
The Parliament of the Commonwealth of Australia

Of drought and flooding rains

Inquiry into the impact of the Guide to the Murray-Darling Basin Plan

House of Representatives
Standing Committee on Regional Australia

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Title words taken from 'My Country' by Dorothea Mackellar, who was born in the Basin town of Gunnedah.



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Foreword

The Murray-Darling Basin is one of the most productive food and fibre regions of Australia with a rich diversity of communities, landscapes and environments. However, growth in the extraction of water in the second half of last century means we need to find a better balance between the productive use of water resources and the environment. But this must be done in a way that includes Basin communities and helps them have certainty and confidence about their future.

The release of the Murray-Darling Basin Authority's *Guide to the proposed Basin Plan* in October 2010 sent shockwaves through the regional communities of the Basin for no good reason. The Guide has no status under the *Water Act 2007*. It was merely intended to provide an insight into the MDBA's thinking as they developed the proposed Basin Plan.

Through the Guide, the MDBA suggested sustainable diversion limits they considered necessary to ensure the Basin's environmental health. Unfortunately, the way the MDBA went about developing and communicating this document and the scale of reductions it proposed invoked a high degree of anger and bewilderment in Basin communities.

Through this inquiry, the Committee has had the privilege of visiting regions throughout the Basin and speaking with many of its residents. We heard people's frustration, uncertainty and anxiety due to the Guide. In contrast to the response afforded to the MDBA, the Committee felt welcome in the many towns we visited and held public hearings.

The Committee heard a clear recognition from the people we met in our travels throughout the Basin that change is needed. There was a clear acknowledgement that some water needed to be returned to sustain the environment and Basin communities. The Committee heard that a Basin Plan is an appropriate way to achieve this - but not a Basin Plan as set out in the Guide. The community recognises that without a healthy river, there are no healthy communities.

This report shows that there is an alternative way to achieve this without the pain many perceived would result from the Guide if it in fact became the Plan. It demonstrates that, by engaging local communities and states and territory governments, win-win solutions can be found to offset the reductions of a future Basin Plan and provide for the environment.

From the very south to the top of the Basin, the Committee heard of water savings that could be found through environmental works and measures and on-farm efficiency works. As a result of asking the community what solutions they have, we were able to identify a number of measures. The Committee recommends that they be explored prior to considering any reduction in productive water allocation.

It is clear that the current arrangements do not lend themselves to delivering on locally developed proposals. This would require more flexibility than a government department can provide. It needs a higher level of engagement with local landholders and local authorities than a government department can provide. This report identifies a way to achieve these outcomes through a joint venture arrangement with the state and territory governments of the Basin.

There are few examples in Australia's history of reform on the scale set out in the Water Act. On top of decades of reform, including the introduction of water markets and water planning, the scale of change that Basin communities are now being asked to accept is significant. It will take a concerted effort by all governments involved to set aside their parochial tendencies and work together to help these communities adapt and thrive in the face of this change. We owe it to these people, to their willingness to help address poor decisions made by state and Commonwealth governments in the past, to find a way forward that helps build a more productive and sustainable future for the Basin.

Finally, I thank my committee colleagues – Deputy Chair Sid Sidebottom, Kirsten Livermore, Michael McCormack, Rob Mitchell, Sharman Stone, Dan Tehan and Craig Thomson as well as the inquiry's supplementary members – Steve Gibbons, Sussan Ley, Patrick Secker and Tony Zappia – and the Committee's secretariat for their dedication to the inquiry and congratulate them on the way in which they have worked together. I would also like to thank the many people and organisations who welcomed us into their communities, appeared as witnesses and took the time to prepare submissions.

Tony Windsor MP
Chair



Membership of the Committee

Chair Tony Windsor MP

Deputy Chair Sid Sidebottom MP

Members Kirsten Livermore MP
 Michael McCormack MP
 Rob Mitchell MP
 Hon Dr Sharman Stone MP
 Dan Tehan MP
 Craig Thomson MP

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Terms of reference

The Standing Committee on Regional Australia will inquire into and report on the socio-economic impact of the Murray Darling Basin Authority's 'Guide to the Proposed Basin Plan' (the Proposed Basin Plan) on regional communities, with particular reference to:

- the direct and indirect impact of the Proposed Basin Plan on regional communities, including agricultural industries, local business activity and community wellbeing;
- options for water-saving measures or water return on a region-by-region basis with consideration given to an analysis of actual usage versus licence entitlement over the preceding fifteen years; and
- the role of governments, the agricultural industry and the research sector in developing and delivering infrastructure and technologies aimed at supporting water-efficiency within the Murray-Darling Basin.

In examining each of these issues, the Committee will also consider community views on:

- measures to increase water efficiency and reduce consumption and their relative cost-effectiveness;
- opportunities for economic growth and diversification within regional communities; and
- previous relevant reform and structural adjustment programs and the impact on communities and regions.

This will include consultation with local government, Regional Development Australia, community groups and individual stakeholders to better understand the local and community issues raised by the Proposed Basin Plan.



List of abbreviations

ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACT	Australian Capital Territory
ADIC	Australian Dairy Industry Council
ASGE	Achieving Sustainable Groundwater Entitlements
CEWH	Commonwealth Environmental Water Holder
CICL	Colleambally Irrigation Co-operative Limited
COAG	Council of Australian Governments
CRRMH	Centre for Rural and Remote Mental Health
CSG	Coal Seam Gas
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Department of Agriculture, Fisheries and Forestry
EIS	Environmental Impact Statement
GAB	Great Artesian Basin
GDP	Gross Domestic Product
GVAP	Gross Value of Agricultural Production
GL/y	Gigalitre/year
GVIAP	Gross Value of Irrigated Agricultural Production

IRN	Inland Rivers Network
LGA	Local Government Area
LNG	Liquefied Natural Gas
MDB	Murray-Darling Basin
MDBA	Murray Darling Basin Authority
MDBC	Murray Darling Basin Commission
MIL	Murray Irrigation Limited
NSW	New South Wales
NWC	National Water Commission
NWI	National Water Initiative
NWP	National Water Program
PM	Prime Minister
Qld	Queensland
R & D	Research and Development
RMC	River Murray Commission
SA	South Australia
SDL	Sustainable Diversion Limit
SEWPAC	Department of Sustainability, Environment, Water, Population and Communities
SRWUIP	Sustainable Rural Water Use and Infrastructure Efficiency Program
TIA	Torumbarry Irrigation Area
WFR	Water for Rivers
WSP	Water Sharing Plan
WUE	Water Use Efficiency

WftF Water for the Future

Vic Victoria



List of recommendations

2 The Murray-Darling Basin

Recommendation 1

The Committee recommends that the Commonwealth Government commission a study to identify all regulations and agreements in place that inhibit the efficient management of water in the Murray-Darling Basin and, where appropriate, work with the states to remove these regulations.

3 The Guide

Recommendation 2

The Committee recommends that the Murray Darling Basin Authority apply greater rigour to the assumptions made to develop the proposed sustainable diversion limits, including the forecast impact of climate change, taking into account regional variability.

Recommendation 3

The Committee recommends that the Murray Darling Basin Authority improve data on groundwater availability, use and connectivity with surface water prior to proposing sustainable diversion limits for groundwater.

4 Engagement with the community

Recommendation 4

The Committee recommends that, in developing the proposed Basin Plan, the Murray-Darling Basin Authority must:

- develop a community engagement strategy, tailored for each catchment community, focussed on transparency of process with clear and meaningful opportunities for local communities to contribute;
- engage all Basin stakeholders, including local, state and territory governments in a genuinely inclusive and respectful manner;
- draw upon local knowledge and expertise;
- recognise the social and cultural needs of Aboriginal people;
- clearly communicate the need for a Basin Plan;
- clearly communicate the process, roles and responsibilities for the implementation of the Basin Plan, including:
 - ⇒ the role of the Basin Plan;
 - ⇒ the role of Commonwealth water recovery programs;
 - ⇒ the roles and responsibilities for state and territory governments in water resource planning under the Basin Plan; and
 - ⇒ linkages and partnerships between Commonwealth, state and territory governments and relevant agencies within each jurisdiction in the implementation of the Basin Plan.

Recommendation 5

The Committee recommends that the Commonwealth Government develop separate community basin planning that provides:

- localised and targeted structural adjustment packages;
- the development of localised economic development plans supported by workforce development and training packages to support Basin communities;
- strategies for enhancing communities (with particular focus on mental health support services and investment in social infrastructure); and
- recognition of the specific needs and economic circumstances of Aboriginal communities living in the Basin.

