The Senate

Standing Committee on Rural and Regional Affairs and Transport

Climate change and the Australian agricultural sector

Interim report

September 2008

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ABBREVIATIONS

BoM	Bureau of Meteorology
CCAP	*Climate Change Adjustment Program*
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
DCC	Department of Climate Change
EC	Exceptional Circumstances
ECIRS	Exceptional Circumstances Interest Rate Subsidy
ECRP	Exceptional Circumstances Relief Payment
FMD	Farm Management Deposit
GRDC	Grains Research and Development Corporation
IPCC	Intergovernmental Panel on Climate Change
Minister	Minister for Agriculture, Fisheries and Forestry
NDP	National Drought Policy
NFF	National Farmers Federation
NRAC	National Rural Advisory Council
RBDC	Rural Business Development Corporation
RFCS	Rural Financial Counselling Service

Chapter 1

Introduction

Terms of reference

1.1 On 19 September 2007, the Senate referred the following matter to the Standing Committee on Rural and Regional Affairs and Transport for inquiry and report by 30 June 2008:

(i) the scientific evidence available on the likely future climate of Australia's key agricultural production zones, and its implications for current farm enterprises and possible future industries;

(ii) the need for a national strategy to assist Australian agricultural industries to adapt to climate change; and

(iii) the adequacy of existing drought assistance and exceptional circumstances programs to cope with long-term climatic changes.

1.2 On 14 February 2008, the Senate re-adopted the Inquiry with terms of reference unchanged and with a reporting date of 4 September 2008.

Conduct of the inquiry

1.3 The inquiry was advertised in The Australian and through the Internet. The committee invited submissions from a wide range of interested organisations, government departments and authorities and individuals. The committee continued to accept submissions throughout the Inquiry.

1.4 The committee received 42 submissions. A list of individuals and organisations that made public submissions to the inquiry together with other information authorised for publication is at Appendix 1. The committee held two public hearings in Canberra. A list of the witnesses who gave evidence at the public hearings is available at Appendix 2.

The committee's interim report

1.5 The committee has decided to report in two stages. This interim report addresses two parts of the Inquiry's terms of reference. Chapter 2 of the report outlines the scientific evidence available on the likely future climate of Australia's key agricultural production zones. Chapter 3 of the report discusses the adequacy of existing drought assistance and exceptional circumstances programs to cope with long-term climatic changes.

1.6 The extension in the reporting date has enabled the committee to gather further evidence on the implications of climate change for Australia's key agricultural zones. In particular, the committee will use the extension to conduct further

investigations into soil carbon sequestration. On 19 August 2008, a subcommittee visited the Binnu district of Western Australia for a site visit to a farm which is developing grazing and cropping systems using sub-tropical perennial grasses. The committee is planning a further site visit to Western NSW in September. Information about these site visits will be contained in the committee's final report.

1.7 The extension in the reporting date will also give the committee the opportunity to give consideration to the final Garnaut report, which is due for release on September 30 2008, and consultations on the Federal Government's proposed emissions trading scheme, the Carbon Pollution Reduction Scheme. The committee will use this information in its final report to address the remaining terms of reference in relation to the implications of climate change on Australia's agricultural zones and the need for a national strategy to assist Australian agricultural industries to adapt to climate change.

1.8 The committee intends to table its final report on 4 December 2008.

Acknowledgement

1.9 The committee thanks those organisations and individuals who made submissions and gave evidence at the public hearings.

Note on references

1.10 References in this report are to individual submissions as received by the committee, not to a bound volume. References to the committee Hansard are to the proof Hansard: page numbers may vary between the proof and the official Hansard transcript.

Chapter 2

Future climate for Australia's key agricultural production zones

Introduction

2.1 This chapter discusses one aspect of the inquiry's first term of reference: the scientific evidence available on the likely future climate of Australia's key agricultural production zones. The committee was referred to two main reports in relation to this term of reference: the Intergovernmental Panel on Climate Change's (IPCC) Fourth Assessment Report[1] and the joint Commonwealth Scientific and Industrial Research Organisation (CSIRO) – Bureau of Meteorology (BoM) *Climate Change in Australia* report.[2]

2.2 This chapter begins with a brief overview of some factors influencing climate projections. The chapter then goes on to discuss the predictions made in the IPCC Fourth Assessment Report and the CSIRO-BoM *Climate Change in Australia* report (*Climate Change in Australia*) of the likely future climate of Australia's key agricultural production zones. The chapter also discusses the need for further work to downscale climate projections and better communicate projections to those in the agricultural sector.

2.3 The implications of likely future climate on current farm enterprises and possible future industries will be considered in the final report.

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1 The IPCC is a scientific intergovernmental body set up by the World Meteorological Organisation and the United Nations Environment Programme. The IPCC's role is to assess the latest literature relevant to understanding the risk of human-induced climate change, its observed and projected impacts and options for adaptation and mitigation. The IPCC's Fourth Assessment Report, comprising four volumes was released in 2007. The full reference for the Synthesis Report, which contains a synthesis of all the findings in the assessment report is: IPCC, 2007: *Climate Change 2007: Synthesis Report. Contributions of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland (*Synthesis Report*). Unless otherwise stated, references to the IPCC's Fourth Assessment Report are to the Synthesis Report.

2 *Climate Change in Australia* complements the IPCC Report detailing regional climate change detail, consistent with the global predictions in the IPCC Report. The full reference for *Climate Change in Australia* is: Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Bureau of Meteorology (BoM): *Climate Change in Australia – Technical Report 2007*.

Climate projections

2.4 The complexity of the climate system means that forecasting likely future climate is not simply a matter of extrapolating from past trends. Instead, climate models, which are mathematical representations of the Earth's climate system, are used to forecast weather and climate.[3]

2.5 However, as *Climate Change in Australia* notes projections of global and regional climate change contain a large number of uncertainties.[4]

2.6 The IPCC Fourth Assessment Report states that 'significant factors' contribute to uncertainty in projected climate change for the Australia-New Zealand region. This uncertainty reduces confidence in projections:

> The El Niño-Southern Oscillation significantly influences rainfall, drought and tropical cyclone behaviour in the region and it is uncertain how [the El Niño-Southern Oscillation] will change in the future. Monsoon rainfall simulations and projections vary substantially from model to model, thus we have little confidence in model precipitation projections for northern Australia. More broadly, across the continent summer rainfall projections vary substantially from model to model, reducing confidence in their reliability. In addition, no detailed assessment of [model performance] over Australia or New Zealand is available, which hinders efforts to establish the reliability of projections from these models.[5]

2.7 Human activities also impact on climate through increasing the concentrations of greenhouse gases, such as carbon dioxide and methane, in the Earth's atmosphere. One of the key difficulties in making long-term climate projections, and consequently assessing future climate change, is determining future greenhouse gas emissions due to human activities. This is explained in *Climate Change in Australia*:

> near-term changes in climate are strongly affected by inertia in the climate system due to past greenhouse gas emissions, whereas climate changes later in the century are more dependent on the particular pattern of greenhouse gas emissions that occur through the century.[6]

2.8 In order to overcome this problem the IPCC has developed a range of emissions scenarios.[7] The IPCC describes these scenarios as 'images of the future, or

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3 *Climate Change in Australia*, pp 38-39.

