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The Secretary  
Senate Rural and Regional Affairs and Transport  
Parliament House  
Canberra ACT 2600

## **SUBMISSION TO SENATE INQUIRY INTO WATER POLICY INITIATIVES**

### **Rural and Regional Affairs and Transport Committee**

#### **Introduction**

Recent water reforms at both a National and State level are leading to improved water use and management in Australia and raising national consciousness about the need to adequately value and protect our waterways. There remain areas in need of substantial reform, however, and other areas where slow or partial uptake of the reform agenda means that river and aquatic ecosystem health continues to decline. This decline, in turn, threatens the ongoing viability of the diverse livelihoods, businesses and communities that rely on a healthy environment.

In this submission, the Inland Rivers Network and Australian Conservation Foundation draw the Committee's attention to the impacts of some recent water policy initiatives and key issues yet to be addressed. These issues are addressed under the five subheadings given in the Terms of Reference.

**Inland Rivers Network (IRN)** is a coalition of environment groups and individuals concerned about the degradation of the rivers, wetlands and groundwater of the Murray-Darling Basin. Since 1991 the Network has advocated for the conservation of biological diversity in these environments, the maintenance of essential ecosystem functions and the restoration of degraded habitats.

**Australian Conservation Foundation (ACF)** is committed to inspiring people to achieve a healthy environment for all Australians. For 40 years we have been a strong voice for the environment, promoting solutions through research, consultation, education and partnerships. We work with the community, business and government to protect, restore and sustain our environment.

**Contact:** Please call Arlene Buchan of ACF on 0407 883 907 or Amy Hankinson of IRN on 0432 053 449 if there are any questions arising from this submission.

## **(a) The development of water property titles**

### ***Addressing overallocation and overuse***

Recent water policy initiatives, including those being developed under the framework of the National Water Initiative, increase the property right or security of water access entitlements. The *quid pro quo* is that action will be taken to:

“return all overallocated or overused systems to environmentally sustainable levels of extraction”. (NWI, s.23 iv).

These two fundamental tenets of the NWI have broad stakeholder support, as evidenced in the joint ACF, National Farmers Federation (NFF) and Australian Bankers Association (ABA) statement (attached).

The NWI does not, however, include any targets or timetable for returning extraction levels to sustainable limits and only requires

“substantial progress towards adjusting all overallocated and / or overused systems” by the end of 2010 (NWI Schedule A: Draft Timetable for Implementation of Key Actions).

Whilst we understand that the pathways for addressing overallocation and overuse are to be set out in state based implementation plans, and that the National Water Commission (NWC) will only accredit implementation plans once satisfied that the above requirements will be met, various state based developments are cause for concern in this regard. Moreover, some states are pre-empting the Commission’s sign-off by claiming their plans are consistent with the NWI.

In Victoria, for example, Sustainable Water Strategies are the planning mechanisms through which the state government intends to vary or enhance the environmental water reserves of river systems to address overuse and overallocation. The Victorian Central Region Sustainable Water Strategy is currently in development and includes the Yarra, Werribee, Maribyrnong, Tarago, Latrobe, Thomson, Macalister, Barwon, Leigh, Moorabool and Gellibrand Rivers and Creeks.

We understand that modelling for projected future consumptive demand is based on:

“full utilisation of existing rights to consume water, in systems where current use is well below the maximum allowable” (Discussion Paper Central Region Sustainable Water Strategy, October 2005, p.9).

This could result in a significant increase in water extracted from these rivers because water authorities may currently use less water than they are allocated. For example, in the highly stressed Moorabool River increasing extraction from current use levels to the volume allocated under Bulk Water Entitlements could result in a 20% increase in water extraction.

In the Thompson River, scientific studies indicate that the river requires 40GL/year of environmental flow to be returned to it but the government's 10-year plan is only to return 18GL/year.

Whilst public consultation on the Central Region Sustainable Water Strategy has commenced it does not include accurate assessments of the environmental flow requirements of the regions' river systems. The results of environmental flow studies currently underway will not be collated until the 15 December 2005. The draft Sustainable Water Strategy will be prepared by the Department of Sustainability and Environment (DSE) between 15 December 2005 and 15 January 2006. While detailed projections of consumptive water demand is presented in the Central Sustainable Water Strategy Discussion Paper, there is no data quantifying the specific environmental flow requirements of the region's river systems.