The development of this plan must be in partnership with states, local government and the community.

Recommendation 6

The Committee recommends that the Commonwealth Government ensure that the mining industry is placed under the same obligations as other water users in the Murray-Darling Basin by ensuring:

- that no mining activities are approved that impact on Basin water resources until such time that the impact of such activities is fully understood and able to be mitigated; and
- relevant legislation/regulations are applied with a specific focus on mining activities in the Basin as a matter of urgency to ensure that the long-term health and productivity of water resources are protected.

5 Water purchase and infrastructure investment

Recommendation 7

The Committee recommends that the Commonwealth Government immediately cease all non-strategic water purchase in the Murray-Darling Basin and take a strategic approach to water purchases that prioritises the lowest possible impact in communities.

Recommendation 8

The Committee recommends that the Department of Sustainability, Environment, Water, Population and Communities, in all future water purchases:

- be more responsive to proactive sellers; and
- prior to any water purchase process, identify the consequences for the community.

Recommendation 9

The Committee recommends that the Commonwealth Government focus greater investment in on- and off- farm water saving projects.

Recommendation 10

The Committee recommends that the Commonwealth Government:

- identify and assess the viability of environmental works and measures as identified throughout this report and by the community; and
- implement any viable measures as quickly as possible.

Recommendation 11

The Committee recommends that the Commonwealth Government, in partnership with the Basin states and the Australian Capital Territory, develop a framework addressing the monitoring, compliance and enforcement of Basin water resource use.

Recommendation 12

The Committee recommends that the Commonwealth Government identify and rectify all impediments to irrigation investment in the taxation system.

Recommendation 13

The Committee recommends that the Commonwealth Government develop and implement options for tax based incentives for efficient irrigation investment as part of the implementation of the Basin Plan.

Recommendation 14

The Committee recommends that the Commonwealth Government focus greater investment into research and development to improve irrigation efficiency.

Recommendation 15

The Committee recommends that the Commonwealth Government establish a national water fund to:

- invest in on- and off-farm water saving projects;
- invest in environmental works and measures; and
- invest in research and development to improve irrigation efficiency.

Recommendation 16

The Committee recommends that the Commonwealth Government consider establishing a national water fund manager that may:

- take a strategic, localised approach to water purchase;
- in special circumstances, sell surplus environmental water as well as purchasing additional water when needed;
- identify and invest in irrigation and environmental infrastructure projects.

6 Delivering the Basin Plan**Recommendation 17**

The Committee recommends that the Commonwealth Government fund the development of a plan, in partnership with the States and Australian Capital Territory, for the implementation of the Basin Plan.

Recommendation 18

The Commonwealth Government, through the Council of Australian Governments, seek agreement with Basin states on a cooperative model for developing water resource plans in which the Murray-Darling Basin Authority, the Commonwealth Environmental Water Holder and state and territory water agencies sit together with regional stakeholders to develop each water resource plan.

Recommendation 19

The Committee recommends that the Commonwealth Government clearly communicate to Basin communities the purpose of the Environmental Watering Plan and how it would be implemented at a regional level.

Recommendation 20

The Committee recommends that the Commonwealth Government establish a dedicated agency to be led by the Commonwealth Environmental Water Holder with a focus on:

- developing the scientific and engineering expertise to deliver an efficient environmental watering plan;
- improving knowledge of the water needs of environmental assets and how best to manage them; and
- transparency and accountability to its key stakeholders, including the community.

Recommendation 21

The Committee recommends that the Commonwealth Government charge the National Water Commission with responsibility for auditing and reporting on:

- the management and use of environmental water by the Commonwealth Environmental Water Holder and the manager of the proposed national water fund on an annual basis, including:
 - ⇒ the volume of water recovered for the environment;
 - ⇒ use of the proposed national water fund, including investment in irrigation efficiency and environmental works and measures;
 - ⇒ the use of environmental water including volume, location, timing and outcomes achieved; and

- ⇒ entitlements and allocations strategically purchased or sold, including location, timing, products (security and reliability), average long term volume and average value per megalitre.
- the transition to and implementation of the Basin Plan, on a five-yearly basis, including:
 - ⇒ the efficacy of state water resource planning;
 - ⇒ Commonwealth investment in irrigation and environmental infrastructure projects;
 - ⇒ the accumulation of environmental water, including any water purchase programs;
 - ⇒ the impacts of government reform activities on the socio-economic well being of communities;
 - ⇒ the influence of government purchasing activity on the water market; and
 - ⇒ the use of environmental water and the achievement of environmental objectives.

Introduction

- 1.1 The Murray-Darling Basin is one of the most productive food and fibre regions of Australia. Despite comprising only 14 per cent of the country's land mass, the Basin produces, on average, 45 per cent of Australia's irrigated agricultural product. It is vital that that this region, which grows some of Australia's, and the world's, finest food and fibre continue to respond to the growing global demand for increased, and better quality, production.
- 1.2 There is a need to balance the productive use of water resources with the needs of the environment. However, there is also a pathway to achieve this outcome without destroying the socio-economic basis of communities in the Basin. This report recommends a pathway that can result in a win-win outcome for the communities and the environment.
- 1.3 This inquiry arose as a result of the Murray Darling Basin Authority's (MDBA) release of the *Guide to the proposed Basin Plan* (the Guide) which proposes the sustainable levels of diversions necessary to ensure the Basin's environmental health. The Committee, and the community, accepts that without a long-term healthy Basin river system, we cannot have long-term and healthy Basin communities and this will require extra environmental flows in some places.
- 1.4 However, the Committee has questioned the assumptions that have been expressed within the Guide. The Guide appears to rely on an 'end of system flow' measure, rather than a total catchment management approach that requires consideration of the biodiversity that contributes to the ecological sustainability of a catchment and includes the interdependence of surface and ground water, introduced and native biota, farmed and forested systems, mining, urban and irrigated water use and the climate.

- 1.5 The Committee questions the MDBA's interpretation of the *Water Act 2007* (the Act) in identifying a 'whole of Basin' sustainable diversion limit (SDL), instead of only identifying regional SDLs. The vast distances, topographic and climatic variation within the Basin renders a 'whole of Basin' SDL meaningless. The Committee considers that the MDBA's interpretation of the Act in this way as a fundamental failing in this process.
- 1.6 In a wide-ranging inquiry, touring from the very south to the top end of the Basin, the Committee identified water savings to be found through environmental works and measures and on-farm efficiency works. The report identifies some of these measures and recommends that they be fully explored prior to considering any reduction in productive water allocation.
- 1.7 Greater investment needs to be made in research and development and irrigation efficiency that can help boost productivity, and profitability, of the region.
- 1.8 The report also recommends that all non-strategic water buyback must cease immediately.¹ While the government water purchase program can and does play an important role, it is being implemented in such a way that causes significant harm to community viability, that strands assets and results in less efficient and more expensive irrigation systems.
- 1.9 The report considers community reaction to the *Guide to the proposed Basin Plan*, including a reduction in business confidence. It finds that in conjunction with a Basin Plan, there is a need for community plans to ensure that communities remain resilient and vibrant places to live. These must be developed at the local level, to identify what communities need to continue to be thriving, vibrant places to live, addressing issues such as transport, infrastructure, and workforce development and training needs. Natural resource managers, such as catchment management authorities in Victoria and New South Wales, demonstrated a strong capacity to provide this function.
- 1.10 The report also responds to concerns heard widely across the Basin that the bureaucracy is not transparent and is unresponsive to innovation. This report recommends the creation of two new bodies – a new government owned corporation to source water for the environment and a standalone

1 Recommendation 6, p. 111.

Commonwealth Environmental Water Holder – to address these concerns.²

- 1.11 These two new agencies will take on responsibilities currently held by the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPAC). The Committee heard of grave mistrust of this department across Basin communities resulting from the failure of the department to identify and respond to community concerns on a range of issues. In addition, this department has demonstrated a consistent failure to deliver water programs, including strategic water buyback, which is in the best interests of productive communities. This department should no longer be responsible for delivering these programs.
- 1.12 The Committee is of the firm view that this work should be undertaken by a government owned corporation, which would include all Basin jurisdictions as stakeholders, that also the capacity to deliver water savings through a range of measures including environmental works and on-farm efficiencies, prior to any resort to removing productive water from use. Such an agency would also have the capacity to respond to innovative irrigator-led proposals, such as those outlined in this report without the bureaucratic red tape that currently exists. The report therefore recommends the creation of an agency based on the successful ‘Water for Rivers’ company model that has proven delivery of localised water efficiency solutions.³
- 1.13 Likewise, the report has responded to community concerns and recommends that the Commonwealth Environmental Water Holder (CEWH) be established as an independent agency that has the capacity to build scientific and engineering expertise that is essential in an agency of this kind. It is a clear conflict of interest for the CEWH to sit within SEWPAC and be required to balance its statutory accountabilities with the need to be responsive to a Government Minister. The CEWH must be open and transparent with, and responsive to, the community. For this reason alone, it should not be located within an agency that has proved its incapacity to be responsive and proactive to the community.
- 1.14 The Committee emphasises that the proposed arrangements are not new layers of bureaucracy but a reassignment of function that will allow greater efficiency, cooperation with stakeholders, flexibility, accountability and transparency.