4 *Climate Change in Australia*, p. 44.

5 IPCC, 2007: *Report of the Intergovernmental Panel on Climate Change* [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, p. 898.

6 *Climate Change in Australia*, p. 49.

7 These scenarios are commonly referred to as the 'SRES emissions scenarios' – after the IPCC's Special Report on Emissions Scenarios: IPCC, 2000: *Special Report on Emissions Scenarios*, [Nebojsa Nakicenovic and Rob Swart (Eds.)]. Cambridge University Press, (*SRES Report*) available at http://www.ipcc.ch/ipccreports/sres/emission/index.htm (accessed 1 August 2008).

alternative futures', and emphasises that the scenarios are not predictions or forecasts.[8] Importantly, the scenarios do not include additional climate policies for reducing or mitigating greenhouse gas emissions above current policies.[9] Further, the IPCC does not assign any probability that a particular scenario will occur.[10]

2.9 The scenarios are grouped into four 'storylines':[11]

- The A1 storyline describes a world of very rapid economic growth, a global population that peaks in mid-century and rapid introduction of new and more efficient technologies. A1 is divided into three groups that describe alternative directions of technological change: fossil intensive (A1FI), non-fossil energy resources (A1T) and a balance across all sources (A1B).
- Storyline A2 describes a very heterogeneous world with high population growth, slow economic development and slow technological change.
- Storyline B1 describes a convergent world, with the same global population as A1, but with more rapid changes in economic structures toward a service and information economy.
- Storyline B2 describes a world with intermediate population and economic growth, emphasising local solutions to economic, social, and environmental sustainability.

2.10 Dr Mark Howden of CSIRO acknowledged the difficulties that uncertainty in climate change projections could cause for those in the agricultural sector, but believes that this uncertainty should not stop decision-making:

> To some extent there is a bit of irreducible uncertainty associated with this. In terms of climate change, yes, there is uncertainty associated with that, but uncertainty does not stop people making decisions. Uncertainty is just an integral part of making decisions on an everyday basis. It is part of how governments make decisions.[12]

2.11 Ms Nicolette Boele of the Agricultural Alliance for Climate Change indicated to the committee that, while there may be barriers to scientific understanding, what is really missing is the political will to stand behind policies and promote market confidence:

> No question, there would be more money and more focus on the science. But the political will and the political statements around the role that

8 IPCC, 2000: *SRES Report*, Chapter 1, Section 1.2, *What are scenarios?*

9 IPCC, 2000: *SRES Report*, Chapter 1, section 1.3, *Uses and Purposes*.

10 IPCC, 2000: *SRES Report*, Summary for Policy Makers, Box 1.

11 IPCC, 2000: *SRES Report*, Summary for Policy Makers, Box 1.

12 *Committee Hansard*, 30 June 2008, p. 6. See also BoM, *Submission 7*, p. 2.

> science can play is just as important as getting farmers paid to change their land management.[13]

2.12 In contrast, the NSW Irrigators Council argued that the scientific evidence presented offered 'far too wide a range' of impacts upon which to base long term policy.[14]

Future climate projections

2.13 This section of the report outlines the projections for future climate, starting with general global predictions, and then setting out specific predictions for Australia. The information is drawn from the IPCC's Fourth Assessment Report and *Climate Change in Australia*.

2.14 These are not the only climate projections studies relevant to Australia.[15] However, the committee also notes that the IPCC Fourth Assessment Report and *Climate Change in Australia* are regarded as the most comprehensive studies using the most extensive and refined modelling techniques, and so the committee has limited its consideration to these reports.[16]

Global climate

2.15 One of the significant observations in the IPCC's Fourth Assessment Report is that:

> [w]arming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level… [17]

2.16 The IPCC makes the following projections of future changes in climate:

> [f]or the next two decades a warming of about 0.2°C per decade is projected for a range of [emissions scenarios]. Even if the concentrations of all [greenhouse gases] and aerosols had been kept constant at year 2000 levels, a further warming of about 0.1°C per decade would be expected. Afterwards, temperature projections increasingly depend on specific emissions scenarios…[18]

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13 *Committee Hansard*, 1 July 2008, p. 20. See also Ms Boele, *Committee Hansard*, 1 July 2008, p. 16.

14 *Submission 18*, p. 3.

15 See for example WA Department of Water, *Submission 26*, p. 1; Queensland Government, *Submission 30*, p. 4.

16 See Bureau of Meteorology (BoM), *Submission 7*, p. 2; WA Department of Water, *Submission 26*, p. 1; Queensland Government, *Submission 30*, p. 4.

17 IPCC, 2007: *Synthesis Report*, p. 30.

18 IPCC, 2007: *Synthesis Report*, p. 45.

Australian climate

2.17 *Climate Change in Australia* makes climate projections for the years 2030, 2050 and 2070 for a wide range of climate variables.[19] This section of the report details the projections for temperature, precipitation and drought, and then provides a summary of some of the other climate variables.

Temperature[20]

2.18 Temperature projections for 2030 do not vary much among the emissions scenarios, so the results presented in *Climate Change in Australia* are for a mid-range emissions scenario, the A1B scenario. Those projections were that, compared to 1990:[21]

> for most locations the mean warming is 0.7-0.9ºC in coastal areas and 1-1.2ºC inland. In winter, warming is projected to be a little smaller than in the other seasons, as low as 0.5ºC in the far south. Warming is usually smaller near the coasts than further inland, an exception being in the northwest, where the warming exceeds 1.3ºC in spring. The annual result has a similar pattern to the seasons, with the warming being largest in the interior and the north-west.[22]

2.19 By 2050, the best estimate for annual warming is 1.2°C for the B1 (low emission) scenario to 2.2°C for the A1F1 (high emission) scenario. By 2070 the best estimate of annual warming is 1.8°C for the B1 scenario and around 3.4°C for the A1F1 scenario.[23] The pattern of warming in 2050 and 2070 is similar to the 2030 projections – with less warming in the south and north-east and more inland.

2.20 There is also a projected increase in the frequency of hot days and warm nights, and a decrease in the frequency of frosts.

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19 See *Climate Change in Australia*, Table 5.1, p. 50 for a summary of how projections for each climate variable were made. A set of 23 climate models were used for projections, although not all variables could be modelled. The table also sets out the emissions scenarios that were modelled.

20 See Climate Change in Australia, pp 53-64.

21 Temperature projections were made relative to a baseline period of 1980-1999, referred to as '1990' for convenience. See *Climate Change in Australia*, p. 51.

22 *Climate Change in Australia*, p. 53. A full set of projections for all emissions scenarios is set out in Appendix A of *Climate Change in Australia*.

23 'Best estimate' is based on the 50th percentile, the mid-point of the spread of model results, see *Climate Change in Australia*, Summary Brochure – Observed Changes and Projections, p. 3.

Precipitation[24]

2.21 *Climate Change in Australia* notes that there is a disparity in rainfall projections by the different climate models, and as a result it is not possible to make definitive statements about the direction of precipitation changes.[25] Projections of precipitation changes are presented here as a percentage change relative to the 1990 baseline.