This is inconsistent with obligations under the NWI to "return all overallocated or overused systems to environmentally sustainable levels of extraction". Consumptive use in rivers that are already stressed or at risk of flow stress should be capped at current use and water recovered for environmental flows to redress overallocation. These rivers should not be subject to further increases in extraction. Unless overallocation and overextraction are fully addressed, water licence holders will benefit greatly from the transfer of a public good to a private good through increased water licence security without the public getting the benefit of healthy rivers. Such an outcome would be inequitable and unacceptable.

### ***Matching Environmental Water to the Needs of the Environment***

The characteristics of environmental water allocations should reflect the ecological needs of the river, wetland etc for which they are allocated. The specific needs of freshwater assets will vary greatly depending on many factors and the frequency, duration, magnitude and seasonality of different flow components including overbank flows, low flows, summer freshes etc is crucial for maintaining or restoring the ecological values that characterise the assets.

We are concerned that some water recovery processes are proceeding without any understanding or consideration of what the ecological needs of the asset in question are and they are failing therefore to recover water with the right sort of characteristics, in terms of level of security, capacity for carry-over in dams etc.

In the 'First Step' of the Living Murray Initiative for example, around 240GL of water has been identified for recovery through efficiency and infrastructure projects. We are unaware of any discussion about the extent to which the characteristics of this recovered water will meet the needs of the six 'Significant Ecological Assets' or 'icon sites' that are to benefit from the recovered water.

We support all the current Living Murray water recovery measures but see an immediate need for the Environmental Watering Group of the MDBC to prepare an indicative portfolio of the optimum mix of water products that could best meet the ecological objectives of the First Step decision in both wet and dry years. Further water recovery efforts should then focus on ensuring that the recovered

water reflects the characteristics of the indicative portfolio rather than just target the easiest water to recover.

### ***Market Mechanisms for Returning Water to the Environment***

The development of property rights and water markets to allow trading in water extraction licences provides a new and important opportunity for governments to enter the market and purchase water which can then be returned to the environment to address overextraction. This opportunity to adopt market mechanisms for water recovery is recognised in the NWI, s79ii:

- ii) where it is necessary to recover water to achieve modified *environmental and other public benefit outcomes*, to adopt the following principles for determining the most effective and efficient mix of water recovery measures:
  - a) consideration of all available options for water recovery, including:
    - investment in more efficient water infrastructure;
    - purchase of water on the market, by tender or other market based mechanisms;
    - investment in more efficient water management practices, including measurement; or
    - investment in behavioural change to reduce urban water consumption;
  - b) assessment of the socio-economic costs and benefits of the most prospective options, including on downstream users, and the implications for wider natural resource management outcomes (eg. impacts on water quality or salinity); and
  - c) selection of measures primarily on the basis of cost-effectiveness, and with a view to managing socio-economic impacts.

We are concerned by the resistance that parties to the NWI and the Living Murray Initiative are expressing about the use of market mechanisms to address overextraction. We see no grounds for adopting such an ongoing position. Market mechanisms can and should be used as one element in a portfolio of water recovery mechanisms to address overextraction.

For example, the MDBC estimates that the intergovernmental agreement to return an average 500GL/year of environmental flow to the River Murray under the 'First Step' of the Living Murray Initiative will not be achieved within the 2009 timeframe if only infrastructure and efficiency based water recovery methods are used.

Despite this, the MDB Ministerial Council rejected calls from the South Australian Government, the Australian Floodplain Association, environmental NGOs, leading scientists - including Professor Peter Cullen amongst others - to adopt the use of market mechanisms for water recovery and instead only requested the MDB Commission to provide advice on market based options at the next Ministerial Council meeting in April 2006.