2 Recommendation 15, p. 140 and Recommendation 19, p. 158.

3 Recommendation 15, p. 140

Release of the Guide

- 1.15 On Friday, 8 October 2010, the Murray-Darling Basin Authority (MDBA) released its *Guide to the proposed Basin Plan* (the Guide). This 1 200 page series of documents sets out proposals for reductions in sustainable diversion limits (SDLs) in surface and groundwater across the Murray-Darling Basin (the Basin).
- 1.16 The MDBA released the Guide intending it to form the basis of community discussions on the subsequent Basin Plan. The proposals contained within the Guide are intended to form the basis of the Basin Plan, which will set limits on the water that can sustainably be extracted from within the Basin river and groundwater systems.
- 1.17 On the following working day, Monday, 12 October 2010, the MDBA commenced a series of community information sessions in affected Basin communities. Communities had been given no opportunity to read the lengthy and complex documents. Nor had they been given an adequate explanation of the role of the Guide or the role of community discussion in informing the resulting Basin Plan. In fact, the need for the Plan has not been adequately communicated, even within the Guide itself.
- 1.18 In these sessions, the MDBA was met by angry and concerned regional communities, including farmers, town business people and professionals, Indigenous people and individuals representing schools, churches, community organisations and local governments.
- 1.19 The MDBA has made some fundamental mistakes in communicating the Guide. While it appears that the intent of the MDBA was to be open and transparent with communities, it has instead produced a set of documents that are unduly complex and inaccessible to many readers.
- 1.20 The communication strategy adopted by the MDBA did not allow for a careful, considered, discussion within Basin communities about how to achieve a healthy, prosperous Basin. Instead, it provoked despair, anger and anxiety as communities reacted to what they felt was an attack on their livelihoods.
- 1.21 The drastic sustainable diversion limit (SDL) proposals within the Guide left many assuming that irrigators will be unwillingly stripped of their water rights or left with less efficient, or stranded, irrigation assets.
- 1.22 The proposed SDLs in the Guide failed to be placed in the context of water already returned to, or purchased for, the environment in recent years. Nor did the Guide articulate the range of ways that water could be

recovered for environmental needs in the future, for example through better or more environmental works and irrigation efficiencies.

- 1.23 The assumptions made in the Guide have led to widespread uncertainty across the Basin, which has affected investor confidence and left many questioning what will happen to the food bowl which is the Murray-Darling Basin.
- 1.24 Throughout this inquiry, the Guide has consistently been referred to as the Basin Plan. The Guide is not the Basin Plan. It is nothing but an early exposure to the assumptions and calculations which may underpin a final Basin Plan.
- 1.25 In its travel throughout the Basin, the Committee met with many people who agreed that more water needs to be returned to the environment and that a Basin Plan is necessary. Farmers were keen to point out that they are not only the nation's most productive food and fibre producers, but they are also land stewards and managers who know the importance of a healthy ecosystem to sustain their prosperity. The Basin relies on these individuals to assure its health.
- 1.26 While much of the responsibility for the fear and anxiety caused by the Guide rests with the MDBA, the failure to communicate the need for a Basin Plan is a responsibility shared by the six⁴ governments responsible for water sharing within the Basin.
- 1.27 In evidence, all Basin state and territory governments questioned the Guide but not the need for reform. Support for this major reform has been repeatedly stated through the Council of Australian Governments (COAG) over the past two decades, including the National Water Initiative in 2004.
- 1.28 The 2008 COAG agreement to establish the MDBA to prepare a whole of Basin Plan to set SDLs on water use in the Basin is the most recent and strongest endorsement of Basin wide reform by the states. This, and the preceding agreements, have all been motivated by a mutual desire to provide for the long-term health and prosperity of the Basin and safeguard the water needs of communities that rely on its water resources.
- 1.29 These governments now have a collective responsibility to demonstrate to Basin communities the need for a Basin Plan and why previous reforms have been considered not to have been successful. Communities have been through decades of reform and are exhausted by it. They have not

4 The Commonwealth, Queensland, New South Wales, Victoria, South Australia and Australian Capital Territory governments.

been given properly considered analysis of the long term requirements to maintain a healthy Basin nor adequate information about how these requirements will be achieved.

- 1.30 The Committee found, however, that even after decades of continual change, communities across the Basin are still willing to cooperate in this next round of reforms. However, trust in the MDBA, has been seriously eroded.
- 1.31 There is a clear need and desire for individuals and communities to continue to take responsibility for the health of the rivers. However, there is also clear evidence that communities in the Basin feel that consultation on water policy has been generally poor. The only way to ensure the health of the entire Basin is if all stakeholders work together on this plan for the future.

Conduct of the inquiry

- 1.32 Following the release of the Guide, the Minister for Regional Australia, the Hon Simon Crean MP, announced that he would be asking the newly formed Standing Committee on Regional Australia to undertake an inquiry into the impact of the proposed Basin Plan.
- 1.33 On 28 October 2010, at its inaugural meeting, the Committee agreed to adopt terms of reference for the inquiry.
- 1.34 The Committee sought and received submissions from a wide range of organisations and individuals, including submissions from state and territory governments, councils, employers, business organisations, industry groups, academics and unions.
- 1.35 The Committee received 645 submissions and 85 supplementary submissions. A list of submissions is at Appendix A. All public submissions are available on the Committee's website.⁵
- 1.36 The Committee received 142 exhibits provided during public hearings and inspections. A list of exhibits is at Appendix B.
- 1.37 The Committee held twenty public hearings across the four Basin states and in the ACT. The Committee heard from 274 witnesses at public hearings, and provided an opportunity at all its hearings outside of

5 <www.aph.gov.au/mdi>

Canberra for individuals to make short statements. In total 87 people provided statements to the Committee at these sessions.

- 1.38 The Committee also undertook site inspections in all Basin states. The Committee offers its sincere thanks to all those individuals, organisations and business that hosted it. These visits were invaluable to the inquiry and gave the Committee a full appreciation of the diversity of the Basin and the people who live within it. Witnesses at public hearings and site inspections are listed at Appendix C.

Structure of the report

- 1.39 Chapter 2 discusses the history of water reform in the Murray-Darling Basin, including the geography, economic and employment profile of the Basin, current governance arrangements and the need for ongoing reform.
- 1.40 The impact that the release of the Guide had on local communities is discussed in Chapter 3, including the impact on business confidence, employment projections and the existing pressures on farming communities. This Chapter also discusses the use of science and data in the Guide and the damage sustained to the reputation of the MDBA.
- 1.41 Chapter 4 makes recommendations about improving engagement with the community and the states and territory and the need for Basin community planning.
- 1.42 Chapter 5 makes recommendations about the function and impact of the Government's water purchasing program. The chapter makes recommendations about improving government investment programs and the establishment of a new national water fund.
- 1.43 Chapter 6 discusses the need for improved governance arrangements for the management and monitoring of environmental water and implementation of the Basin Plan.
- 1.44 Chapter 7 provides an overview of the report and outlines how to bring together the Committee's recommended reforms in a comprehensive new governance arrangement of the Basin, aimed at supporting Basin communities and resulting in a Basin Plan that delivers a 'triple bottom line' approach.
- 1.45 Appendices A to C are as listed above. Appendix D contains an extract from the *Water Act 2007* outlining the purpose of a Basin Plan. Appendix E lists some of the potential additional water savings identified throughout

the inquiry. Appendix F contains the Committee's interim findings as issued on Thursday, 10 February 2011 and the Ministers' response. The committee's interim findings are reiterated where appropriate within the report. Appendix G contains a diagrammatic representation of how the Committee sees a new governance model operating for the Basin.