2.22 The best estimate projections of precipitation for 2030 for the A1B emissions scenario were for little change in precipitation in the far north of Australia and decreases of 2-5% elsewhere. In terms of seasonal forecasts:

> [i]n summer and autumn decreases [in precipitation] are smaller and there are slight increases in the east. Decreases of around 5% prevail in winter and spring, particularly in the south-west where they reach 10%. These are still smaller, however, than the decreases that were observed there in previous decades ...[26]

2.23 By 2050, under a low emissions scenario (B1), best estimates of annual precipitation were for little change in the far north grading southwards to a decrease of 5%, relative to the 1990 baseline. Under the high emissions scenario (A1F1), the best estimate is for little change in the far north, grading to a 7.5% decrease in precipitation elsewhere.

2.24 By 2070, the best estimates for a low emissions scenario are similar to those seen in the 2050 high emissions scenario projections. For the high emissions scenario, the projections are for little change in the far north grading to around a 10% decrease in the south-west.

2.25 The seasonal changes in precipitation for 2050 and 2070 follow the same trend as those seen in the 2030 projections, but are larger.

2.26 Some of the other key findings in *Climate Change in Australia* in relation to precipitation are:

- models show an increase in daily precipitation intensity, that is the amount of rain on a rain day, and an increase in the number of dry days;
- snow cover, average snow season lengths and snow depth is likely to decline.

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24 See *Climate Change in Australia*, pp 65-75.

25 *Climate Change in Australia*, p. 65.

26 *Climate Change in Australia*, p. 67.

Drought[27]

2.27 *Climate Change in Australia* projected the changes in 'agricultural drought', meaning a period of extremely low soil moisture. The projections were made only for the low (B1) and high (A1F1) emissions scenarios for the years 2030 and 2070. The results of the projections were summarised as:

> up to 20% more drought-months over most of Australia by 2030, with up to 40% more droughts by 2070 in eastern Australia, and up to 80% more droughts in south-western Australia.[28]

Other climate variables[29]

2.28 As noted above *Climate Change in Australia* sets out projections for a range of climate variables. This section of the report briefly summarises the projections for some of those variables:

- Small decreases in humidity are projected over most of Australia, with largest decreases in the south and west, and little change along the east coast and in Tasmania.[30]
- Annual potential evapotranspiration is projected to increase over Australia, with the largest increases being in the north and east.
- In south-eastern Australia there is a substantial increase in fire weather risk likely at most sites.[31]
- There is the potential for significant increases in inundations from storm surges, resulting in flooding and erosion, due to higher mean sea level and more intense weather systems.
- Studies indicate a likely increase in the proportion of tropical cyclones in the more intense categories, but a possible decrease in the total number of cyclones.
- There are indications that hail risk may increase over the south-east coast of Australia.

Utility of climate projections

2.29 During the course of the inquiry, the committee received evidence and submissions relating to the utility of the projections of future climate for the

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27 See *Climate Change in Australia*, pp 83-84.

28 *Climate Change in Australia*, p. 83.

29 This information was drawn directly from *Climate Change in Australia*, Summary Brochure – Observed Changes and Projections, pp 11-12.

30 See also, *Climate Change in Australia*, p. 78.

31 This risk may also exist elsewhere in Australia, but was not examined in *Climate Change in Australia*, see pp. 90-91.

agricultural sector. Of particular importance was the need for a downscaling of projections to a regional level. A further issue raised with the committee was the communication of climate projections in a manner that is meaningful to farmers and others in the agricultural sector. These issues are discussed below.

Downscaling of projections

2.30 Throughout the inquiry the committee was told of the need to downscale climate projections in terms of time and space.[32]

2.31 Apple and Pear Limited stated that the climate models were better at capturing the 'broad-global scale' than the more localised national or regional scale.[33] Growcom highlighted the need for accurate, downscaled climate projections to the horticultural sector:

> [f]or the industry to effectively respond to climate challenges, accurate and detailed information on regional-scale climate changes and how they will affect production and marketing is required. This information is critical to inform the development of management strategies at enterprise, regional and industry scales to effectively manage future climate change impacts.[34]

2.32 Dr Beverly Henry, of Meat and Livestock Australia, indicated that downscaling climate projections was only part of the issue:

> The issues for us, though, are how we get downscaled projections from those models at a scale that we can give to farmers to make decisions. We have to get the regional scale outlooks on the same time frame that farmers make decisions on, but then link them also to the biophysical-type models that will tell us what the impacts will be on pasture growth and on animal production. So there are two steps to do with getting better projections: the regional scale models and then the linking to the impacts at farm level.[35]

2.33 Dr Michael Robinson, of Land and Water Australia, also noted the desire in the agricultural sector for better climate projections on a finer scale with greater certainty.[36]

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32 See for example: Rural Business Development Corporation, *Submission 15*, p. 1; Queensland Government, *Submission 30*, p. 4.

33 *Submission 23*, p. 3.

34 *Submission 31*, p. 10.

35 Dr Beverly Henry, Manager Environment, Sustainability and Climate Change, Meat and Livestock Australia, *Committee Hansard*, 1 July 2008, p. 3.

36 Dr Michael Robinson, Executive Director, Land and Water Australia; and Chair, Joint Strategy Team, National Climate Change Research Strategy for Primary Industries, *Committee Hansard*, 30 June 2008, p. 57.

2.34 *Climate Change in Australia* stated that while climate models are continuing to improve, confidence in climate model projections varies with spatial and temporal scale:

> [h]ighest confidence is attached to results analysed at the coarsest spatial and temporal scales, such as global or hemispheric annual means, and decreases with finer scales, such as sub-continental or regional daily variability. This is partly because the magnitude of natural variability increases as scales decrease, so that regional climate change signals are more easily masked by climate variability. Furthermore, local influences on climate (such as regional topography or processes) become more important at finer spatial scales.[37]

2.35 BoM's submission indicated that the development of improved climate models is an area of research priority in its organisation:

> … continued research and improvements of climate models and in methods used to produce projections are essential. In late 2006 senior researchers from the Bureau of Meteorology and CSIRO defined Australia's climate change knowledge gaps and research priorities. Of particular note was the need to improve the simulations of the earth's climate system by advancing to new generation climate models, which not only contain the physics of the atmosphere, oceans and cryosphere (as done in earlier generation models), but also the physics and/or chemistry of interrelated aspects such as the biosphere and radiatively active gases. Such improvements would also include a full carbon cycle, covering the terrestrial (including full vegetation model), ocean and atmosphere systems.[38]

Communication

2.36 The committee's attention was also drawn to the need to communicate climate projections in a manner that assists farmers in their decisions making.

2.37 The Primary Industries & Natural Resources Curriculum Centre, TAFE NSW, believes that existing scientific evidence is not readily available to the population generally and recommended that all available data be presented in Plain English, which should be easily understood.[39]

2.38 The Australian Landcare Council called for:

> regional, national and international communication of scientific information about climate change, that is all inclusive, meaningful and useful.[40]

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37 *Climate Change in Australia*, p. 41.

38 *Submission 7*, p. 5. The National Farmers Federation has also identified the research and development of more accurate climate models as a primary focus, see *Submission 24*, p. 6.

39 *Submission 4*, p. 1.