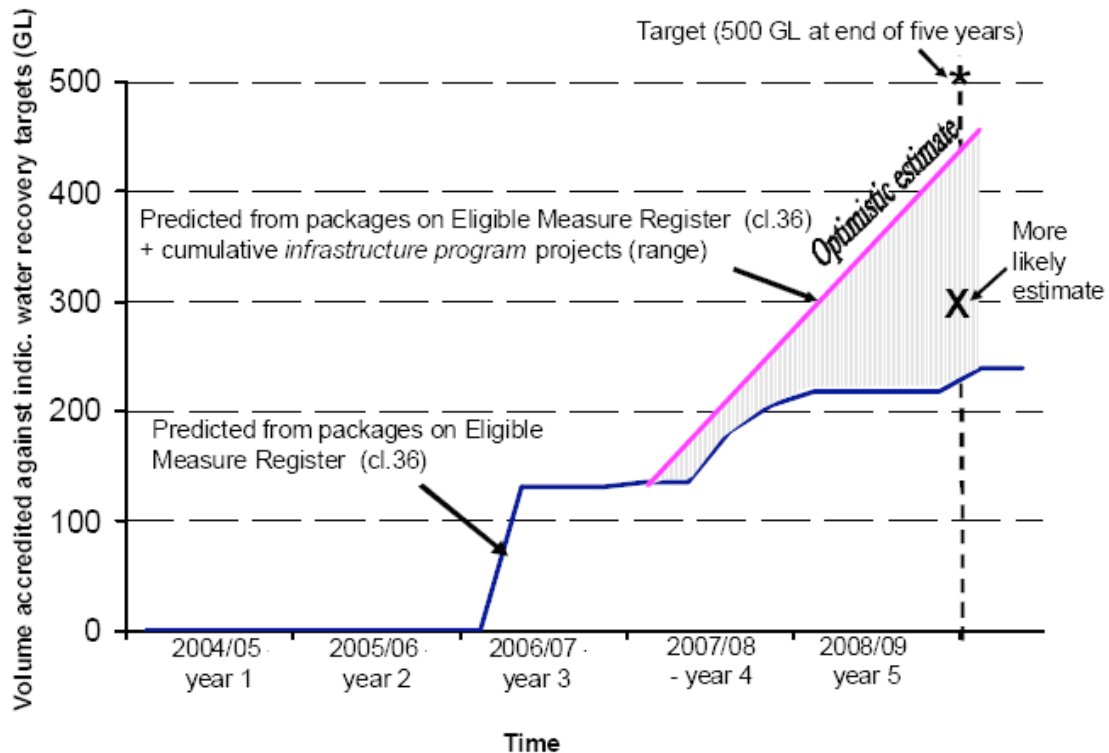


Figure showing the predicted volume of water capable of being recovered from infrastructure and efficiency measures currently identified by the parties to the 'First Step' (Graph from Attachment 3 to the MDB Ministerial Council 38 Communique).

Structural adjustment methods outlined in the recent paper by Young and McColl - "[Managing Change: Australian structural adjustment lessons for water](#)" - discusses the need to change water resource allocation so that it more accurately reflects resource constraints and scarcity, and will enhance the longevity of rural communities through more sustainable practices. Their paper also discusses methods for acquiring environmental water with positive repercussions for rural areas. These adjustment methods include the use of market mechanisms.

Recent work by ABARE Economics<sup>1</sup> discusses water 'options' contracts as a particular market mechanism for returning water to the environment as part of a portfolio of environmental water entitlements with tangible benefits for irrigation licence holders as well as the environment.

Market mechanisms should be actively embraced by all parties to the NWI as a mechanism for water recovery for the environment. This is especially so where market mechanisms provide substantially more cost effective opportunities for water recovery and therefore maximise return for the taxpayers' investment. The current restriction on the Australian Water Fund - i.e that it should be used

<sup>1</sup> Hafi, A., Beare, S., Heaney, A. and Page, S. (2005). Water Options for Environmental Flows. [www.abareconomics.com/publications/nat\\_res\\_managment/2005/e-reports/eReport\\_WaterOptions.pdf](http://www.abareconomics.com/publications/nat_res_managment/2005/e-reports/eReport_WaterOptions.pdf)

for infrastructure and efficiency measures only - is uncalled for and should be removed.

We acknowledge and support the recent 'Riverbank' announcement by NSW Premier Iemma to invest \$105 million to buy water entitlements in inland NSW; prioritising the Macquarie Marshes, Gwydir Wetlands, Lowbidgee Floodplain and the Narran Lakes. This substantial investment should make a significant difference to the long-term future of these stressed river and wetland systems, especially if matching funding is forthcoming from the Australian Water Fund.

We also note that South Australia is advocating for the direct purchase of water for the environment and particularly to return 500 GL of environmental flow to the River Murray by 2009 as part of the intergovernmental 'Living Murray Initiative'.

We call on the Australian Government to match NSW's Riverbank commitment, and to work with all governments to embrace large-scale licence buy-back as a means to returning water to the environment and in particular with all Living Murray states to use market mechanisms as part of the 'First Step'.