- 1.46 Although many more issues were raised in this inquiry than are raised in this report, the Committee was cognisant of the need to report in a timely manner. The Committee refers readers, and specifically the MDBA and involved governments, to the many submissions on its website and extensive transcripts of evidence for a fuller discussion of the range of issues facing Basin communities.

What this report does not do

- 1.47 Many have called on this Committee to make recommendations on issues outside its remit, such as:
- to specify a SDL for their valley, different from that in the Guide;
 - to quarantine their region from the Basin Plan;
 - that the *Water Act 2007* be amended or withdrawn;
 - that the idea of a Basin Plan be withdrawn;
 - that the MDBA be disbanded; and
 - that individual projects be given approval or funding.
- 1.48 This report does not do any of these things. It is not the role of a parliamentary committee to write the Basin Plan, nor is it the Committee's role to preference or nominate regions to be quarantined from proposed SDLs or recommend funding individual projects.
- 1.49 The Committee does not assume to have an intimate working knowledge of each valley or river system, and therefore does not have the capacity to make judgements on the value of specific ideas put to it. The report puts the view that the only people who have this knowledge are those that are managing, working and living with the rivers and thus recommends that these are the people who should be involved in detailed planning.
- 1.50 Some questioned Australia being a party to international environmental treaties and called for these treaties to be abandoned. However, these treaties provide for no greater level of environmental health in the Basin than is required by the environment itself. In the Committee's view, being a signatory to the treaties merely places on Australia the responsibility to

be an international leader in water management – something which the land managers of the Murray-Darling Basin have demonstrated that they not only are, but continuously strive to be.

- 1.51 The report does discuss the *Water Act 2007* but does not make specific recommendations regarding its role. The Senate is currently undertaking an inquiry into the Act and that inquiry will have greater capacity to determine if the Act needs to be amended.

What this report does

- 1.52 The report sets out what is, in the Committee's opinion, a practical way forward that will result in sustainable social, environmental and economic outcomes for Basin communities.
- 1.53 The report is supportive of the concept of a Basin Plan, but only one that is developed with the support of, and in support of, the communities that will need to implement it.
- 1.54 The report steps back from the emotion engendered by this debate to focus on the willingness of all involved, from individual irrigators, to industries, to communities to councils to state, territory and Commonwealth governments, to build trusting relationships and find positive outcomes for all.
- 1.55 While the report does not recommend that individual projects proceed, it does illustrate the wealth of initiatives existing across the Basin. Case studies illustrate how, through using the knowledge existing in communities, ideas for savings are available before turning to a reduction in the productive water available to irrigators.
- 1.56 However, the report also recognises that Basin irrigators are facing a future with less water and has tried to set out a framework for how this reduction can occur while also supporting communities to thrive.
- 1.57 Among the significant issues the Committee has addressed in its recommendations are:
- the need for Basin community plans which provide support and, where necessary, provide structural adjustment measures for some impacted communities;
 - development of a national water fund to support on- and off- farm infrastructure improvements and environmental works and measures as well as water purchases;

- establishment of a government owned corporation to purchase water for the environment and invest in irrigation and environmental infrastructure works, taking this role out of the hands of a government agency; and
- improving governance arrangements for the Commonwealth Environmental Water Holder to ensure this office is transparent, efficient and accountable.

1.58 Through these and other recommendations, the report sets out a tangible way forward for the delivery of a healthy, sustainable Murray-Darling Basin well able to continue to provide world best practice production and a unique environment. The Committee calls on all those involved in the future of the Basin to accept the report's findings and work together for the healthy future of the Basin and its communities.

The Murray-Darling Basin

- 2.1 The Murray-Darling Basin covers over one million square kilometres of southeast Australia, 14 per cent of the country. It extends from just north of Carnarvon in Queensland to Goolwa in South Australia and just south of Creswick and Kilmore in Victoria.
- 2.2 It comprises 23 river valleys with climactic conditions ranging from rainforest regions, to mallee country, inland sub-tropical to arid and semi-arid land of the far west. The north is characterised by semi-arid and ephemeral river systems while the south is known for highly-regulated river systems fed from the Australian Alps.¹
- 2.3 The Basin holds great significance for its Aboriginal peoples, who for thousands of years have depended on its natural resources as well as its cultural and spiritual importance.
- 2.4 The Basin has also made a significant contribution to Australia's social and economic development, with European settlement and farming practices commencing in the 1830s. The introduction of paddle steamers to the Murray in the 1850s followed by the extension of the railway system in the 1890s meant townships and intercolonial trade grew rapidly through this colonial period.²

1 Department of Agriculture, Fisheries and Forestry (DAFF), *Submission 473*, p. 10; Murray-Darling Basin Authority (MDBA), *Guide to the proposed Basin Plan: Volume 2, Technical Background*, Canberra, October 2010, p. 10.

2 MDBA, *Guide: Volume 2*, pp. 16-17.

- 2.5 The Basin is now home to 2.1 million people and a further 1.3 million people are dependent on its water supply. It is responsible for around 40 per cent of the nation's irrigated production and produces 90 per cent of the nation's cotton, 56 per cent of its grapes, 42 per cent of its nuts and grapes and 32 per cent of the nation's dairy, all from 14 per cent of the continent's land mass.³
- 2.6 Inevitably in a region of such productivity, efficient water management is key for irrigators and governments alike and the process of water management improvement has always been part of the Murray-Darling Basin's success. The need for further water law reform has been driven by different state water law management systems and an over-allocation of water entitlements by states in some catchments.
- 2.7 While there has been bipartisan support for some reform from the Commonwealth and state governments and across political parties since the mid 1980s, it has also been a time characterised by delays and mostly inaction on the problem of addressing over-allocations. In NSW, however, some ground water and other entitlements have been slashed. Likewise in Victoria.
- 2.8 Communities are supportive of the need for ongoing water management improvements. Throughout this inquiry, the Committee has heard disagreement and disapproval of the MDBA proposals and how they were developed and communicated. However, the benefits of providing acceptable certainty and a more streamlined management approach to water access were widely accepted.
- 2.9 While there is a clear acceptance of the need to continue working towards a more sustainable healthy river system that can support stable communities and efficient agriculture, opinions differed on the scale of change required, who should bear the costs, and the timeframe for changes.
- 2.10 This chapter addresses the history of reform in the Basin, why continued change is necessary, and the 'reform fatigue' impacting on basin communities.

3 DAFF, *Submission 473*, p. 10. MDBA, *Guide: Volume 1*, p. 21.

Community and economic profile

Population

- 2.11 At the time of the 2006 census, 3.4 million people living in or near the Basin were directly reliant on Basin water. Of this figure, 2.1 million live within the Basin and 1.3 million were living in towns around the Basin, including Adelaide (1.06 million people). This represents 17 per cent of the Australian population.
- 2.12 About half (48 per cent) of the Basin population lives in 19 large urban centres. These centres experienced the highest rates of population growth, although overall the Basin grew by three per cent between the 2001 and 2006 census (national growth was six per cent). Small towns and rural localities comprise 30 per cent of the Basin population and the remaining 22 per cent live outside a population centre.
- 2.13 Canberra is the largest urban centre in the Basin, with a population of 356 120 (including Queanbeyan), representing 17.7 per cent of the total Basin population. The next largest Basin centres are Greater Bendigo (96 500) and Toowoomba (96 100).
- 2.14 The majority of the 69 500 Aboriginal Australians living in the Basin live in New South Wales.⁴

Economic contribution of Basin agriculture

- 2.15 Despite nearly half the Basin population living in urban centres, the vast majority of land use in the Basin (84 per cent) was for agriculture (see Table 2.1).
- 2.16 The gross value of agricultural production (GVAP) in Australia in the year 2008-09 was \$42 billion, or 2 per cent of gross domestic product (GDP).⁵ The Basin produces a substantial percentage of this, and thus makes a significant contribution to the national GDP and the nation's food security:

4 Unless otherwise cited, all statistics in this section taken from: Australian Bureau of Statistics (ABS), Australian Bureau of Agriculture and Resource Economics (ABARE) and the Bureau of Rural Sciences (BRS), *Social and Economic Context for the Murray-Darling Basin*, MDBA, *Technical Report Series: Basin Plan: BP02*. Canberra, September 2009. pp. v-6.

