urged a partnership between government and industry focused on innovation:

Regardless of activities undertaken to mitigate carbon emissions, agriculture will need to adapt to a changing climate. Governments have a role in working with industry to:

1. Develop stewardship payments for protection and enhancement of native vegetation or water quality improvements,
2. Develop 'new' industries such as power generation from piggery waste,
3. Provide research funding into conversion of urban and animal waste to biochar which may provide an alternative to fertiliser use in horticulture and cropping systems,
4. Produce more agricultural product with less water, and

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8 CCRSPI, Submission no. 10, pp. 11-12.

9 CCRSPI, Submission no. 10, p. 13.

5. Develop programs to monitor changes in the natural resources, eg monitor the spread of weeds.<sup>10</sup>

## **Australian government policy initiatives**

7.13 In their joint submission to the inquiry, the Department of Agriculture, Fisheries and Forestry and the Department of Climate Change outlined the policy framework governing agriculture and climate change. The submission stated:

The Australian Government has adopted a new National Climate Change Science Framework which sets out climate change research priorities for the coming decade. The focus of the Framework is fundamental climate system science, which provides essential system knowledge to understand climate change impacts, develop adaptation strategies, and manage carbon emissions. The scientific research proposed under the Framework is designed to interact closely with the adaptation response agenda, with mitigation science and technology, and with efforts to develop more effective policy to deal with the climate change challenge.

The Framework will deliver improved higher resolution predictions of future climate, knowledge which is central to the development of adaptation policy for agriculture. There will be specific focus on future rainfall, evaporation and other climate features that affect our water resources and dry land agriculture. The Framework will also deliver improved knowledge on extreme events such as drought, heatwaves, storms and fire weather, information which will assist in policy development around the management of carbon in the landscape.<sup>11</sup>

7.14 The submission continued:

There is scope to substantially enhance the Framework. In particular, the capacity of the agriculture sector to plan for climate change will require extension of our predictive capability for weather and climate from short term forecasts through to monthly, seasonal and decadal predictions of climate. There is also a need for research infrastructure investments, including the renewal and maintenance of supercomputing, ocean research vessels and earth

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10 South Australian Farmers Federation, Submission no. 21, p. 5.

11 DAFF/DCC, Submission no. 70, p. 8.

observation networks to underpin this work. The outcomes from these investments would allow farmers to factor the longer-term climate and weather predictions into farm planning and so be better prepared for unusual and extreme events.<sup>12</sup>

7.15 The submission also outlined the National Climate Change Adaptation Framework (NCCAF), which:

...recognises the government has an important role in establishing optimal conditions for adaptation across Australia, including in the agricultural sector. Consistent with the Framework, the government is assisting agriculture adapt to climate change by addressing market failures. Investment is being made in research that can deliver information needed to assist the sector manage future climate risk through the establishment of a new National Climate Change Adaptation Research Facility ([www.nccarf.edu.au](http://www.nccarf.edu.au)) and an Adaptation Research Flagship at CSIRO ([www.csiro.au/org/ClimateAdaptationFlagship.html](http://www.csiro.au/org/ClimateAdaptationFlagship.html)). Information needs encompass climate change science to deliver improved projections at scales and timeframes relevant to producers; decision support tools that inform a range of production systems; and adaptation options readily adoptable by producers to manage climate risk.<sup>13</sup>

7.16 In evidence before the Committee, Mr Chris Johnston, Assistant Secretary, Adaptation Innovation Branch, DCC, elaborated on the work of NCCARF:

The NCCARF has eight themes of which primary industries is one and they have established a research network under each of those themes, including primary industries, and that is led by Professor Snow Barlow at the University of Melbourne. They are currently working on a national adaptation research plan for primary industries and we expect to see a consultation draft towards the end of this year with a final currently scheduled to be completed around April or May 2010.<sup>14</sup>

7.17 As part of the Framework,

National Adaptation Research Plans (NARPS) are being developed for areas such as primary industries, water resources and freshwater biodiversity. The NARPS will set out national priorities

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12 DAFF/DCC, Submission no. 70, pp. 8–9.

13 DAFF/DCC, Submission no. 70, p. 9.

14 Mr Chris Johnston, DCC, *Transcript of Evidence*, 28 October 2009, p. 2.

for applied research to underpin the development of Australia's adaptation capability. NARPS will have a central role in guiding investment in R&D activities.<sup>15</sup>

7.18 Another major policy initiative is Australia's Farming Future:

The Australia's Farming Future (AFF) initiative is the government's key initiative for assisting primary producers adapt and adjust to the challenges of climate change. The initiative consists of several elements that help build adaptable and resilient producers and industries and strengthen their ability to manage climate change into the future.<sup>16</sup>

7.19 The initiative includes the Climate Change Research Program:

The \$46.2 million Climate Change Research Program is funding research projects and on-farm demonstrations to help prepare Australia's primary industries for climate change and build the resilience of the agricultural sector into the future. Initially focusing on reducing greenhouse pollution, better soil management and climate change adaptation, the program will involve projects that provide practical management solutions to farmers and industries...<sup>17</sup>