### ***Floodplain Harvesting***

In NSW and Queensland the development of private property rights in water has occurred without addressing the issue of floodplain harvesting and works on floodplains. This is of great concern to environmentalists and downstream water users including floodplain graziers.

Overland flow is linked to downstream river flow. It makes an important contribution to natural flow variability and the connectivity of floodplains with river channels. Harvesting overland flow for storage and subsequent irrigation use has huge implications for downstream river and wetland health, as well as on downstream users, and must be addressed immediately. Immediate resolution of this conflict is needed to provide greater certainty and fairness to non-irrigation water users and the environment.

Poor measurement and metering mean that the total amount of water diverted under this practice is not known and the low to zero cost of harvesting such water has driven its uncontrolled development over a very short period of time. In the Gwydir River catchment for example, storage capacity has increased from a practically negligible amount at the beginning of the 1970's to in excess of 400 GL today.

Excessive floodplain harvesting is responsible, amongst other things, for the reduction in river flow to the Gwydir wetlands causing a decline in the quantity and quality of native vegetation, reduction in native fish, frogs, reptiles and waterbird breeding events. The decline in the environmental values of aquatic ecosystems like The Gwydir Wetlands is contrary to Australia's obligations under the Ramsar Convention. Similar effects are seen in other wetlands downstream of areas where floodplain harvesting occurs including the Narran Lakes, the Lowbidgee floodplain and the Macquarie Marshes.

Policies must be developed that refer to all flood-works so that their implications for catchment management can be assessed. It is also essential to ensure that floodplain harvesting is accountable and adequately managed. As with river flows, overland flow extraction must be capped. Where the initial cap is ecologically unsustainable, water should be recovered and returned to the environment using the full suite of water recovery mechanisms set out in the NWI.

### ***Condamine Balonne Water Planning Process***

A large number of off-stream storages have been built in recent years and the infrequency and small magnitude of flows within the Lower Balonne is of great concern to NSW. Criticism has also arisen following the recent water reform process in Queensland, with issues of process and inadequate consultation raised, as well as strong concerns regarding the levels of extraction permitted or at least acquiesced to. The negative impacts of this development and the reform process have been felt acutely by graziers in the Lower Balonne and the environment. The submission on the draft water resource plan made by the 'Environment Groups' to the QLD government is attached<sup>2</sup>.

### ***The Murray-Darling Basin Cap***

*General:* Cap implementation in 1995 has driven water use efficiency resulting in decreased returns to rivers from irrigation districts<sup>3</sup>. The Cap for irrigation districts is defined as the net diversion, which is the gross diversion from the off-takes less the return flows. A reduction in drainage returns increases the effective net diversion to irrigation districts and decreases the downstream flow regime, but the increase is not reflected in the accounts kept for monitoring Cap compliance.

The drainage from NSW has reduced by a step-change in the order of 26.5 GL/year post -1993/94 and the drainage from Victoria is reducing by 9.7 GL/year since 1990/91 corresponding to a total reduction of around 68 GL/year since 1993/94<sup>3</sup>. The Cap should be adjusted to reflect this effective increase in water use for irrigation and loss of water to the environment to prevent the ongoing erosion of environmental water.

*New South Wales:* The Murray-Darling Basin Cap has not been fully implemented in NSW, despite being established over a decade ago. The NSW Government agreed on a Barwon-Darling Cap in July of this year but has not yet implemented it and we understand that water extractions in the system remain well above the Cap level. It is unreasonable to further delay implementing the Cap in light of ongoing environmental decline and water users' need for investment certainty.

The Cap strategy as agreed, however, is flawed because:

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<sup>2</sup> Accessed via: <http://www.irnsw.org.au/pdf/CondamineBalonneWRP.pdf>

<sup>3</sup> MDBC Technical Report 2002/2003. Prepared by Prasad, A & Close, A. Analysis of Irrigation Returns from Irrigation Districts in New South Wales and Victoria.

- The 173 GL up-front credit is a blatant Cap violation and provides an unjustified privilege to this valley that no other valley in the southern MDB has benefited from;
- Continuous accounting potentially allows irrigators to extract very large volumes of water in a single year. If any single year were to be a dry(ish) year, there could be serious environmental consequences;
- Allowing a 173GL/year credit provides insurance against climate change for irrigators and irrigators alone. Assuming that the next 100 years are climatically much like 1891-1997, then having a 173GL/year credit works as an average. However, if the next 100 years are drier than 1891-1997, as predicted by climate change studies the 173GL/year average is too high and would erode the security of the environment's water.