5 DAFF, *Submission 473*, p. 6.

The basin generates about 39 per cent of the national income derived from agricultural production. Agriculture contributed approximately \$14.6 billion to the basin economy in 2008-09. The basin economy (gross regional product) was approximately \$59 billion in 2000-01, representing about 8 per cent of Australian GDP.⁶

2.17 The primary water use within the Basin is for irrigated agriculture, accounting for 80 per cent of consumptive water use. The Department of Agriculture, Fisheries and Forestry reports:

Irrigated industries in the basin include broadacre crops such as rice and cotton, horticulture and vegetable crops, and irrigated pasture for dairy and hay. In 2008-09, cotton accounted for the highest proportion of irrigation water used (23 per cent), followed by cereal crops for grain or seed (20 per cent) and pasture for grazing (15 per cent).⁷

Table 2.1 Land Use, Murray Darling Basin, 2008

Land Use	Hectares	Percent %
Agriculture total	88,911,879	83.7
<i>Irrigated Agriculture</i>	<i>2,463,174</i>	<i>2.3</i>
<i>Dryland Cropping and horticulture</i>	<i>13,216,120</i>	<i>12.4</i>
<i>Grazing native or modified pastures</i>	<i>73,232,585</i>	<i>69.0</i>
Production and Plantation Forestry	3,413,900	3.2
Conservation and natural environments	11,041,052	10.4
Intensive uses (e.g. urban)	1,531,516	1.4
Mining and waste	55,100	0.1
Water (lakes and rivers)	1,246,687	1.2
<i>Total Murray-Darling Basin</i>	<i>106,200,134</i>	<i>100.0</i>

Source Bureau of Rural Sciences, 2008, from MDBA Technical Report Series: Basin Plan: BP02, p. 9.

6 DAFF, Submission 473, p. 10.

7 DAFF, Submission 473, p. 10.

2.18 Nationally, the gross value of irrigated agricultural production (GVIAP) in 2008-09 was 'just under \$12 billion, accounting for approximately 29 per cent of the total GVIAP.' The Basin's GVIAP in 2008-09 was \$4.3 billion, 36 per cent of the national GVIAP (due to drought, a fall from 53 per cent of national GVIAP in 2000-01) and 10 per cent of Australia's GVIAP.

Table 2.2 Basin commodities that contributed most to GVIAP

Commodity	Dollars \$ (million)	Percent %
Fruit and nuts	1033	24
Dairy production	791	18
Grapes	598	14

Source DAFF, Submission 473, p. 10.

Employment in the Basin

Table 2.3 Key employment sectors in the Basin

Sector	Percent % of employed persons
Wholesale and retail trade	14.3
Public administration (largely based in Canberra)	11.7
Agriculture	10.8
Education and training	10.6
Manufacturing	9.1
Healthcare and social assistance	8.1

Source Australian Bureau of Statistics, 2006 Census.

2.19 The remaining 35 per cent of employment is spread across industries such as construction, tourism, service provision (arts, administrative, professional, housing, postal and telecommunications) and mining.⁸

2.20 The impact of Basin Plan on employment in the Basin is discussed in Chapter 3.

Governance of Basin water resources

2.21 The Basin takes in multiple jurisdictions, including the Commonwealth, 140 local government areas (LGAs), four states and the Australian Capital Territory (ACT).

Table 2.4 Proportion of the four states and the ACT included in the Basin

Sector	Percent (%) within Basin	Percent (%) of Basin population	No. of LGAs
Australian Capital Territory	100	16.1	-
New South Wales	75	38.7	69
Queensland	15	10.8	27
Victoria	60	28.7	31
South Australia	7	5.6	12

Source *MDBA Technical Report Series: Basin Plan: BP02, p. 42.*

2.22 This means that the governance of Basin resources requires high-level government negotiation and cooperation.

History of reform in the Basin

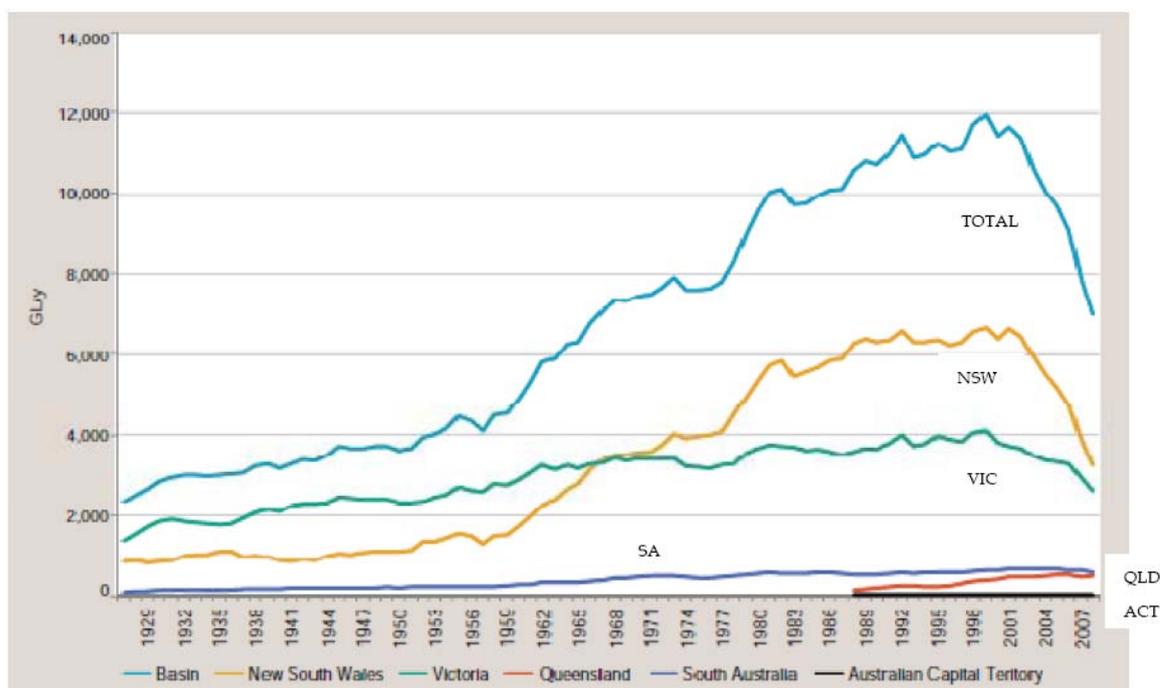
2.23 The first inter-governmental agreement on the Murray River was signed by the Commonwealth, New South Wales, South Australian and Victorian Governments in 1914. It was intended to be a dispute resolution agreement and established the River Murray Commission (RMC). The RMC was responsible for establishing a works program to be carried out by the states and establishing and implementing a water sharing formula.⁹

2.24 In reality, the powers of the RMC were limited – it was unable to deal with tributaries of the river, and it did not gain the power to monitor water quality until 1981. During this time, water extraction increased from 3 000 GL (1920) to 11 000 GL (1990s).¹⁰

⁹ B. McCormick and J. Tomaras, *Overview of Water Act*, Parliamentary Library unpublished memorandum, 28 October 2010.

¹⁰ MDBA, *Guide: Volume 1*, p. 26.

Figure 2.1 Growth in water use in the Murray-Darling Basin



Source MDBA, *Guide to the proposed Basin Plan: Volume 1, Canberra 2010, p. 27*

- 2.25 By the time of the inaugural Murray Darling Basin Ministerial Council meeting in 1985, salinity was a serious issue for the Murray River.
- 2.26 In 1987 the *River Murray Waters Agreement* was amended to become the *Murray-Darling Basin Agreement* and signed by the Commonwealth, New South Wales, South Australian and Victorian governments. This agreement was replaced by a new *Murray-Darling Basin Agreement* in 1992. Queensland became a signatory in 1996 and the Australian Capital Territory in 1998. Ratifying legislation has been passed through the parliaments of all participating governments.¹¹
- 2.27 The Council of Australian Governments (COAG) agreed to a *Water Resources Policy* in February 1994, setting a framework for water industry reform which, under the National Competition Policy, among other matters:
- recognised the need to address widespread natural resource degradation through measures to address the economic, environmental and social implications of future water reform;

11 Murray-Darling Basin Agreement, background, <mdba.gov.au/about/governance/murray-darling-basin-agreement>, accessed 4 May 2011.