To June 2009, the Government has committed \$37.9 million for research under the Climate Change Research Program, leveraging \$61.7 million from partners, including state government, industry and research organisations. This includes:

- the Soil Carbon Research Program (\$9.6 million from the program over four years as part of a \$20 million package) will be established in all states and the Northern Territory to investigate carbon changes in soil across Australia in response to farm management practices. A separate project has been established for biochar research (\$1.4 million from the program over three years from 2009–10)
- the Nitrous Oxide Research Program (\$4.7 million from the program over four years as part of a \$11.9 million package) will develop a national system for measuring nitrous oxide emissions from Australia's agricultural soils
- the Reducing Emissions from Livestock Research Program (\$11.3 million from the program over four years as part of a

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15 DAFF/DCC, Submission no. 70, p. 9.

16 DAFF/DCC, Submission no. 70, p. 10.

17 DAFF/DCC, Submission no. 70, p. 10.



\$28.7 million package) focuses on reducing methane emissions from livestock

- the Adaptation Research Program (\$11 million over four years as part of a \$37.6 million package) will develop knowledge and management strategies to assist primary producers to adapt to a changing climate while promoting productivity.<sup>18</sup>

7.20 FarmReady is a program targeted principally at the development and provision of training activities and resources:

Within the Australia's Farming Future framework, the FarmReady program provides \$26.5 million over four years to improve adoption of risk management and business management skills, increase adoption of new technologies and best practice management to enable primary producers, Indigenous land managers and agricultural industries to adapt and respond to the impacts of climate change. The program runs until 30 June 2012 and consists of two separate elements:

- FarmReady Reimbursement Grants of up to \$1500 per person per financial year to individual primary producers and Indigenous land managers to attend approved climate change training activities
- FarmReady Industry Grants to industry organisations of up to \$80 000 per financial year to industry organisations, farming groups and natural resource management groups to undertake projects that will enable their members to adapt to the impacts of climate change.

Under the first round of the FarmReady Industry Grants, \$6.3 million has been provided for 46 projects.<sup>19</sup>

7.21 In evidence before the Committee, Mr Allen Grant, Executive Manager, Agricultural Productivity Division, DAFF, elaborated on the components of FarmReady:

One component allows individual farmers to attend training courses that are directed at farm business practices and provide specific education and learning about how farmers can adapt their own circumstances to variations in climate change. Courses would include some technical aspects of adaptation but there would also be courses directed at a range of business skills and broader management skills and abilities. Under that program, farmers can

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18 DAFF/DCC, Submission no. 70, p. 10.

19 DAFF/DCC, Submission no. 70, p. 11.

receive up to a \$1,500 repayment for expenses incurred in attending those courses. That is the reimbursement side of it.

...The second component of FarmReady provides industry groups, including Landcare groups and landholder groups – that is, groups of farmers or landholders who might just band together to form a group – up to \$80 000 to enable them to develop tools, education facilities and communication facilities through which they can then transfer those skills and techniques to the farmers within their area. They can develop capacities and build systems and learning techniques... communication and on-the-ground techniques so that they can demonstrate those to the other people within their communities or to the groups that they represent. It is \$80 000 to groups around the country, and that is on a competitive basis. There is a call for expressions of interest for grants under FarmReady and there is a process by which those grants are determined and agreed.<sup>20</sup>

7.22 Another program promotes community networking and capacity building:

Community Networks and Capacity Building will build on the leadership and representative capacity of women, youth, Indigenous Australians and people from culturally and linguistically diverse backgrounds to strengthen community resilience and the productivity of primary industries. With increased access to tools and resources, these target groups can improve their leadership and management skills, increase participation in industry and more effectively contribute to government and industry decision making.<sup>21</sup>

7.23 Mr Grant explained:

There is a small program under Australia's Farming Future which is a community networks and capacity-building program focused on increasing the leadership and representative capacity of target groups. The target groups include women, youth, Indigenous Australians and people from culturally and linguistically diverse backgrounds. It is trying to strengthen primary industry productivity and build rural and regional community resilience in a changing climate. That is a small program that is sort of directed

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20 Mr Allen Grant, DAFF, *Transcript of Evidence*, 28 October 2009, pp. 4-5.

21 DAFF/DCC, Submission no. 70, p. 11.

in that path. I think \$2 million has been allocated to that program in 2009-10.<sup>22</sup>

7.24 Another program, providing adjustment assistance for farmers experiencing financial hardship is the Climate Change Adjustment Program:

The Climate Change Adjustment Program is assisting low income, low asset farmers who may be affected by climate change, including those experiencing financial hardship caused by drought. The program provides financial assistance to farmers with the aim of adjusting their farm business to manage the impacts of climate change.