*Queensland:* Several systems remain excluded from the MDB Cap including the Border Rivers, Condamine-Balonne, Moonie and Warrego systems. This is unreasonable given that the southern states have been subject to the Cap for a decade and further, given the impact that overextraction in the Condamine-Balonne, for example, is having on the environment and downstream users, and the inadequacy with which this is being addressed through the 'resource operations plan' (see above for details).

#### **(b) Methods of protection for rivers and aquifers**

River and aquifer protection requires a range of tools reflecting the complexity of the issues facing riverine ecosystems. Many are catchment-wide issues that need to be dealt with through broader scale planning and regulation of water management. Developing a system of protected, high-conservation value areas is an essential plank in a good planning framework and would provide in-situ protection of areas from externally driven problems. A system which recognises and incorporates a range of values, from cultural to environmental also encourages local stewardship and attracts investment into regional communities for example through tourism, co-management by government and communities, regional development and new jobs.

Also, the National Water Initiative requires the Parties to:

“identify and acknowledge surface and groundwater systems of high conservation values, and manage these systems to protect and enhance those values; (NWI s. 25 x).

However, it does not provide a mechanism for doing so.

Please find attached the IRN and ACF “*Vision for a Framework under the NWI for the Protection of High Conservation Value Freshwater Areas in Australia*” which we submit as our proposal of a mechanism to implement NWI s. 25 x) and also fulfil Australia's international and national commitments related to aquatic biodiversity conservation and water reform.

Please also find attached the draft proceedings of the “*Freshwater Protected Areas in Australia*” Conference, held in September 2004 by World-Wide Fund

for Nature (Australia) and the Inland Rivers Network. We hope these documents provide a useful reference for the Committee.

### *Environmental Flows*

The water reforms have attempted to improve the quality and quantity of river flows to more closely mimic natural flow variability. However, the problem of high summer flows is an unresolved problem which may well be exacerbated by trading. High and/or constant flows can have a number of negative impacts, as commented on by Jones in "*Managing the Ecological Risks of Water Trading*"<sup>4</sup>. There is a need for these impacts to be mitigated, for example by setting a maximum summer channel capacity limit.

### **(c) Farming innovation**

Please see comments about dealing with floodplain works generally under heading (a).

There is ample opportunity for ongoing investment in improved water use efficiency measures, by reducing loss through seepage and evaporation from water storages or during irrigation water transmission, for example as described in 'The Business of Saving Water'<sup>5</sup>.

We welcome such investment provided the measures do not erode existing environmental flow, for example, by preventing seepage that would otherwise be returned to the river flow via ground water connectivity or have any other environmentally detrimental effect.

There are clearly opportunities for partnerships between business and government in jointly investing in efficiency projects and using public money to leverage private investment in adopting farm-based innovation. All investment of public money should result in commensurate public benefit, and water recovered as a result of public investment must be returned to the environment rather than the consumptive pool.

More broadly, there is an urgent need for a national policy framework that drives large-scale private investment in a wide variety of commercial-environmental ventures. Such a framework should aim to take account of the three broad layers in the investment chain: capital, natural resource, and technical expertise. It could do so by providing a mixture of measures concentrating on closing information gaps, funding high-priority activities, and providing incentives for commercial investments that deliver environmental gains. It should serve to build the capacity of private land and water managers and investors to explore and identify new commercial opportunities that demonstrate multiple environmental benefits. Governments should provide incentives for private land and water managers to disclose detailed information about

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<sup>4</sup> *Watershed*, CRC for Freshwater Ecology Newsletter, April 2005.

<sup>5</sup> The Pratt Water Murrumbidgee Project: [www.napswg.gov.au/publications/pubs/pratt-water-main.pdf](http://www.napswg.gov.au/publications/pubs/pratt-water-main.pdf)

environmental conditions on their property and their plans for managing emerging threats.

Ideally, the framework should employ policy instruments and investment vehicles that governments and investors are familiar with and have been tried and tested in other policy areas. Such instruments and vehicles have already been put to good use augmenting public investments in the business innovation, health care, built infrastructure and other spheres.

To be strategic, the framework would have to ensure that only those private ventures investments that were aligned with national priorities, and regional NRM targets and standards would receive concessions and incentives. In this way only ventures that successfully aligned private interests with the public good would receive public assistance to enable them to become self-sustaining.

