Department of Water
Government of Western Australia

Our ref: CEOW147/08
Enquiries: Phillip Kalaitzis, ph 6364 7119

The Secretary
Senate Standing Committee on Rural and Regional Affairs and Transport
PO Box 6100
Parliament House
CANBERRA ACT 2600

Dear Secretary

Climate Change and the Australian Agricultural Sector

Thank you for your letter of 25 February 2008 regarding an invitation and opportunity to make a submission on the terms of reference for the above mentioned inquiry. The Department of Water has addressed the terms of reference mainly from a Western Australian and water perspective but understand the need to incorporate a national approach and to include the social and economic implications for current and possible future agricultural industries.

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;

International modelling for the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report has created an extensive suite of current generation model ensembles which have been available for interpretation of national and regional projections. Commonwealth Scientific and Industrial Research Organisation (CSIRO) and Bureau of Meteorology (BoM) have collaborated to provide a comprehensive report *Climate Change in Australia (CSIRO, BoM 2007)*, which provides a valuable source of current 'best science' establishment of preliminary scenarios at regional level in Australia. For the greater south-western area of Western Australia, which has experienced significant step changes in average rainfall over the last 30 years or so, other relevant studies exist including the reports of the Indian Ocean Climate Initiative (IOCI) and specific hydrologic modelling work by or for the Department of Water and Water Corporation.

The CSIRO/BoM report has been used in Western Australia as a source of regional scenario projections, however this broad approach will need to be supported with state-wide scoping of the issues to identify research needs and priorities before addressing priority adaptation issues at a more detailed operational scale, and projecting the likely future climate in the key agricultural production zones with some level of confidence. The implications for current farm enterprises and possible future industries will vary from region to region in Western Australia and there will be little choice for water managers and the agricultural industry but to operate in a more adaptive risk management mode.

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

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Strategies to adapt to climate change are essential for climate-dependent industries such as water and agriculture. The dominant climate change issue in risk terms is warming from carbon emissions. Any national strategy will need to clearly recognise that risks and impacts will vary significantly between the climatic regions in Australia. Such risks and impacts on climate change have emerged as major decision-making issues in water management for Western Australia. In the short to medium term, other natural and anthropogenic factors are at play in respect to regional outcomes. These may be very relevant in reconciling observed and projected change and in practical scenario building. In Western Australia these other factors include the Asian aerosol haze, multi-decadal climate variability and possible land clearing. Also, the dominant outcomes appear to have a negative impact on water availability, but their nature and priority will vary markedly across the different climatic regions of the state. A key aspect of a strategy will be the need for the agricultural industry and water managers to operate in a more adaptive risk management mode employing regional climate scenarios and regular updates from investigation and monitoring.

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

In the dryland agricultural areas of Western Australia, seasonal fluctuations in rainfall necessitate the design of reliable on-farm water supplies so that farming enterprises can continue to function in years with low rainfall. When failure occurs, carting water generates high costs to the farmer in terms of both dollars and time. A 20 percent improvement in the reliability of on-farm water supplies would generate a net gain to both the farming community and the public by releasing public funds to create and maintain community and emergency off-farm water supplies.

The 1992 to 1994 Western Australia Government study into recurrent water supply problems in dryland areas of the agricultural region concluded that a well planned, well organised and integrated approach to water supply development was required, particularly in the face of climate change.

The Rural Water Plan[1] was developed as a strategic tool to encourage rural farming communities to be involved in water supply projects; accept an element of responsibility; take ownership of local water supply assets; and engage in an ongoing planning and improvement process. By employing an integrated planning approach, it is possible to develop reliable on-farm water supplies that meet all domestic, crop spray and livestock needs in most agricultural areas. An ad hoc approach to water supply development can result in inadequate or ineffective supplies that fail during extended dry periods which are predicted to be the norm in the future.

Western Australia has assessment tools to assist the agricultural industry to decide on a strategy to improve on-farm water supply reliability. The government provides subsidies towards the preparation of comprehensive farm water supply plans and up to $20,000 grants through the Farm Water Grants Scheme to assist in implementing works to improve reliability of water supply systems.

The Western Australia Farm Water Grants Scheme has provided around $27m in grants over the last 10-15 years. The scheme continues to receive wide support from both the industry and government and has assisted the agricultural industry to cope with the impacts of the drying climate over the last 30 years or so. Its adequacy to cope with longer term climate changes cannot be predicted at this stage, however one of the fundamental

[1] The Rural Water Plan is available on the Department of Water website

features contributing to the robustness and success of the scheme is the recognition it gives to the underlying principle of self-reliance and self-sufficiency.

With respect to exceptional circumstances or emergency response programs, a declaration of 'water deficiency' is a Government response to safeguard the commercial interests of broadacre farmers at times of very dry seasonal conditions, which cause five or more farmers within a 20km radius to require a source of off-farm water. A declaration requires the Government to provide livestock water sources so that no farm is more than 40km from an emergency water source.

The application process for 'water deficiency' declaration requires a Local Government to make a formal request to the Department of Water, and for the department to then make a recommendation to the Minister for Water Resources, after consulting with the Department of Agriculture and Food, and the Rural Water Advisory Committee.

I trust that the submission is of assistance to the Standing Committee's inquiry.

Should you have further inquiries please contact Mr Phillip Kalaitzis, Principal Project Officer, Policy and Planning, the Department of Water, on (08) 6364 7119.

Yours sincerely

John Loney
A/DIRECTOR GENERAL

11 March 08