Assistance under the program includes:

- Adjustment advice and training grants of up to \$5 500 – available for specialised professional advice (where the advice is linked to managing the impacts of climate change) and training
- Re-establishment assistance of up to \$150 000 – enables farmers to exit the industry and pursue other employment opportunities or retire.<sup>23</sup>

7.25 Another important program is the Rural Financial Counselling Service:

The Program provides grants to regional and state level not-for-profit organisations to employ rural financial counsellors to provide free and confidential financial counselling services to farmers, fishers and small rural businesses who are in financial difficulty and have no access to other forms of impartial support.

The objectives of the Program are to:

- make sure clients have access to financial information, options, decision support and referral services
- allow clients to consider information and options to implement decisions to manage industry adjustment and climate change
- provide a needs-based service that is free, effective, responsive and flexible.<sup>24</sup>

7.26 Finally, an important part of the policy framework for delivering outcomes at a regional and local level is Caring for our Country:

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22 Mr Allen Grant, DAFF, *Transcript of Evidence*, 28 October 2009, p. 3.

23 DAFF/DCC, Submission no. 70, p. 11.

24 DAFF/DCC, Submission no. 70, pp. 11–12.

Caring for our Country commenced on 1 July 2008 and aims to develop an environment that is healthier, better protected, well managed, resilient, and provides essential ecosystem services in a changing climate.

The Caring for our Country outcomes contribute to climate change adaptation by improving environmental management and assisting farmers and land managers to adopt sustainable farm practices.

Sustainable Farm Practices is one of six priority investment areas under Caring for our Country. The 2009–10 sustainable farm practices targets aim to increase the adoption of sustainable farm practices such as those that maintain or increase soil carbon, groundcover and vegetation on-farm as well as reduce the risk of erosion and soil acidification.

From 1 July 2008, the activities of the former National Landcare Program have been encompassed in the government's Caring for our Country initiative. Most landcare activity is undertaken within the sustainable farming practices priority area.<sup>25</sup>

## Detailed critique of policy initiatives

7.27 In its submission to the inquiry, the Future Farm Industries CRC delivered an extensive critique of current policy initiatives. Starting with the Government's current approach, the submission stated:

The Commonwealth Government has two R&D funding initiatives relevant to adaptation to climate change. The Primary Industries Adaptation Research Network (PI ARN) is one of eight themes funded in the National Climate Change Adaptation Research Facility (NCCARF). It is managed by Land and Water Australia and linked to the Climate Change Research Strategy for Primary Industries (CCRSPI), which is a joint initiative of RDCs, the Primary Industries Steering Committee (PISC) and CSIRO. Active network building, coordination of research investment and further capacity building is about to occur. Adaptation is one of three themes in the Climate Change Research Program (CCRP) (others are emissions reduction and soil carbon). Decisions on projects are rolling out now. These two initiatives (PI ARN, CCRP) are in

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25 DAFF/DCC, Submission no. 70, p. 12.

different ministerial portfolios (Climate Change; Agriculture, Fisheries and Forestry).

The Government has a policy position on how agriculture will be treated under the proposed Carbon Pollution Reduction Scheme (CPRS). It will decide in 2013 whether and how agriculture will be covered with entry into CPRS, if it occurs, not before 2015.

Meanwhile, the Government has made it clear that metrics and technologies for agricultures' emission reduction need to improve. CCRP funding decisions are supporting this priority.

This three-pronged approach looks impressive; however, the threat of policy and program failure is very real. This claim is based on FFI CRC's understanding of how innovation, technological change, research and development and improved outcomes occur in dryland agriculture, and on the poor track record of Commonwealth Government funding programs in getting these outcomes.<sup>26</sup>

- 7.28 The submission identified three critical failings (all of which also relate to the issues raised in Chapter 6). The submission noted:

Farmers' path to adoption of new practices for drought preparedness, climate change adaptation and compliance with emissions reduction measures is much longer than the Government realises...

Investment in R&D is not large enough, not long enough and not sufficiently allocated to new profitable solutions for farmers...

Commonwealth Government agencies administering funding programs for land use change have failed to achieve high rates of adoption by farmers. There is compelling evidence for this, and that a primary reason is lack of profitable options for farmers.<sup>27</sup>

- 7.29 The submission concluded:

There is looming institutional failure with successive Commonwealth government's approaches to investing in sustainable agriculture and natural resource management outcomes. Its programs are dependent on Canberra based officers administering funds to contracted projects. These officers are funds administrators without the authority or technical capability to perform the risk managing investor role. The high number of

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26 Future Farm Industries CRC, Submission no. 67, pp. 4-5.

27 Future Farm Industries CRC, Submission no. 67, pp. 5-6.

consultancies commissioned by Commonwealth agencies provides stark evidence that they are not able to engage the agriculture sector first hand and adopt the more effective partnership approach.