Importantly, these schemes would add a powerful new tool to the kit of regional communities, and enable regional NRM groups to steer private land and water management in sustainable directions..

In 2001, ACF, CSIRO Land & Water and a group of companies with a large stake in rural Australia commissioned the Allen Consulting Group to explore options for leveraging private investment in sustainable land and water use. ACG proposed five key elements to catalyse and guide such investment<sup>6</sup>:

- Statutory investment companies, as tax-preferred investment vehicles, to raise access to private capital for accredited commercial-environmental ventures;
- An integrated package of taxation offsets and concessions tailored to make environmental investments more attractive, with the aim of revenue neutrality;
- Nationally agreed accreditation criteria of plans for commercial-environmental ventures to ensure consistency with national and regional NRM priorities;
- Seed funding to be made available for innovative commercial ventures that yield verifiable environmental benefits;
- A national statutory Fund to administer these programmes and concessions.

The NWI and the Australian Water Fund is an example of progress towards these elements, although clear gaps remain in the framework.

#### **(d) Monitoring drought and predicting farm water demand**

The implications of drought for the environment and producers that depend upon a healthy environment are becoming more acute as reduced flows in regulated systems mean the lower reaches and floodplains of many rivers are receiving very little water. Areas that have been severely adversely impacted by

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<sup>6</sup> Allen Consulting Group (2001) *Repairing the Country: Leveraging Private Investment*, A report to the Business Leaders' Roundtable. ACG, Canberra & Sydney. Available online at [www.acfonline.org.au/uploads/res\\_private\\_investment.pdf](http://www.acfonline.org.au/uploads/res_private_investment.pdf)

the current drought such as Chowilla Floodplain, the Coorong and the Murray Mouth have seen many droughts worse than the current one and been less impacted. This is because even during severe droughts, occasional freshes and floods are sufficient to maintain the viability of the environment. However, under the current level of regulation such intermittent flows are captured, stored and used for irrigation, exacerbating greatly the impact of the drought on the environment.

Monitoring drought and predicting farm water demand is also difficult when water is still not fully accounted for. In particular, with floodplain harvesting still being largely unregulated it is difficult to make any accurate plans for equitable water sharing and demand management.

**(e) The implications for agriculture of predicted changes in patterns of precipitation and temperature.**

Much uncertainty remains about the precise scale, timing, impacts and implications of anthropogenic climate change on patterns of precipitation and temperature in Australia but it is likely to have major impacts on agriculture.

Some scientists predict, for example, that climate change is likely to cause a 5% or 1,100GL/year reduction in system inflows to the River Murray by 2023 (see table below). Given that the Living Murray Initiative currently only seeks to return 500 GL of water to the grossly overextracted and stressed River Murray by 2009, further steps are crucial just to keep one step ahead of the momentum of climate change!

Given that scientists<sup>7</sup> recommended at least 1,500 GL of water should be returned to the River Murray to provide it with just a “moderate chance” of being restored to health, without considering the above mentioned predicted climate change impacts, it emphasises the need for action beyond the ‘First Step’. Given the critical condition of the River Murray, we strongly suggest that work on what the second and subsequent steps could look like should begin straight away and not be delayed until post-implementation of the ‘First Step’.

More generally, the risk of climate change-induced reduction in river inflows means it is imperative that water is fully accounted for so that any risk assignment framework is meaningful, the impacts of climate change clear, and necessary resilience-building strategies undertaken in good time.

We would welcome further debate on around managing the impacts of drought on people, businesses and landscapes in this, the driest inhabited continent with a notoriously unpredictable and variable climate.

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<sup>7</sup> Ecological Assessment of Environmental Flow Reference Points for the River Murray System. Interim Report prepared by the Scientific Reference Panel for the MDBC, Living Murray Initiative. 2003.

<b>Impact of Climate Change on the River Murray in terms of:</b>	<b>Most Likely Change in System Inflows by 2023</b>	<b>Most Likely Change in System Inflows by 2053</b>
<b>Percentage reduction in inflow</b>	<b>-5%</b>	<b>-15%</b>
<b>GL/year</b>	<b>-1100</b>	<b>-3300</b>

Source: CSIRO (2004).

The effects of climate variability will be, however, be compounded by climate change. Irrigated agriculture must adapt so as to co-exist with a healthy environment and other water users such as floodplain graziers of inland NSW or the increasingly rare commercial fishers of the Lower Lakes and Coorong of the River Murray.