- introduced consumption-based pricing of water based on full-cost recovery;
 - established a system of water entitlements and trade, including across state borders; and
 - allocated water to the environment.¹²
- 2.28 In 1997 the MDB Ministerial Council agreed to cap the bulk of surface-water diversions to 1993-94 levels in an attempt to limit the increasing extraction of water from the Basin. An annual assessment is undertaken each year to determine progress by each state and territory against the cap.
- 2.29 A number of other projects and agreements took place during this time, including:
- creation of the Natural Heritage Trust to fund environmental projects (1998);
 - a COAG agreement for a *National Action Plan on Salinity and Water Quality* (2000);¹³
 - establishment of the public company *Water for Rivers* by the Commonwealth, New South Wales and Victorian governments to achieve environmental flows for the Snowy (212 GL) and Murray rivers (70 GL) (2003);¹⁴
 - establishment of *The Living Murray* program (2004).
- 2.30 In 2004, COAG agreed to the National Water Initiative (NWI). Under the NWI governments agreed to:
- prepare water plans with provision for the environment;
 - deal with over-allocated or stressed water systems;
 - introduce registers of water rights and standards for water accounting;
 - expand the trade in water;
 - improve pricing for water storage and delivery; and

12 Council on Australian Governments Communiqué, *Water Resource Policy: Attachment A*, 25 February 1994, <coag.gov.au/coag_meeting_outcomes/1994-02-25/docs/attachment_a.cfm>, accessed 4 May 2011.

13 B. McCormick and J. Tomaras, 'Overview of Water Act', Parliamentary Library unpublished memorandum, 28 October 2010.

14 *Water for Rivers, Submission 408*. Discussed further in Chapter 5.

- meet and manage urban water demands.¹⁵
- 2.31 In 2006, the Commonwealth Government commissioned the Commonwealth Scientific and Industrial Research Organisation (the CSIRO) to undertake a thorough assessment of water resources in the Murray Darling Basin. As a result of this assessment, in 2007, the then Prime Minister, the Hon. John Howard MP, announced a \$10 billion *National Plan for Water Security* which led to the introduction of the *Water Act 2007* (the Act).
- 2.32 The Act was passed in 2007 without the agreement of the Basin states to transfer their powers, leaving the Commonwealth to rely only on its own constitutional powers.
- 2.33 The Act gives the Commonwealth additional powers over state water planning, including the establishment of the Murray-Darling Basin Authority (transferring funding from the Murray Darling Basin Commission) and the establishment of the Commonwealth Environmental Holder, as agreed by the Basin state and territory governments through COAG and other intergovernmental agreements on the Basin.
- 2.34 In 2008 the then Prime Minister, the Hon. Kevin Rudd MP, successfully negotiated with the Basin states to refer their relevant constitutional powers to the Commonwealth and the Act was amended accordingly with the support of the major parties.
- 2.35 The change of government in 2007 also saw the *National Plan for Water Security* replaced by the \$12.9 billion *Water for the Future* program. This program continues Commonwealth commitments to invest in infrastructure efficiency (\$5.8 billion) and the purchase of water entitlements for the Commonwealth Environmental Water Holdings (\$3.1 billion).
- 2.36 In 2009, in its second Biennial Assessment, the National Water Commission found that whilst progress in most areas was significant, very little progress has been made to address over-allocated or stressed water systems and concluded that this central requirement of water reform will not be met by the agreed 2014 deadline.¹⁶

15 COAG, Communiqué, 29 August 2003, <coag.gov.au/coag_meeting_outcomes/2003-08-29/docs/coag290803.pdf>, accessed 4 May 2011.

16 National Water Commission, *Second biennial assessment of progress in implementation of the National Water Initiative*, Canberra, September 2009.

Water Act 2007

2.37 The *Water Act 2007* (the Act) is the outcome of negotiations between the Commonwealth, the states and the ACT recognising the need for a Basin-wide management model.

2.38 While it is not in the terms of reference for this inquiry, the Committee heard extensive concerns about the Act and its role, primarily that it does not take adequate consideration of a 'triple bottom line' of social, economic and environmental needs.

2.39 The National Irrigators Council summarised these views:

Irrigators are, and have been, willing to play their part in the water reform process to ensure we have healthy ecosystems, sustainable food production and strong regional communities in the Basin. One of the reasons that irrigators have been supportive of the water reform process is the National Water Initiative's prescription that management of surface and groundwater resources should "optimise economic, social and environmental outcomes". This is replicated in the objectives of the Water Act 2007 (at 3 c) but is not reflected in Section 21 of the Act and as such, neither is it a feature of the Guide.

NIC believes that if we are to have a truly inclusive reform process that optimises environmental, social and economic outcomes, there must be trade-offs for all three. The Act and the Guide give primacy to the environment to the detriment of social and economic outcomes and as such we believe they fail our communities and the nation.¹⁷

2.40 The Committee was told that the Act was drafted relying on international environmental agreements, because these were the constitutional powers upon which the Commonwealth depended when Victoria refused to refer powers.¹⁸ It was put to the Committee that such a scheme is unlikely to occur:

the difficulty here is that this has already been tried and the Water Act is a product of a failure to agree on a cooperative scheme in the past. To go down that path you would have to hope that

17 National Irrigators Council, *Submission 189*, p. 3.

18 Mr Paul Kildea, Research Fellow and Director, Federalism Project, Gilbert and Tobin Centre of Public Law, University of New South Wales, *Transcript of Evidence*, Canberra, 23 March 2011, p. 4.

agreement could be reached when it proved impossible some years prior.¹⁹

2.41 Evidence from Professor George Williams and Mr Paul Kildea of the University of New South Wales indicated that without state cooperation, there is unlikely to be a way to amend the Act to give more weight to the 'triple bottom line' approach without exposing it to challenges in the High Court.²⁰ The Minister for Sustainability, Environment, Water, Population and Communities, the Hon Tony Burke MP, has stated in the Parliament:

Part of the problem in maintaining consensus on these issues has been uncertainty in the community and around the parliament about whether the Water Act does in fact demand the plan adopt a triple bottom line approach of taking into account environmental, social and economic impacts of reform. The MDBA has been reported as saying that the act requires a focus on environmental issues first, with limited attention to social and economic factors. For this reason I sought legal advice from the Australian Government

Solicitor to determine whether the interpretations referred to publicly by the MDBA matched the requirements of the act. I also stated here in the House that following receipt of the advice I would make it public. This morning I received the advice. It was made available to the opposition, Greens and Independents earlier today and I now table the advice. Broadly, the advice outlines that the Water Act:

- gives effect to relevant international agreements,
- provides for the establishment of environmentally sustainable limits on the quantities of water that may be taken from basin water resources,
- provides for the use of the basin water resources in a way that optimises economic, social and environmental outcomes,
- improves water security for all uses, subject to the environmentally sustainable limits, maximises the net economic returns to the Australian community.

Much has been made of the international agreements which underpin the Water Act and it has been suggested that these agreements prevent socioeconomic factors being taken into

19 Prof. George Williams, University of New South Wales, *Transcript of Evidence*, Canberra, 23 March 2011, p. 4.

20 Prof. Williams, *Transcript of Evidence*, Canberra, 23 March 2011, pp. 4-5.

account. In fact, these agreements themselves recognise the need to consider these factors.

The act specifically states that in giving effect to those agreements, the plan should promote the use and management of the basin water resources in a way that optimises economic, social and environmental outcomes. It is clear from this advice that environmental, economic and social considerations are central to the Water Act and that the Basin Plan can appropriately take these into account. I do not offer the advice as a criticism of the MDBA. What is important now is how the MDBA now responds to this legal advice.

I trust the issuing of the advice provides a level of confidence to members of parliament that it is possible to provide sensible and lasting reform of the Murray-Darling Basin within the current structure of the Water Act. Such reform needs to look at a suite of measures. Investment in all forms of water infrastructure needs to take place. This includes centralised irrigation infrastructure, on-farm infrastructure and works, and measures to more efficiently and effectively manage our environmental assets. The purchase of water allocations through the market will need to continue and this must only be from those who have chosen to put all or part of their allocation onto the water market. Where possible, with the leadership of the various irrigation authorities, strategic projects of rationalisation to avoid stranded assets and better target limited water supplies must be encouraged.²¹

- 2.42 The Committee understands that the Act is a matter of concern for many. However, a focus on the possible amendment of the Act is a distraction from the core issue of achieving a healthy and sustainable Basin.
- 2.43 The Committee makes no recommendations regarding the Act. However, through more transparent and accountable governance and a clear implementation plan, the Committee believes that a Basin Plan that balances the needs of the community and the economy with the needs of the environment can be achieved. No society can wantonly destroy the essential balance between social, environmental and economic outcomes.