This Government, in particular, understands the importance of tapping science expertise and is prepared to target its funding to institutions where those scientists reside. This is good to a point. However key science institutions (CSIRO, universities) have no path to farmer adoption and limited industry engagement. Farmer behaviour change is not their mandate and there are no accountable paths to adoption activities. State agencies have traditionally had agricultural extension services alongside R&D capacity but these have declined so severely that traditional information sources tapping public good R&D no longer exist. Catchment management authorities and regional NRM bodies are not a substitute. They now face uncertain times, don't have R&D capacity [and] aren't geared for farm-level advice on production solutions. The agribusiness sector has a growing capacity to technically service farmers but can't be expected to carry out public good functions if they don't improve their profit bottom line. Today, farm research groups and farm consultants are the best placed to fill this void, but 'next user' programs such as that of FFI CRC are needed and these are beyond the means of major R&D institutions.<sup>28</sup>

7.30 The solution to the problems outlined above was to make more effective use of existing research infrastructure – the RDCs and CRCs:

RDCs are structured to manage investment more effectively with program managers closer to farmers and industry. CRCs are structured to manage R&D, training and path to adoption, including commercialisation of R&D, in an integrated way.

Both institutional forms have been regularly evaluated and their success and good returns on investment demonstrated. Under the current evaluation framework for RDCs, a randomly selected 32 projects have returned an estimated \$11.00 for each dollar expended, and on the input side each dollar of government funding is matched by \$1.50 from industry (Council of RDC Chairs 2008). The recent evaluation of CRCs by the Productivity Commission, re-working numbers from earlier studies with a

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28 Future Farm Industries CRC, Submission no. 67, pp. 6–7.

more conservative method, estimated that there was an aggregate increase in economic output of 51 cents for every dollar of the Commonwealth's CRC Program funds (O'Kane 2008). Again this is a substantial return on investment.

FFI CRC argues that the Commonwealth reverts to current best practice in how it invests climate change program funds in R&D and path to adoption activities that will improve adaptation to climate change in the longer run through real change in farm businesses. Rather than administer funding programs direct to project managers in the absence of industry-credible program managers, it should put its funds through RDCs. They have a strategy for planning, priority setting and coordination (CCRSPI) and established program managers with science, industry and field experience.

RDCs in turn could follow their best practice in commissioning projects with R&D providers and collaborative ventures such as CRCs that are uniquely set up to combine R&D, path to adoption with commercialisation elements in an environment that fosters innovation and public-private partnerships.

In this way Commonwealth Government investment in drought, climatic variability and climate change outcomes become part of the mainstream innovation, problem-solving, technology development, productivity growth and structural adjustment that has been the basis of Australian agriculture's success over the past 60 years – and no longer an add-on activity.<sup>29</sup>

## Committee conclusions

- 7.31 Notwithstanding the comments of the Future Farm Industries CRC, the Committee believes the current policy framework provides the basis for a comprehensive and sustained response to the challenges of climate variability and climate change within the farm sector. The success of these policies and initiatives, however, will depend upon sustained and consistent application, well-targeted and sustained funding, effective coordination, and a very deliberate focus on the delivery of outcomes on-farm.
- 7.32 As the criticisms of the Future Farm Industries CRC indicate, a sustained and effective response by government, and the delivery of real gains on-

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29 Future Farm Industries CRC, Submission no. 67, p. 7.

farm, cannot be guaranteed. The Committee has received plenty of evidence about the deleterious impacts of short-term funding and sudden changes in policy direction upon outcomes. There appears to be a real disconnect between policy on paper and outcomes on the ground. Governments and bureaucrats need to be aware of this problem and be constantly seeking to address it. While not necessarily endorsing the proposals contained in the Future Farm Industries CRC submission, the Committee certainly commends them to the Government for further consideration.

### **Recommendation 13**

- 7.33 **The Committee recommends that the Australian Government give further consideration to the analysis of government policy and outcomes in the submission to the current inquiry made by the Future Farm Industries CRC, with a view to ensuring the better coordination of research and extension efforts and the delivery of effective policy outcomes.**

## **Facilitating action**

- 7.34 The need to facilitate action in response to climate change was seen as a key role for government in the evidence presented to the Committee. Whether providing financial incentives to undertake specific actions, building capacity at an individual or community level, providing stewardship payments for environmental management, or simply adjusting government regulation to facilitate certain outcomes, a range of actions were identified that could facilitate adaptation.

## **Incentives**

- 7.35 The use of financial incentives was seen as a practical way of facilitating adaptation to climate variability and climate change. In its submission Australian Women in Agriculture stated:

Governments therefore need to clarify and strengthen incentives and schemes to enable households, agriculture and industry to reduce carbon emissions, develop energy self-sufficiency and



manage water in a sustainable manner so that all sectors of Australian society are working together towards sustainability.<sup>30</sup>

7.36 The Committee received a number of suggestions about ways to promote change through financial incentives – a range of options usually targeted at the needs of specific industries or issues, a fact which suggests that targeted incentives will work better than broadly based schemes.