40 *Submission 13*, p. 3.

2.39 In evidence to the committee Ms Nicolette Boele, representing the Agricultural Alliance on Climate Change, highlighted the difficulty of choosing the best means to communicate with those in the agricultural sector:

> We have done a little bit of research on how to communicate climate science to the agricultural sector and the regional and rural communities that support it. We did find that generally farm sizes are getting larger and that the population is ageing, which raises a whole lot of questions about which medium you can reach the sector with.
>
> …These people are very busy; they are running businesses. It is only really the big end of town that has the time, resources and intentions to go and actively find more data about climate change and what it might do for their businesses
>
> … it is probably the content and quality of the data but also how that extension happens, how you actually make climate information not an added thing but included in existing paths of communication for those people.[41]

2.40 Ms Boele was also supportive of using those who were well-respected in the farming industry as communicators of scientific information:

> …this is a particular community that really listens to its peers. Instead of having CSIRO type science communicators talking at, down and across to farmers, if you can actually somehow have champions within communities that are esteemed by their peers, that is going to go a hell of a lot faster.[42]

2.41 BoM set out in its submission some of the programs it has in place for communicating climate information, including:[43]

- the seasonal outlook service for rainfall and temperature;
- commentary on the state of the El Niño-Southern Oscillation; and
- the Water and Land website providing meteorological information specifically tailored for primary industry and natural resource management.

Committee view

2.42 The evidence before the committee is that there is general acceptance by those in the agricultural sector that climate change is occurring.[44]

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41 *Committee Hansard*, 1 July 2008, pp 24-25.

42 *Committee Hansard*, 1 July 2008, p. 25. See also Dr Mark Howden, Theme Leader, Climate Adaptation Flagship, CSIRO, *Committee Hansard*, 30 June 2008, p. 17 who noted the usefulness of organisations such as Landcare for communicating information to farmers.

43 *Submission 7*, pp 5-6.

2.43 The changes in climate projected in the IPCC's Fourth Report and *Climate Change in Australia* would have significant impacts on the Australian agricultural sector, and these impacts will be discussed in the committee's final report. However, the committee is concerned that climate projections may be underestimating the amount of warming which may occur in future:

> There is a significant possibility that warming may occur in excess of these values, particularly later in the century, although the likelihood of this occurrence is impossible to estimate at this stage.[45]

2.44 The committee appreciates that significant work has, and continues, to occur on producing long-term climate projections on a global and national scale. The committee recognises the need for more work to be done to downscale climate change projections to a local level to be of greater use to farmers in decision-making. The committee notes that there is already work in progress on improving and downscaling climate models and projections.[46]

2.45 The committee believes that there is an urgent need for improved communication of climate projections to farmers and others in the agricultural sector. The committee understands the uncertainties and limitations inherent in climate projections cause frustration for those in the agricultural sector trying to plan for a changing future climate. It is the committee's view that better communication of climate projections is required in order for this information to be of use to farmers and others in the agricultural sector. The committee encourages CSIRO, BoM and other research groups involved in climate projections to give consideration to the manner and mode in which climate projections are presented to the agricultural sector.

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44 See for example: Gwydir Valley Irrigators Association Inc, *Submission 14*, p. 1; Apple and Pear Limited, *Submission 23*, p. 1; Growcom, *Submission 31*, p. 8; Mr Tim Wiley, *Committee Hansard*, 30 June 2008, p. 39; Mr Ben Faragher, Chief Executive Officer, National Farmers Federation, *Committee Hansard*, 1 July 2008, p. 26.

45 BoM, *Submission 7*, p. 4, quoting from *Climate Change in Australia*.

46 See for example Mr Jason Alexandra, Director, Water Policy Coordination, Murray-Darling Basin Commission, *Committee Hansard*, 30 June 2008, p. 67; Queensland Government, *Submission 30*, p. 4; Growcom, *Submission 31*, p. 8.

Chapter 3

Drought Assistance and Exceptional Circumstances Programs

Introduction

3.1 Chapter 3 addresses the inquiry's third term of reference, the adequacy of current drought assistance and Exceptional Circumstances (EC) programs to cope with long-term climatic changes.

3.2 Overwhelmingly submissions and evidence to committee were of the view that existing drought assistance and EC programs were not appropriate tools to cope with long term climate change. The committee acknowledges that, to some extent, its consideration of this term of reference has benefited from, but also been superseded by, the announcement and ongoing work of the National Review of Drought Policy.

3.3 Chapter 3 starts with an overview of the current National Drought Policy (NDP), including a summary of some of the drought assistance and EC programs, and an overview of new measures to help primary industries adjust to climate change. The chapter goes on to outline the work of the National Review of Drought Policy and then concludes with a discussion of the problems and short-comings of the current policy and programs.

National Drought Policy[1]

3.4 Government assistance for drought events is guided by the NDP. The NDP was developed in 1992 and reaffirmed in 2005 by the Primary Industries Ministerial Council. Under the NDP, drought assistance is intended to be a short-term measure to help farmers prepare for and manage and recover from drought.[2]

3.5 The objectives of the NDP are to:

- encourage primary producers and other sections of rural Australia to adopt self-reliant approaches for managing climate variability;
- maintain and protect Australia's agricultural and environmental resources base during periods of extreme climate stress; and

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1 Unless otherwise stated, the following information is taken from Department of Agriculture, Fisheries and Forestry (DAFF) and the Department of Climate Change (DCC), *Submission 34*, pp 17-18.

2 DAFF and DCC state that a drought is a prolonged, abnormally dry period when there is not enough water for users' normal needs. However, because people use water in many different ways, there is no universal definition of drought, see *Submission 34*, p. 17.

- ensure early recovery of agricultural and rural industries, consistent with long-term sustainable levels.

3.6 Although self-reliance is a key objective, the NDP also recognises that there are rare and severe events that are beyond the ability of even the most prudent farmer to manage. These events are covered under the EC arrangements.

Exceptional Circumstances events[3]

3.7 To be classified as an EC event, the event:

- must be rare, that is, it must not have occurred more than once on average in every 20-25 years;
- must result in a rare and severe downturn in farm income over a prolonged period of time (eg greater than 12 months);
- must be a discrete event that is not part of long-term structural adjustment processes or normal fluctuations in commodity prices.

3.8 Applications for EC declaration are prepared by communities or industry bodies with the assistance of the relevant State or Territory Government and are forwarded to the federal government Minister for Agriculture, Fisheries and Forestry (Minister) for consideration. Applications for EC declaration need to be supported by evidence of the rarity and severity of the event and evidence that the event could not have been foreseen or managed through normal risk management strategies available to farmers.[4] Currently, the classification of drought rarity and severity is based on long-term historical rainfall records.[5]

3.9 On receipt of an application for EC declaration, the Department of Agriculture, Fisheries and Forestry (DAFF) assesses whether the application demonstrates a prima facie case for EC assistance. Where an application is found to demonstrate a prima facie case for EC assistance, the Minister forwards it to the National Rural Advisory Council (NRAC).[6]

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3 Unless otherwise stated, information in the following section is from DAFF, *Information Handbook: Exceptional Circumstances. Guide to the policy and assistance measures provided under Exceptional Circumstances Arrangements*, February 2008, pp 7-12 (EC Handbook). Available at http://www.daff.gov.au/agriculture-food/drought/ec (accessed 8 August 2008).