21 House of Representatives, *Official Hansard*, 25 October 2010, pp. 1306-7.

- 2.44 The Senate Standing Committees on Legal and Constitutional Affairs is undertaking a detailed inquiry on the Act and the Committee awaits its findings with interest.²²

Reform fatigue in the community

- 2.45 'Reform fatigue' is one of the major issues facing the adoption of a Basin plan within the community. Many individuals who have been through reforms involving lengthy negotiations over decades told the Committee that they were exhausted by the continuous reform and being asked to undertake yet more, particularly when the necessity of further reforms have not been adequately explained.
- 2.46 Reform fatigue is compounded by the previous decade of drought, and the release of the Guide coinciding with record rain, and in some cases, devastating flooding.
- 2.47 While a coordinated national approach is necessary in Basin water management, some of the individuals living with the reforms understandably do not see proposed reforms in this context. Instead, they feel the imposition of yet another level of bureaucracy, which is already mistrusted.²³ Transparent, accountable governance at all levels is essential if these perceptions are to be addressed.
- 2.48 Reform fatigue is an issue that was raised with the Committee throughout the Basin. Improvements to water management and infrastructure, water trading policy, and the rapidly escalating costs of water has resulted in massive on-farm water savings and higher productivity. However, as Ms Louise Burge puts in her submission:

the long term ramification of continued cumulative social and economic impacts on regions, from Government reform or political programs is real. There is clearly 'reform fatigue' in regional Australia. This is having a permanent detrimental impact on current and future economic investments, the social capital and future employment planning. Reform fatigue is leaving a lasting legacy of mistrust of Government programs and policies.²⁴

22 For more information see, accessed 9 May 2011.

<aph.gov.au/Senate/committee/legcon_ctte/provisionswateract2007/index.htm>

23 See for example, Glen Andreazza, *Submission 273*.

24 Louise Burge, *Submission 496*, p. 92.

2.49 Alongside reform fatigue, evidence was also received about other levels of ‘fatigue’ within communities which compound the impact of a Basin Plan that reduces diversions. In a survey undertaken by Regional Development Australia, Far West NSW it was found:

- We discovered extensive “stakeholder-fatigue” – lots of consultation for public issues but with associated claims of not much listening and very little direct action observed as a result.
- We discovered “volunteer-fatigue” – lots of expectations for communities to perform more tasks, with fewer financial and staff resources, and very little thanks. It was expressly mentioned in most of our region’s urban centres that the ageing volunteers in the community had no one ‘to pass on the baton to’ (ie youth not inclined to become involved in volunteering).²⁵

2.50 It was also put that:

you can add change to that reform fatigue. Also, the rate of change that has occurred within our rural communities over the last decade has been extraordinary, whether it has been environmental, regulations or whatever. People get to a point where it is difficult to adjust any further.²⁶

2.51 These comments reflect what the Committee heard across the Basin from a wide range of stakeholders. It does not mean that further change is impossible to achieve, but it does need to be managed with an appreciation of what communities have already been through and achieved.

2.52 The Australian Dairy Industry Council (ADIC) is right to note that:

successful reform cannot be unilaterally imposed. It requires close cooperation between all parties to develop a common understanding of the need for (and likely impact of) change, the alternative pathways to reform and the trade-offs associated with different options.

The Basin Plan will be an important element in this process of change and reform. However, the ADIC does not see that the Guide, as currently drafted, provides a base from which the Authority can develop a balanced plan that will help build a better, more sustainable Basin.²⁷

25 Regional Development Australia (RDA) Far West NSW, *Submission 493*, p. 23.

26 Craig Hart, Rural Adversity Mental Health Program, Centre for Rural and Remote Mental Health, University of Newcastle, *Transcript of Evidence*, Dubbo, 16 February 2011, p. 45.

27 Australian Dairy Industry Council, *Submission 196*, p. 4.

- 2.53 Future planning must take these factors into account, both in terms of communicating the need for change and in setting timeframes and structural adjustment measures. This is further discussed in Chapter 3.

Case study 2.1 Reform fatigue in the Namoi

In New South Wales, the impact of water reforms in general has been greater for groundwater and surface water diversions where the level of development has been the greatest. An example of how reform fatigue has affected communities is within the Namoi region.

Namoi Councils make the point in their submission that the Namoi region is not foreign to water reform and have played an active and valuable role in contributing to the development of an environmental flow policy, water quality objectives, farm dams policy, floodplain harvesting policy, water sharing plans and the National Water Initiative the over the last 15 to 20 years.²⁸

At a hearing in Gunnedah the Committee heard that after several years of groundwater reform, 2005-06 saw the introduction of Achieving Sustainable Groundwater Entitlements (ASGE) which at the time was to be a “once and for all solution to groundwater aquifer use in inland NSW”.²⁹ The program resulted in entitlement holders within the region losing 60 per cent of their entitlement, based on a reduction of sustainable yield. Within five years of the ASGE, and during the period of time for adjustment, the MDBA introduced new terminology of Sustainable Diversion Limits (SDL) and proposed a further 13 per cent reduction in entitlement.³⁰ Of the valleys in NSW included as part of the ASGE program, none had cutbacks in the magnitude of those in the Namoi region.

Manuka Chaff states in its submission that Zone 1 of the Upper Namoi lost the majority of its water allocation to the NSW State Government reforms, now the Guide proposes further reductions to the water remaining.³¹

In his evidence to the Committee Mr Kahl of Namoi Water, notwithstanding reductions already experienced in the Namoi, questioned whether the extra 4½ percent (increasing the total from 83 percent to 87½ per cent take of water flow by water managers) would have a positive effect on water efficiency and the management of environmental assets.³²

A survey conducted by the NSW Farmers’ Association showed that 74 per cent of respondents indicated that they had already seen a reduction in their entitlement as a result of previous Government programs such as Water Sharing Plans and Groundwater Caps, with a 35 per cent indicating that they had experienced cuts of more than 60 per cent.³³

Communities are dealing with degrees of reform fatigue throughout the Basin, and furthermore there is a danger of these negatively affecting future generations of irrigators and farmers. As a witness in Deniliquin stated, “speaking from a next-generation perspective, it is really hard for anyone under the age of 30 to envision what their lifestyle might be and whether or not they want this lifestyle. There is a significant problem of policy fatigue... I remember my father attending meetings and going to these things to learn about what was happening... I think people just need sensibility in the approach. They also need to consider that this needs to be a very long term plan.”³⁴

In its 2010 Synthesis Report, Marsden Jacob provides an analysis of the Namoi region which states that water dependence in the Namoi is high, due to the importance of irrigated cotton to the region. As agriculture is such a large employer, any impact to that sector also will take a toll on the next largest regional employment sectors: retailing; and health and community services. Reduced

28 Namoi Councils, *Submission 517*, p. 3.

29 New South Wales Irrigators’ Council, *Submission 195*, p. 19.

30 Mr Brown, Namoi Councils Water Working Group, *Transcript of Evidence*, Gunnedah, 14 February 2011, p. 1. See also, New South Wales Irrigators’ Council, *Submission 195*, pp. 18-19.

31 Maunka Chaff Pty Ltd, *Submission 225*, p. 1.

32 Mr Kahl, Namoi Water, *Transcript of Evidence*, Gunnedah, 14 February 2011, p. 17.

33 NSW Farmers’ Association, *Submission 485*, p. 52.

34 Ms Morona, Southern Riverina Irrigators, *Transcript of Evidence*, Deniliquin, 24 January 2011, p. 50.

water availability because of drought has significantly reduced economic activity in the region over the past five years.³⁵ Marsden Jacob go on to say, “the most immediate issue for the region at present is the potential for business recovery following the drought. The economic prospects for irrigated cotton are strong, but those prospects cannot be realised without water. After several years of low incomes, those irrigators with high debt levels may struggle to recover from the drought.”³⁶

Despite reform fatigue throughout the region, Mr Brown sees that, “our experience in the Namoi is that there is an opportunity with properly targeted programs for government to have a win-win result for irrigators, government, the basin and catchment communities.”³⁷

Whilst visiting the region the Committee met with local Namoi irrigators and it was very clear the emotional toll continuous reform had taken on the region and the community.