7.37 In its submission, Apple and Pear Australia suggested the use of special loans:

The Apple and Pear Australia Ltd Industry is a capital intensive industry with significant upfront investment required and a lengthy time period between initial investment and returns. The development of a co-contribution scheme whereby growers could have access to funds in the form of low interest loans, growers would have the confidence to implement new technologies that would enable them to become resilient in the changing climate and environment.<sup>31</sup>

7.38 The National Association for Sustainable Agriculture Australia Ltd urged a substantial increase in funding to support organic agriculture:

Federal Government can play an important role in assisting farmers to adapt to climate change by supporting organic agriculture at a major scale and increasing current funding which resides at less than \$500 000 p.a. nation wide to a figure at least 100 times greater in the first instance. This funding should be made available to research organisations with reference to the Organic Federation of Australia, the peak National body for organic agriculture

The key research needs in our view are holistic biophysical studies that are carried out in decentralised locations and that permit farmers and researchers to better understand soils, fertility and organic practices that further enhance crop yields and carbon sequestration.<sup>32</sup>

7.39 In its submission, the Grain Growers Association suggested incentives for better energy efficiency and transport use. It also highlighted the need for better access to rail transport for grain growers as a means of lowering the energy costs of transporting grain:

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30 Australian Women in Agriculture, Submission no. 56, p. 2.

31 Apple and Pear Australia Ltd, Submission no. 36, p. 1.

32 National Association for Sustainable Agriculture Australia Ltd, Submission no. 42, pp. 1-2.

As an example, the current national water reforms include measures to incentivise improved irrigation efficiency on farm through higher technology water delivery systems. Where these systems are replacing gravity fed systems, the energy requirements of these systems is increasing and therefore emissions. However there are no apparent incentives for energy alternatives such as solar, wind or renewable fuel sources which would effectively address this issue.

Another example is the run down in investment in rail and port infrastructure. Rail transport is vastly more efficient in terms of energy than road but successive State Government underinvestment and parochial management has resulted in a transport system with limited capacity which is forcing industry to increasingly rely on road systems. One Government response to climate change adaptation and energy efficiency is to dramatically improve the transport infrastructure to assist growers to access markets using the most efficient methods and potentially increasing the range of products growers might produce if more efficient transport were available.<sup>33</sup>

- 7.40 Dr Christine Jones presented the Committee with a fully fledged incentive scheme, the Green Agriculture Stewardship Scheme, as a means of promoting the benefits of permanent ground cover for soil health, moisture retention and soil carbon sequestration:

The most effective way to generate on-ground change is to actively engage landholders in participatory approaches to innovation and extension. Regenerative land management techniques such as 'yearlong green' represent fundamental redesign and hence are subject to 'resistance to change'.

It is recommended that the Green Agriculture Stewardship Scheme initially target regions which have only short-term annual cover (commonly monoculture) for part of the year and bare ground for the remainder. There are approximately 20 million hectares of land currently used for dryland broadacre cereal cropping (bare summer fallow) and 130 million hectares of grazing land lacking perennial groundcover...

The Green Agriculture Stewardship Scheme will result in the establishment of 100 strategically placed, nation-wide, highly publicised demonstration sites (Green Agriculture Innovation

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33 Grain Growers Association, Submission no. 46, p. 1.

Nodes), showcasing leading edge technologies that restore photosynthetic capacity, reverse soil structural decline, improve carbon biosequestration, increase soil water-holding potential, enhance productivity and increase gross margins per hectare. These technologies have already proved successful and profitable for individual landholders in assisting their adaptation to a warmer, drier climate.

A simple incentive scheme designed to catalyse innovation and fast-track adoption may prove less expensive, easier to manage and have broader application than a top-down prescriptive approach to land management.<sup>34</sup>

- 7.41 In its submission, the Murray Irrigators Support Group advocated the payment of \$10 000 grants to farmers to provide an incentive for the uptake of water saving technology and practices.<sup>35</sup> In evidence before the Committee, Mr John Padman illustrated how such incentive payments could work to bring about rapid change at the farm level:

To do a farm properly you might have to spend \$50 000 to \$100 000. The \$10 000 would be a catalyst. We want to get more research done. As to all the work I have done, I have practically dedicated the last five years to this. I have spent a lot of my own personal money doing that, but I still could not go on to a farm and say, 'You should be watering that bay in two hours' or whatever it is...

Mr Bryant is a typical example. When the \$20 000 came out he was the first one on the phone. I talked to him about it before and he said, 'I'll try a few of those six-foot Padmans.' That is all we had to do. We did not have to say another word to Mr Bryant. He tried it once. That is what can happen. That is catalyst money.<sup>36</sup>

## Capacity building

- 7.42 Another key to responding to climate variability and climate change is building capacity – giving individuals and communities the knowledge and tools to become more resilient and adaptive. In its submission, Australian Women in Agriculture argued for a long-term commitment to community development as part of the response to climate change:

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34 Dr Christine Jones, Submission no. 52, p. 5.