4 See particularly DAFF, EC Handbook, pp 10-12.

5 DAFF and DCC, *Submission 34*, p. 18. The NRAC is an independent committee which advises the Minister on rural issues, including EC declaration applications. The NRAC comprises up to eight members, including: a Chairperson; an Australian Government representative; a State or Territory Government representative; a representative of the NFF; and others appointed as expert members in the areas of economics, financial administration, banking, sustainable agriculture, farm management or training.

6 DAFF and DCC, *Submission 34*, p. 18.

3.10 The NRAC assess the application for EC declaration, and may also conduct an on-ground assessment of the application area. NRAC then provide the Minister with a recommendation on the application. Where the Minister accepts the recommendation of the NRAC to declare an EC area, the funding of the declaration requires Cabinet approval.[7]

Drought assistance and Exceptional Circumstances programs

3.11 There is a broad range of drought assistance and EC programs available from both the Federal and State Governments. Set out below is an outline of some of the types of assistance available.[8]

Exceptional Circumstances Relief Payment

3.12 The Exceptional Circumstances Relief Payment (ECRP) is to assist farm and small business families in EC declared areas that are experiencing difficulties meeting basic living expenses. ECRP is paid at a rate equivalent to the Newstart Allowance, and subject to similar income and asset tests as the Newstart Allowance. The income and assets test excludes assets considered essential to the long-term viability of the farm and up to $20,000 in off-farm, or non-business, income.[9]

3.13 DAFF and DCC provided the following information about the uptake and cost of the ECRP:

> As at 1 February 2008, there were 24 180 farming families and 1 047 small businesses receiving ECRP. Total expenditure since 2001 equates to over $1 billion … The mean payment for ECRP [to farmers] is $5 410 per year …[10]

Exceptional Circumstances Interest Rate Subsidy

3.14 The Exceptional Circumstances Interest Rate Subsidy (ECIRS) provides an interest rate subsidy to farm enterprises and eligible small businesses that are viable in the long term, but are in financial difficulties dues to a short term EC event.

3.15 ECIRS provides a subsidy of up to 50 per cent of the interest payable on new and existing loans for the first year of an EC declaration, and up to 80 per cent in the second and subsequent years. The subsidy is available up to a maximum of $100,000 in any 12-month period and a cumulative maximum of $500,000 over five years.

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7 DAFF and DCC, *Submission 34*, pp 31-33.

8 See also DAFF and DCC, *Submission 34*, pp 34-35; and DAFF, *Drought Assistance: A summary of measures provided by the Australian, State and Territory Government*, February 2008 (Drought Assistance Handbook), available at http://www.daff.gov.au/agriculture-food/drought/assistance/compendium (accessed 18 July 2008).

9 DAFF and DCC, *Submission 34*, pp 25-26. See also DAFF, EC Handbook, pp 15-16.

10 DAFF and DCC, *Submission 34*, p. 25.

3.16 As at 1 February 2008, there were 48 198 approved ECIRS applications for farmers and 1 115 for small businesses at the cost of over $1 billion.[11]

Exceptional Circumstances Exit Package

3.17 The EC Exit Package is designed to assist farmers intending to leave farming. The package consists of a taxable, one-off, grant of up to $150,000. In order to receive the full amount of the grant, the farmer's net assets, after the sale of the farm, must be less than $350,000. The grant reduces to zero when the net assets reach $575,000.

3.18 As at 26 February 2008 there had been 231 claims registered for the grant with five claims paid.

3.19 Other elements of the EC Exit Package include:

- up to $10,000 for professional advice and retraining to help recipients plan for life after farming; and
- $10,000 to help with relocation expenses and to access job seeking services after they have sold the farm.[12]

Professional Advice and Planning Grants

3.20 Professional Advice and Planning Grants are designed to encourage and assist farming enterprises to develop a business plan incorporating drought risk and management strategies.

3.21 Grants of up to $5,500 (GST inclusive) are available to eligible farm businesses located in EC declared areas to obtain advice on business management, production and agronomic issues, natural resource management and risk management. The grants can be used to:

- assist in planning to maintain or increase the productivity or profitability of a business;
- prepare for or manage a business in times of drought or climatic variability;
- fund an independent review of a farm business.[13]

3.22 Professional Advice and Planning Grants commenced in October 2006. As at 31 January 2008, 5015 grants had been approved amounting to a commitment of over $26 million.[14]

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11 DAFF and DCC, *Submission 34*, pp 22-23, and DAFF, EC Handbook, pp 17-20.

12 DAFF and DCC, *Submission 34*, p. 27.

13 See DAFF, *Professional Advice and Planning Grant: Frequently Asked Questions*, 19 March 2008, available at: http://www.daff.gov.au/agriculture-food/drought/assistance/advice (accessed 8 August 2008).

14 DAFF and DCC, *Submission 34*, p. 21.

Farm Management Deposits

3.23 Farm Management Deposits (FMD) assist primary producers to deal more effectively with fluctuations in cash flow resulting from climate variations and/or changes in market prices.

3.24 FMD allow farmers to set aside pre-tax primary production income in profitable years to establish a cash reserve to assist in meeting costs in low income years. The deposits are tax deductible in the year that they are made and included as taxable income in the year that they are withdrawn. To qualify as a tax deduction the deposit must remain in the account for 12 months, unless the withdrawal is made during an EC declaration, and the deposit was made prior to the EC declaration.[15]

3.25 As at 30 September 2007, there were 36 865 FMD holders with total holdings of $2 389 billion.[16]

Counselling

3.26 Both State and Federal Governments provide counselling services aimed at providing counselling to drought affected areas. Two types, Drought Counselling and the Rural Financial Counselling Services (RFCS) Program, are discussed here.

3.27 Drought Counselling aims to improve access to personal counselling services for drought-affected families in rural regions. Funding is provided through the Department of Families, Housing, Community Services and Indigenous Affairs' Family Relationship Service Program to enable organisations to provide face to face counselling and other drought support measures.[17]

3.28 Counselling is also provided through the RFCS Program. Although not specifically a drought assistance measure, RFCS provides grants to:

> support the provision of a free and impartial rural financial counselling service to primary producers, fishers and small rural businesses in financial difficulty. Rural financial counsellors across Australia can provide information and support on drought issues for rural communities ... the aim of the programme is to provide information and support to people in rural Australia by improving access to services.[18]

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15 DAFF and DCC, *Submission 34*, p. 22. See also DAFF, Drought Assistance Handbook, p. 18.

16 DAFF and DCC, *Submission 34*, p. 22.

17 DAFF, Drought Assistance Handbook, p. 27.

18 DAFF, Drought Assistance Handbook, p. 19.

3.29 DAFF provided the following information on the numbers of clients assisted through the RCFS program for February 2007-January 2008:[19]

Type	NSW	QLD	WA	VIC	SA	TAS	All States
Clients Assisted	6 720	1 056	311	4 322	2 284	210	14 916

Climate Change and Drought

3.30 In its submission DAFF notes that climate change is expected to deliver an increased frequency and severity of extreme climatic events, such as drought:

> [i]ndustries that are affected by climate, such as Australia's agricultural industry, are at greater risk if they rely solely on historical patterns of climate variability and extreme events when making business decisions.[20]

3.31 To this end DAFF states that a primary objective of recent programs, such as the Professional Advice and Planning Grant, has been to 'increase the capacity of farmers to understand the risks posed by climate change and their ability to manage and plan for it'.

3.32 DAFF's submission also noted the commencement of a new measure: the *Climate Change Adjustment Program* (CCAP).[21] CCAP is part of the *Australia's Farming Future* initiative, which is designed to address the impacts of climate change in the primary industries sector. CCAP will:

> provide financial assistance to build skills, provide training and professional advice to help improve management and to provide for better planning and decision-making. It will also provide re-establishment grants for farmers.[22]

3.33 More information about CCAP is set out on DAFF's website.[23] Assistance under CCAP includes:

- An Advice and Training Grant of up to $5,500 (GST inclusive) for specialised professional advice and training across a range of disciplines to assist farmers to adjust to the impact of climate change.[24]

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19 *Submission 34*, pp 27-28.

20 *Submission 34*, p. 28.

21 *Submission 34*, p. 16.

22 *Submission 34*, p. 16.

23 DAFF, *Climate Change Adjustment Program: Frequently Asked Questions*, 1 July 2008. Available at http://www.daff.gov.au/agriculture-food/australias-farming-future/climate-change-adjustment-assistance/climate_chane_adjustment_program_faq (accessed 18 July 2008).

- Transitional Income Support to assist farm families in financial difficulty to manage the impacts of climate change. Income support is available for 12 months at the Newstart Allowance rate. Farmers receiving Transitional Income Support must developing a CCAP Action Plan and undertaking actions included in the plan, for example improved financial security, and increased preparedness of the farm business for changing economic and climatic conditions.[25]
- A Re-establishment Grant of up to $150,000 for farmers who choose to sell their farm enterprise and leave farming.[26]

3.34 As CCAP is a new measure, the committee received little evidence on the policy.[27]

National Review of Drought Policy

3.35 In February 2008 the Primary Industries Ministerial Forum announced that 'current approaches to drought and exceptional circumstances are no longer the most appropriate in the context of a changing climate', and that '[d]rought policy must therefore be improved to create an environment of self-reliance and preparedness and encourage the adoption of appropriate climate change management practices'.[28]

3.36 In April 2008 the Minister for Agriculture, Fisheries and Forestry announced a review of national drought policy'.[29] The review of national drought policy comprises three separate investigations:[30]

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24 DAFF, *Climate Change Adjustment Program: Frequently Asked Questions*, 1 July 2008, pp 3-4, available at http://www.daff.gov.au/agriculture-food/australias-farming-future/climate-change-adjustment-assistance/climate_chane_adjustment_program_faq (accessed 18 July 2008).

25 DAFF, *Climate Change Adjustment Program: Frequently Asked Questions*, 1 July 2008, p. 8, available at http://www.daff.gov.au/agriculture-food/australias-farming-future/climate-change-adjustment-assistance/climate_chane_adjustment_program_faq (accessed 18 July 2008).

26 DAFF, *Climate Change Adjustment Program: Frequently Asked Questions*, 1 July 2008, pp 5-8, available at http://www.daff.gov.au/agriculture-food/australias-farming-future/climate-change-adjustment-assistance/climate_chane_adjustment_program_faq (accessed 18 July 2008). People will be excluded from receiving the Re-establishment Grant if they have received another industry exit payment, for example an exit grant under the Exceptional Circumstances Exit Package, or the Farm Help Re-establishment Grant or the Rural Adjustment Scheme Re-establishment Grant.

27 See Westpac Banking Corporation, *Submission 28*, p. 3.

28 Primary Industries Ministeral Forum, Communique, 29 February 2008, p. 2, available at http://www.daff.gov.au/__data/assets/word_doc/0004/576643/communiquefeb.doc (accessed 16 July 2008).

29 The Hon. Tony Burke, MP, Minister for Agriculture, Fisheries and Forestry, 'Drought policy for Australia's future', Media Release DAFF08/046B, 23 April 2008, available at http://www.maff.gov.au/media/media_releases/april_2008/drought_policy_for_australias_future (accessed 16 July 2008).

- an economic assessment of drought support measures by the Productivity Commission;
- an assessment by an expert panel of the social impacts of drought on farm families and rural communities; and
- a climatic assessment by the CSIRO and the Bureau of Meteorology of the likely future climate patterns and the current EC standard of a one-in-20-to-25-year-event.

3.37 The Minister for Agriculture, Fisheries and Forestry has stated that the progress of the review will be discussed at the November meeting of the Primary Industries Ministerial Forum, with the aim of having an improved drought policy in place by July 2009.[31]

Criticisms of drought assistance and Exceptional Circumstances programs

3.38 The evidence and submissions received by the committee was in agreement with the view of the Primary Industries Ministerial Forum, that the current drought assistance and EC programs are no longer the most appropriate in the context of a changing climate. Submissions called for 'sweeping reforms' and a 'visionary new strategy', especially in light of a climate change.[32]

3.39 The CSIRO also submitted that there is a misalignment between the objectives of drought policy and the science used to support it:

> The objectives of drought policy focus on reducing the economic and social impacts of drought, while the science supporting drought policy has focused almost exclusively on rainfall and agricultural production. This misalignment has potential implications for the ability of policy to influence drought and agricultural production, at least in the short term. For example, a focus on rainfall and production has distracted from the development and implementation of more holistic methods for measuring the key policy outcome, such as the adaptive capacity of rural communities…[33]

3.40 The Queensland Government also queried whether it was appropriate to continue using the historical climatic record in the drought declaration process:

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30 National Review of Drought Policy, Department of Agriculture, Fisheries and Forestry website, http://www.daff.gov.au/agriculture-food/drought/national_review_of_drought_policy (accessed 16 July 2008).

31 The Hon. Tony Burke, MP, Minister for Agriculture, Fisheries and Forestry, 'Drought policy for Australia's future', Media Release DAFF08/046B, 23 April 2008, available at http://www.maff.gov.au/media/media_releases/april_2008/drought_policy_for_australias_future (accessed 16 July 2008).

32 Growcom, *Submission 31*, p. 13; NFF, *Submission 24*, p. 6.

33 *Submission 32*, p. 28.

> Using the historical record for drought declaration processes may no longer be indicative of future conditions, with implications for sensible drought planning. Drought assistance programs were not designed to cope with long-term climatic change.[34]

3.41 Several general criticisms were made of the drought assistance and EC programs. The Rural Business Development Corporation (RBDC) described the current programs as being of 'limited use'. RBDC is of the view that assistance could be provided in a timelier and less complex fashion.[35] The Agricultural Alliance on Climate Change stated that current drought policy is 'entirely reactive', providing little or no active support for the adoption of locally appropriate drought management strategies.[36] Growcom were of the view that current programs 'fail to provide real assistance' to horticulture industries and enterprises and believes that the programs will not cope with new and additional demands driven by climate changes.[37]

3.42 One specific criticism that was made of current drought assistance and EC programs was that these measures may, in some cases, merely prolong the life of unviable or unproductive enterprises and hinder structural change. This particular criticism appeared to be directed more to business assistances measures, such as ECIRS, than social welfare measures, such as ECRP.