35 Murray Irrigators Support Group, Submission no. 8, p. 5.

36 Mr John Padman, Murray Irrigators Support Group, *Transcript of Evidence*, 3 September 2009, p. 49.

Meaningful change in community attitudes and behaviour requires a diverse approach incorporating information, education, incentives and support. Adherence to the principles of community development, namely: empowerment/ownership of activities by communities; valuing the local knowledge; collective working and encouraging participation and inclusion; balancing process with outcome; being sensitive to cultural/political paradigms; and sustainability/longevity (not just 'blow in/blow out') is particularly important during times of major change and adjustment.

In the context of community development, short term funding and contracts for drought support and rural adjustment services are counterproductive. It takes time to build trust and rapport and networks and partnerships and this social capital can be lost when there is a regime of constant change of staff and programs. A more positive approach is sustainable programs based on evidence and focused on building community capacity to manage social and environmental change and changing business situations.<sup>37</sup>

- 7.43 In their joint submission, Horticulture Australia Council and Horticulture Australia Limited also saw capacity as part of the response to climate change:

Overall, the best defence against future climate change is to continue to develop the capacity and knowledge so that growers can make effective business decisions, minimize risk, and manage our response to current climate variability more effectively. This will ensure both the long-term viability and sustainability of our industry, and continued availability to consumers of fresh and health-giving horticultural outputs.<sup>38</sup>

- 7.44 In its submission, the Australian Institute of Agricultural Science and Technology argued for building capacity in business and management skills:

There is an urgent need to improve the business management skills of farmers – these skills will be crucial in our increasingly deregulated and diverse markets (both buying inputs and selling commodities). The new carbon economy is just one more management skill which farmers will have to learn.<sup>39</sup>

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37 Australian Women in Agriculture, Submission no. 56, p. 2.

38 Horticulture Australia Council and Horticulture Australia Limited, Submission no. 62, p. 3.

39 AIAST, Submission no. 63, p. 3.

7.45 In evidence before the Committee, Dr Nigel Wilhelm, a member of the AIAST, highlighted studies which had demonstrated that business management skills rather than land management skills often made the difference between success or failure in coping with drought:

... the clear message from those studies is that it was not the ability of the farmer to run his farm; it was his ability to run the business. They were the skills that made the difference between an intact business at the end of this dry period compared to the neighbours' ones which were in dire straits. It was not so much their ability to farm the paddocks; it was their ability to manage the business. That message is coming back time and time again... We expect climate change to create generally more adverse conditions in southern Australia and there will still be good years and bad years. It is the ability to respond to those challenging conditions which will help those farming businesses survive. So it is about giving them the tools to make changes quickly in the right direction. That is the major focus.<sup>40</sup>

7.46 A number of submissions focused on the need to support local groups and grower organisations in building capacity. In its submission, Monaro Farming Systems stated:

MFS sees the role of government is to strengthen their support and investment in regional farmer groups and to provide funding support which is accessible to independent, non-Government, member owned and driven groups.

The Federal government could also place more emphasis on facilitating communication and fostering synergistic relationships between local representatives and farmer groups such as MFS and national research bodies (AWI, MLA, GRDC) to provide a forum for information exchange.

By supporting regional projects MFS believes Government will increase the resilience of farm business in the face of increasing climate variability and also encourage a move towards more systems based agriculture. By supporting these type of projects, the government will encourage attitude change, practice change and increased confidence in the rural industry in managing uncertainty in climate and markets thereby moving the industry towards greater self-reliance.<sup>41</sup>

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40 Dr Nigel Wilhelm, AIAST, *Transcript of Evidence*, 18 November 2009, p. 6.

41 Monaro Farming Systems, Submission no. 20, p. 3.

7.47 Likewise, Southern New England Landcare urged support on Landcare groups as a catalyst for action, however:

...to do so requires a long term partnership approach between community and government, whereby government provides secure and ongoing resourcing to allow such organisations to support the community in developing and implementing innovative projects to address climate change.<sup>42</sup>

7.48 In its submission, the Goulburn Broken Catchment Management Authority stated:

The government must ensure that the research, extension and training assist the farming community adapt to climate change through a systems approach (there must be improved understanding of the biophysical and socio-economic systems), ensuring that the information can itself be localised and importantly empowers the community to act.

The government has a role identifying what the likely shocks are, increasing the diversity options available and create an environment for their adoption.

The government has a role in research and devolving the information along with the decision making. It is ultimately the community that will create the resilient systems in the face of climate change, the government must undertake the relevant research and provide the best information possible to facilitate decision making. It must also support regional bodies in devolving information and making information locally relevant.<sup>43</sup>

7.49 The Conservation Agriculture Alliance of Australia and New Zealand also urged support for grower groups as a positive way to facilitate change:

One way government can better support the shift to conservation agriculture is to support not-for-profit organisations that growers themselves support financially through voluntary subscriptions and in-kind contributions of time, skills and resources.<sup>44</sup>

7.50 The Fenner School of Environment and Society, ANU, simply urged a focus on accessible low-technology solutions to climate variability and climate change:

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42 Southern New England Landcare, Submission no. 39, p. 5.