3.43 For example the RBDC highlighted specific concerns with interest rate subsidies, which RDBC believes may provide greater benefit to poorly managed farming enterprises:

> …providing an interest rate subsidy across all farm debt means in practice that considerable assistance is provided to those farmers who have a high debt prior to the EC event and conversely farmers who operate under low debt scenarios as a matter of course receive less. The level of debt that a business has prior to the EC event will be a function of the stage the business is in i.e. expanding versus consolidation, but high debt levels could also reflect an accumulation of trading losses. This would mean that greater assistance would be going to poor performing businesses. This inequity can be divisive within affected communities where all farmers have been impacted by an adverse season.[38]

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34 *Submission 30*, p. 14. See also: the Agricultural Alliance on Climate Change, *Submission 37*, pp 19-20.

35 *Submission 15*, p. 2. See also Primary Industries and Natural Resources Curriculum Centre TAFE NSW, *Submission 4*, p. 2.

36 *Submission 37*, p. 20.

37 *Submission 31*, p. 13.

38 *Submission 15*, p. 2. See also: The Australia Institute, *Submission 21*, extracted from The Australia Institute, *Taxpayers Soaked*, Newsletter no. 43, June 2005; Agricultural Alliance on Climate Change, *Submission 37*, p. 19; Apple and Pear Limited, *Submission 23*, pp 7-8.

3.44 In evidence to the committee Mr Ben Fargher of the NFF acknowledged that interest rate subsidies are 'not a perfect tool', but argued that such measures may still be appropriate in some circumstances:

> …what about the young people out there that will only get through this current drought because of that instrument and go on to be good farmers for years and years?[39]

Proposals to improve drought assistance

3.45 The committee received substantial evidence on proposals to change government drought assistance programs, making the programs more appropriate to a changing climate.

Improved decision making and risk management strategies

3.46 A number of submissions highlighted the need for assistance programs to be focussed more on drought preparedness by enabling farmers to plan for, and manage, the risks of climate change. For example, Growcom submitted that:

> [w]hile some improvements have been made to shift the emphasis of assistance programs towards risk management, major reforms are still needed. The likely implications of projected climate changes must be incorporated into future arrangements for drought, exceptional circumstances and natural disaster support programs.[40]

3.47 Growcom advocated the need for drought policies and programs to have a strong focus on 'supporting proactive risk management and advanced agricultural business planning for a drier, hotter climate'.[41]

3.48 Meat and Livestock Australia and the Cattle Council of Australia also commented on the need for assistance to incorporate climate change into management strategies:

> There is an immediate need for improved knowledge and tools to enable producers to build climate changes into current management strategies. Improved seasonal climate forecasts at appropriate regional scales that are based on dynamic climate models incorporating human-induced climate change as well as natural variability will form the basis of decision support tools for greater resilience.[42]

3.49 The Queensland Government outlined its investment in the development of climate forecasting systems to assist farmers in their business decision making:

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39 Mr Ben Fargher, Chief Executive Officer, NFF, *Committee Hansard*, 1 July 2008, p. 34.

40 *Submission 31*, p. 13.

41 *Submission 31*, p. 13.

42 *Submission 36*, p. 6.

> The Queensland Government has also invested … in drought preparedness programs to help producers be better prepared for drought and climate variability. These include the development of climate forecasting techniques and a range of farm management tools that practically integrate these climate forecasting systems into producers' operations. Queensland Government climate forecasting systems … have become widely adopted internationally. Continued development of these applied forecasts and integrated decision support tools are integral to ensuring producers are able to adapt to an increasingly variable climate.[43]

Diversifying farm income sources

3.50 A number of submissions also noted a role for the development of diversified income sources for farmers as a means of sustaining the agricultural sector through drought and reducing reliance on government assistance.

3.51 The Agricultural Alliance on Climate Change discussed 'building the resilience of rural livelihoods by increasing the diversity of farm income sources' as an effective and measurable objective for drought policy.[44]

3.52 Mr Tim Wiley and Mr Bob Wilson note that farmers require off farm income to sustain them through periods of drought. According to Mr Wiley and Mr Wilson, in the Mid West region of Western Australia farmers working part time in local mines have made a valuable contribution to both industries through the recent drought.[45]

3.53 In their submission, Mr Wiley and Mr Wilson also state that there needs to be a change from drought assistance to agricultural restructure, and propose a role for carbon sinks to finance this change.[46]

3.54 The National Association of Forest Industries also highlighted the role of forestry as a complementary land use:

> Commercial scale forestry, while it is generally ineligible to access funding from assistance programs, does not require the level of assistance which often applies to agriculture. In contrast, forestry can offer a valuable complimentary land use which is less exposed than other forms of agriculture to the effects of seasonal and long term climatic variations.
>
> For instance, both native and plantation forestry, can provide a valuable source of income at both the regional and farm level during periods when extreme climatic conditions are causing an economic downturn for other

43 *Submission 30*, p. 15. See also WA Department of Water, *Submission 27*, pp 2-3.

44 *Submission 37*, p. 19.

45 *Submission 41*, p. 13.

46 *Submission 41*, p. 30.

> parts of the agricultural sector. This may be critical in supporting regional communities and individual landholders during these periods.[47]

Assistance based on shared responsibility

3.55 A common theme put forward to improve drought assistance programs was to develop a form of 'shared responsibility' on the part of receipts in exchange for assistance.

3.56 For example, the NFF proposed mutual obligation 'Climate Management Grants':

> 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.[48]

3.57 The NFF envisage that the grants could cover a variety of approved activities, for example: building stock containment; trialling new or 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.[49]

3.58 The Queensland Government discussed 'incentive-based' assistance programs:

> Consideration should be given to providing greater support for proactive incentive-based assistance programs that provide assistance based on the long-term efforts of an enterprise to improve land care management and farming sustainability. Improved economically-based multivariate evaluation frameworks and models are needed to ensure that the quantum and nature of any assistance provided is guided by viability and sustainability prospects in the long-term.[50]

3.59 Both the NFF and the Queensland Government noted, however, that the operation of drought assistance programs based on shared responsibility would not preclude the need for a welfare safety net in times of drought.[51]

3.60 Meat and Livestock Australia and the Cattle Council of Australia also put forward a proposal based on incentives to encourage drought preparedness:

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47 *Submission 6*, pp 4-5.

48 *Submission 24*, p. 8.

49 *Submission 24*, p. 8.

50 *Submission 30*, p. 14.

51 See Mr Ben Faragher, CEO of the NFF, *Committee Hansard*, 1 July 2008, p. 37; Queensland Government, *Submission 30*, p. 14.

> Agriculture needs access to tax incentive/reduced loan facilities etc. to allow for serious future building, so that through a government contribution, the dollars are leveraged to minimise agricultures exposure to future droughts. The areas of 'future building' could include fodder conservation, water reticulation, soil ameliorants, off farm investment workshops etc.[52]

3.61 The CSIRO advocated a community-based system for the allocation of finite drought assistance:

> Governance systems that provide communities with authority to allocate finite amounts of assistance determined prior to droughts would reduce the open-ended nature of current incentives to seek assistance, and encourage the conservation of scarce fiscal resources. Limits on drought assistance and rules for its governance pre-agreed with local communities could help to free governments of criticism surrounding intervention during drought. Communities and governments could work together to develop locally relevant conditions for mutual responsibility that do not impede the exit of non-viable farms from the industry.[53]

3.62 The Australia Institute's preferred policy option is to progressively withdraw 'government subsidies' to agriculture in concert with a process of structural reform to help remove farmers from drought-prone areas and areas of low productivity. However, the Australia Institute acknowledges that it is unlikely that such a policy would be considered. As an alternative, the Australia Institute propose making improved environmental outcomes a condition of receiving drought assistance.[54]

Committee view

3.63 The committee notes the work of the National Review of Drought Policy and does not wish to duplicate the work of that review, or pre-empt its findings. To this end, the committee has limited its work to consideration of the short-comings of the current programs and outlining the options that have been presented to for improving drought assistance and exceptional circumstances programs. Further, the committee has refrained from making recommendations about the direction of future drought policy.

3.64 It is clear to the committee that the general view of those in the agricultural sector, and wider community, is that current drought assistance and EC programs are not the appropriate tools to cope with climate change. Climate change requires a new approach to how government assistance is provided to assist the Australian agricultural sector through times of extreme climatic events. To this end, the

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52 *Submission 36*, p. 6.

53 *Submission 32*, p. 31.

54 The Australia Institute, *Submission 21*, see The Australia Institute, *Taxpayers Soaked*, Newsletter no. 43, June 2005.

committee was encouraged by the focus in submissions for drought assistance which focuses on drought preparedness strategies.

3.65 The committee believes the agricultural sector wants to change and adapt to climate change, however the current drought has severely restricted the ability of the sector to finance such change. The committee's view is that future drought policy should therefore be aimed at assisting the agricultural sector to adjust to climate change and prepare for extreme climatic conditions. To some extent, the Climate Change Adjustment Program does this, by addressing calls for improved access to tools to assist with better decision-making and risk management strategies in the face of climate change.

3.66 The committee believes that both diversified farm income sources and shared responsibility could play a role in future drought assistance policy. However, many of the proposals presented to the committee in the course of this inquiry are still only at a conceptual stage, and would require extensive work and consultation in order to develop them to a policy stage.

Senator Glenn Sterle
Chair

Appendix 1

List of Submissions

1. Mr Nigel Carney

2. Mr Ian Bowie

3. Land & Water Australia

4. Primary Industries & Natural Resources Curriculum Centre TAFE NSW

5. Council of Australasian Weed Societies Inc.

6. National Association of Forest Industries

7. Bureau of Meteorology

8. eWater CRC

9. A3P

10. Green Institute

11. Voiceless

12. Hawkesbury Harvest Inc

13. Australian Landcare Council

14. Gwydir Valley Irrigators Association Inc

15. Rural Business Development Corporation

16. CRC National Plant Biosecurity

17. Wentworth Group

18. NSW Irrigators' Council

19. CRC for Australian Weed Management

20. Australian Energy Company Limited

21. The Australian Institute

22. Winemakers' Federation of Australia

23. Apple and Pear Australia Limited

24. National Farmers' Federation

25. Food Industry Council of Tasmania

26. Department of Water

27. Department of Primary Industries

28. Westpac Banking Corporation

29. Grains Research and Development Corporation (GRDC)

30. Queensland Government

31. Growcom

32. CSIRO

33. National Land & Water Resources Audit Advisory Council

34. Department of Agriculture, Fisheries and Forestry and the Department of Climate Change

35. Murray Darling Basin Commission

36. Meat and Livestock Australia & Cattle Council of Australia

37. The Agricultural Alliance on Climate Change

38. Future Farm Industries CRC

39. Sydney Centre for International Law

40. WA No-Tillage Farmers Association

41. Mr Tim Wiley and Mr Bob Wilson

42. Australian Soil Carbon Accreditation Scheme (ASCAS)

Appendix 2

Witnesses who appeared before the Committee at the Public Hearings

Monday, 30 June 2008
Parliament House
CANBERRA

CSIRO
Dr Mark Howden, Theme Leader, Climate Adaptation Flagship

Bureau of Meteorology
Dr Michael Coughlan, Chief Climatologist
Dr Scott Power, Principal Research Scientist

Mr Tim Wiley (Private capacity)

Mr Robert Wilson (Private capacity)

Australian Soil Carbon Accreditation Scheme
Dr Christine Jones, Founder

Land and Water Australia
Dr Michael Robinson, Executive Director, and Chair, Joint Strategy Team, National Climate Change Research Strategy for Primary Industries
Dr Sam Nelson, Executive Officer, Corporate Strategy

Murray Darling Basin Commission
Mr Jason Alexandra, Director, Water Policy Coordination
Ms Katrina Maguire, Senior Manager, Climate Change Program

Future Farm Industries CRC
Mr Kevin Goss, Chief Executive Officer

CRC for Australian Weed Management
Associate Professor Christopher Preston, Program Leader

National Association of Forest Industries
Mr Allan Hansard, Chief Executive Officer
Mr David de Jongh, Senior Forest Policy Analyst

The Green Institute
Ms Margaret Blakers, Coordinator

Tuesday, 1 July 2008
Parliament House
CANBERRA

Meat and Livestock Australia
Dr Beverly Henry, Manager Environment, Sustainability and Climate Change
Dr Ian Johnsson, General Manager, Livestock Production Innovation

Cattle Council of Australia
Mr Greg Brown, Acting President
Mr David Inall, Executive Director
Mr Jed Matz, Policy Director
Mr Hamish Munro, Councillor (NSW)

The Agricultural Alliance on Climate Change
Ms Nicolette Boele, Director, Strategic Projects

National Farmers Federation
Mr Ben Fargher, Chief Executive Officer
Mr Charles McElhone, Manager, Economics
Ms Deborah Kerr, Natural Resource Management

Wentworth Group of Concerned Scientists
Professor Michael Young, Research Chair, Water Economics and Management

Department of Water Western Australia
Mr John Ruprecht, Director, Water Resource Management

Department of Primary Industries and Fisheries, Queensland
Mr Jim Groves, General Manager, Climate and Resource Policy
Ms Marion Murphy, Senior Policy Officer, Climate and Resource Policy

Department of Primary Industries, Victoria
Mr Andrew Dolling, Director, Climate Change in Agriculture, Agriculture and Natural Resources Policy Branch

Department of Agriculture, Fisheries and Forestry and the Department of Climate Change
Mr Ian Carruthers, First Assistant Secretary, Adaptation and Land Management Division
Mr David Mortimer, Executive Manager, Climate Change Division
Dr Colin Grant, Executive Director, Bureau of Rural Sciences
Dr Don Gunasekera, Chief Economist, Australian Bureau of Agricultural Resource Economics
Mr Mark Gibbs, General Manger, Climate Change Policy
Ms Desley Darby, Acting Manager, Drought and Exceptional Circumstances
Dr John Sims, Program Leader, Bureau of Rural Sciences