43 Goulburn Broken Catchment Management Authority, Submission no. 44, p. 3.

44 CAAANZ, Submission no. 54, p. 2.

Prioritising inexpensive, flexible, low-tech solutions that are proven to work, and have important synergies with other societal goals, will be a vital first step to truly bring Australian farming systems in line with their natural environment.<sup>45</sup>

- 7.51 In her submission, Ms Rosemary Hook, a grazier, highlighted the need to maintain programs which support access to training and extension, and suggested incentives along the lines of ‘land stewardship’ payments. She noted, however, the need to directly support holistic solutions, not solutions that solved one problem by creating another:

There is a clear need for the development of programs to assist farmers, to be advised by research from social science groups. For example, the Sustainable Farms Project within the Fenner School at ANU, is currently investigating the attitudes of graziers to their farm landscapes – an understanding of such attitudes is vital in designing assistance programs (including financial) to which a *broad spectrum* of farmers will respond.

Successful support programmes, such as assistance provided for farmers to attend holistic management courses (run by HM Educators, RCS and Principal Focus) and to obtain professional farm planning advice, should be continued.

It may be appropriate to provide financial incentives/rewards for implementing practices known to be beneficial, but which do not necessarily require acceptance of climate change per se – the “land stewardship” type payments that have been considered in other contexts.

In funding research which underpins the development of appropriate agricultural systems, the government needs to ensure that whole farm systems and their carbon economy are considered. This is to avoid developments which may have beneficial aspects but which overall are part of or support, carbon expensive farming systems.<sup>46</sup>

## Committee conclusions

- 7.52 Facilitating action at an individual, community and industry level is a key role for Government. It is, of course, axiomatic that Governments should always be aware of the potential impacts of laws and programs on the

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45 Fenner School of Environment and Society, ANU, Submission no. 4, p. 7.

46 Ms Rosemary Hook, Submission no. 47, pp. 3–4.

ability of farmers and industries to adapt to climate variability and climate change. Policies which produce perverse or negative outcomes, or fail to promote positive outcomes, must be adjusted.

- 7.53 The Committee is aware of government programs which provide financial support and incentives for farmers to undertake training and develop their business commercially and environmentally. Opportunities are there for those who wish to take advantage of them. Nonetheless, the Committee believes that there are further opportunities for government to facilitate adaptation through targeted incentives. A number of the suggestions made to the Committee in this vein would seem to offer low cost means for catalysing positive responses to climate variability and climate change.
- 7.54 Lastly, as has already been canvassed in this report, the Committee is supportive of organisations and activities that build resilience and promote adaptation at a local and community level. Again, the Committee is aware of Government support for such activities and organisations. However, the precarious nature of much of this support is a matter of ongoing concern to many. It is perhaps time to place this support on a more permanent and regular footing, thus ensuring that resilience and adaptive capacity are created and sustained into the long term.

#### **Recommendation 14**

- 7.55 **The Committee recommends that the Australian Government, as part of its overall response to issues affecting agriculture and climate change, explore further opportunities to facilitate adaptation to climate variability and climate change through the use of targeted, industry and issue specific, incentives.**

#### **Recommendation 15**

- 7.56 **The Committee recommends that the Australian Government place funding for local and community organisations engaged in the work of supporting farmers in adapting to climate variability and climate change upon a permanent and regular basis.**



## Drought policy

7.57 During the course of the inquiry, the Committee received evidence on drought policy. Much of this evidence concerned the need to alter the way drought relief was provided, directing funds at building resilience within farming communities to better prepare them to survive drought.

7.58 In evidence before the Committee, Mr Geoff Thomas, president of AIAST, commented upon drought relief:

It played its role, but there is no question that it has caused less adjustment than there would otherwise have been. Even some of the people who have received it would admit privately that it probably has not done them a favour. It certainly has not done other farmers in the area a favour because it has reduced their capacity to adjust. So what does one do about it? We are not saying to chop them off at the socks. I might quote this, that we ran a program in the 1980s when I was with the South Australian Department of Agriculture with farmers on the Eyre Peninsula who, because of drought and because of high interest rates and everything else, were in all sorts of trouble. There was an enormous amount of change that occurred. A lot of farmers left simply because we provided adequate services whereby they – not just the farmer but the farm family – could realistically analyse their real situation. We also did things like look at job opportunities in the cities and put them on track with those.

If you do those sorts of very practical things, people will change. The major restriction on that sort of change, of course, is the social pressure – knowing that, if the kids leave, the school closes and everybody suffers. It is a very difficult situation. That is the thing to do rather than continuing with the current system, which I do not think is doing anybody any good.<sup>47</sup>

7.59 In its submission, Australian Pork Limited stated that ‘future drought policy should be aimed at assisting the agricultural sector to adjust to climate change and prepare for extreme climatic conditions’.<sup>48</sup>

7.60 The Victorian Farmers Federation (VFF) stated in its submission that:

Climate change policy will be strongly tied to drought policy and support measures. The VFF supports a model that focuses on

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47 Mr Geoff Thomas, AIAST, *Transcript of Evidence*, 18 November 2009, pp. 2-3.

48 Australian Pork Limited, Submission no. 16, p. 18.

preparedness and adaptation, in addition to emergency response and mitigation.

The VFF's position on drought preparedness has been articulated in the submission to the drought support review processes. In principle these views are a move to a broad-base preparedness system that

- Provides incentives to implement more resilient production system
- Facilitates the building of risk management knowledge and skills
- Encourages the adoption of risk management strategies
- Strengthen rural communities by diversifying the economic base
- Assisting where necessary structural adjustment to increase the sustainability of communities, industries and the agricultural sector.

This model of drought support focuses on assisting viable farms to manage the impacts of drought, while also allowing those farmers who are unable to continue to exit in an informed and supported manner.<sup>49</sup>

- 7.61 In its submission, the National Farmers' Federation argued for a visionary new strategy in drought management, noting that Australian farmers 'are world-leaders in implementing drought-resistant technologies and practices'.<sup>50</sup>
- 7.62 The NFF has urged the creation of a system of financial incentives to facilitate change, providing a catalyst for the adoption of better farm management practices:

To support this policy direction, in 2007, the NFF proposed Climate Management Grants – based on mutual obligation – to help farmers prepare for, manage and recover from drought, with the intention of alleviating the impact of future severe droughts.

To be effective, these mutual obligation grants must be available to all farmers who pass eligibility criteria, including:

- Having a drought management or a business plan that incorporates drought,
- Management strategies, and

49 Victorian Farmers Federation, Submission no. 33, p. 6.

50 NFF, Submission no. 17, pp. 13-14.

- Demonstrate implementation of drought mitigation activities over the past five years.

NFF said it is essential that these grants not be restricted to those farmers already in drought (or Exceptional Circumstances [EC]) declared areas. If the full benefits of effective drought preparedness and management measures are to be realised, they must be available to all farmers so they can prepare for, and mitigate against, droughts 'before' they are in the midst of one.

It is envisaged the grants could cover a variety of approved activities, including – but not limited to:

- Building stock containment (in accordance with relevant environmental and local laws);
- Trialling new/ different drought-resistant farm systems;
- Increasing or improving fodder storage capacity;
- Soil mapping, including water-holding capacity and plant requirements; and
- Implementing innovative practices and infrastructure to improve drought resilience.

Eligible farmers would have to match the Australian Government's funding with either cash or in-kind support - effectively a partnership to better drought-proof the sector. This mirrors the desire – both within the broader community and within the farming sector – to, over time; shift the policy paradigm from drought relief towards drought preparedness and management.<sup>51</sup>

7.63 In his submission, the Western Australian Minister for Agriculture, Food and Forestry noted that Western Australia was already moving towards a more proactive strategic approach to drought preparedness:

Government has a role in assisting those disadvantaged by prolonged and protracted consequences of climate change to reduce pressure on the natural resource and provide options for producers to leave farming. The Department has developed a draft strategic plan on preparedness (drought), based on a risk management approach, in response to the Productivity Commission's inquiry on drought assistance.

The drought preparedness strategy assists farmers to improve their skills in self reliance and climate change management. The policy principle for WA's plan is to assist farmers to make the

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51 NFF, Submission no. 17, p. 14.

transition from receiving drought assistance to being drought prepared and develop pathways to resilience. A safety net that provides support for farm families severely affected by drought is an essential component of the plan. Government funding is directed to activities and programs that promote long term profitability and productivity of farm businesses. These policy principles will assist farmers structurally adjust while addressing previous impediments to industry productivity growth, protecting the natural asset base, farm families and communities. To implement the strategy, the Department works with farmers to promote, communicate and provide relevant information on drought preparedness for incorporation into farm management strategies.<sup>52</sup>

- 7.64 In evidence before the Committee, Mr David Mortimer, Executive Manager, Climate Change Division, DAFF, highlighted the current review of drought policy:

The government is presently doing a major review of drought policy, which Minister Burke has been leading. As part of that there was an expert panel set up to specifically examine the social pressures in rural areas resulting from drought. That was headed by Mr Peter Kenny previous head of AgForce in Queensland and comprised a number of people with expertise in the area. That report has been provided to the government. That will form part of the government's consideration of future drought policy.<sup>53</sup>

## **Committee conclusion**

- 7.65 The Committee is aware that drought policy is under review by the Australian Government and offers no comment on this matter except to state that it supports an approach that emphasises capacity building and long term resilience rather than short term survival. Drought policy should be about developing industries and enterprises that can cope with drought.

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52 Minister for Agriculture, Food and Forestry, Western Australia, Submission no. 61, p. 3.

53 Mr David Mortimer, DAFF, *Transcript of Evidence*, 28 October 2009, p. 2.

**The Hon Dick Adams MP**

**Committee Chair**

**24 February 2010**