The need for continued water reform

Current governance arrangements

- 2.54 The current management of water resources in the Basin is a result of the intergovernmental agreements outlined above. The Basin Plan does not re-write these intergovernmental agreements as some have claimed,³⁸ but it is a result of these negotiations and the vehicle for delivering their agreed outcomes.
- 2.55 Figure 2.2 outlines the interrelationship between Commonwealth and state and territory agencies responsible for implementing the Basin Plan.
- 2.56 The Water Act requires the Commonwealth Government to establish a whole of Basin Plan. The Murray-Darling Basin Authority, a Commonwealth statutory authority, is charged with developing a proposed Basin Plan for consideration of the Commonwealth Water Minister and ultimately the Parliament.³⁹
- 2.57 The role of the MDBA is to prepare a draft Basin Plan (referred to as the proposed Basin Plan) for consideration by the Commonwealth Minister responsible for administering the Water Act. The Minister may choose to adopt this proposed Basin Plan or direct the MDBA to make changes. Once the Minister adopts the proposed Basin Plan, it is to be tabled in

35 Marsden Jacob Associates, *Economic and social profiles and impact assessments for the Murray-Darling Basin Plan – Synthesis report*, July 2010, p. 109.

36 Marsden Jacob Associates, *Economic and social profiles and impact assessments for the Murray-Darling Basin Plan – Synthesis report*, July 2010, p. 110.

37 Mr Brown, Namoi Councils Water Working Group, *Transcript of Evidence*, Gunnedah, 14 February 2011, p. 3.

38 Louise Burge, *Submission 496*, p. 6.

39 The Act, Part 2, Division 1, Subdivision E.

Parliament. The Parliament is ultimately responsible for deciding whether the Basin Plan is made through its ability to disallow the document.⁴⁰

- 2.58 The primary vehicle for achieving the objectives of the Basin Plan is the identification of sustainable diversion limits (SDLs) based on environmental water requirements. The amount of water that can be diverted in each catchment, as set by the state water resource plans, must not exceed the SDL set in the Basin Plan. Once the plan has passed through the Commonwealth Parliament, the SDLs will not come into effect until water sharing plans are made. As it currently stands, this means that the permitted diversions in Basin catchments will not be affected until 2014 with the exception of Victorian catchments where the new plans are due in 2019.⁴¹
- 2.59 The Water Act also established the Commonwealth Environmental Water Holder (CEWH), a statutory position with responsibility for managing the Commonwealth's portfolio of water entitlements. The CEWH is required to use these entitlements in accordance with the Environmental Watering Plan as set out in the Basin Plan.⁴²
- 2.60 The states retain responsibility for planning and management of water resources providing it is consistent with an overarching set of rules within the Basin Plan. The Commonwealth is not responsible for managing water at the valley scale. Catchment water planning and annual allocation decisions remain the responsibility of state and territory governments.
- 2.61 However, the Commonwealth is responsible for both accrediting state plans and auditing their implementation through the National Water Commission.⁴³

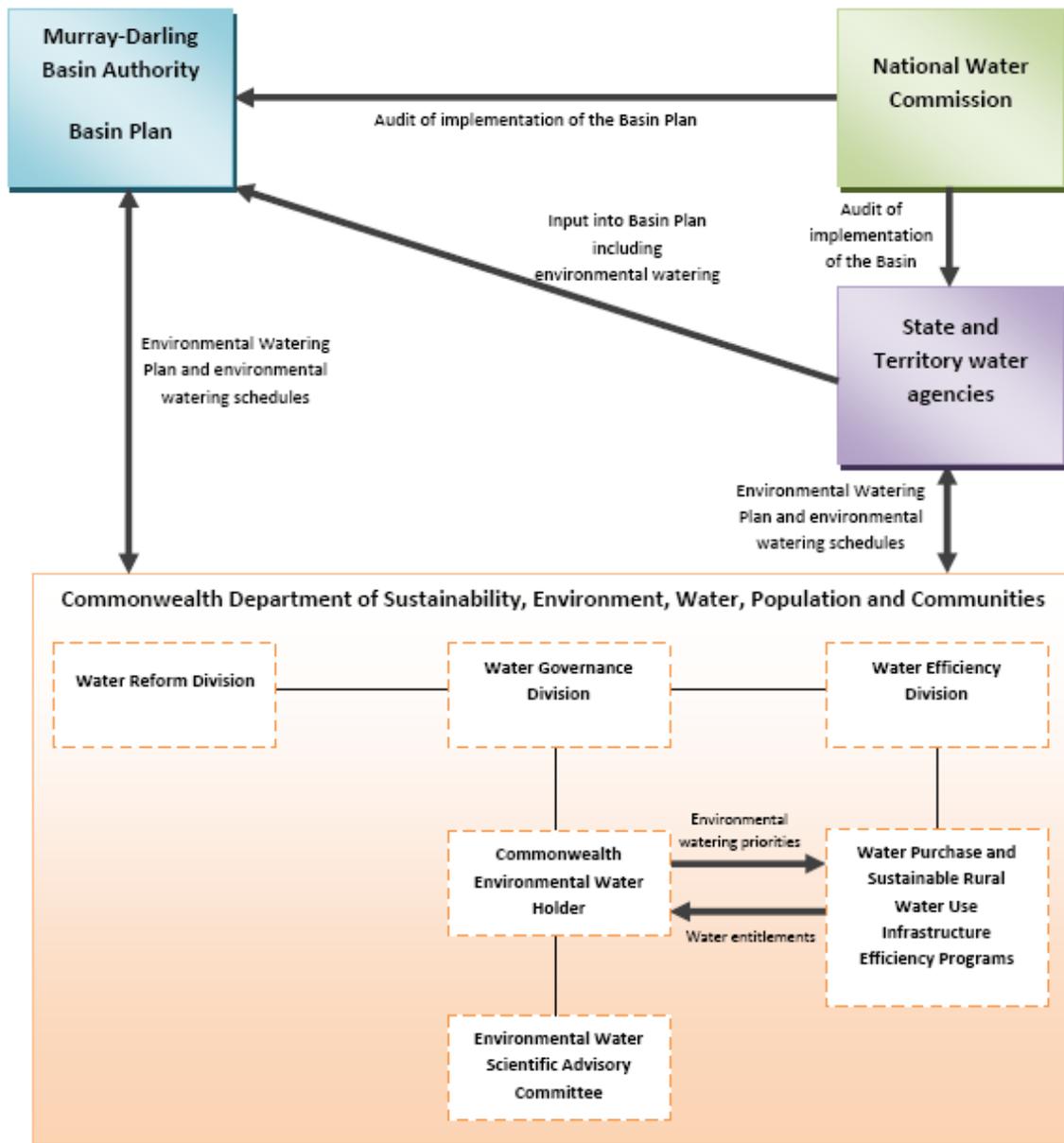
40 The Act, Part 2, Division 1, Subdivision E.

41 The Act, Part 2, Division 2.

42 The Act, Part 6.

43 The Act, Part 2, Division 2 and Part 3.

Figure 2.2 Current governance arrangement responsibilities



- 2.62 Sound governance arrangements are essential to ensuring that the management of Basin water resources is transparent, responsive, and fulfils the obligations of the various intergovernmental agreements on managing Basin water resources.
- 2.63 The Committee received widespread evidence that the current governance arrangements are not transparent or accountable, particularly those falling within Commonwealth responsibilities. Governance arrangements are further considered in Chapters 5 and 6.

Governance reform

- 2.64 Continued water reform within the Murray-Darling Basin is necessary to ensure that the Basin is managed in a sustainable way that looks to the long-term future of viable, and thriving, communities. Despite decades of reform and the development of detailed water sharing plans (WSPs), basin water resources continue to be over-allocated and overused in some areas.
- 2.65 The National Water Commission (NWC) 2009 biennial assessment, of progress in implementing the National Water Initiative found that water sharing initiatives have not been aligned to over-allocation and overuse.⁴⁴ Therefore many water recovery initiatives have not been linked to sustainable extraction targets based on the best available science.
- 2.66 The NWC further found that because WSPs had not adequately identified over-allocation and overuse, entitlement holders are unable to invest efficiently, being unaware of sustainable extraction limits and the full capability of their regions.⁴⁵
- 2.67 This is despite multiple COAG agreements over decades recognising the need to address over-allocation and provide a comprehensive Basin governance approach. The failure of these agreements to be implemented effectively is why the 2007 reforms were necessary.
- 2.68 In 2007, when announcing the *National Plan for Water Security* which led to the current round of reforms, the then Prime Minister John Howard MP said:

The CSIRO estimates that by 2020, average annual flows could decline by about 15 per cent due to climate change, recovery from bushfire, farm dam and plantation expansion and increasing use of groundwater. All parties must recognise that the old way of managing the Murray-Darling Basin has reached its use-by date. The tyranny of incrementalism and the lowest common denominator must end.

...

We could muddle through as has occurred in the past, but frankly, that gets us nowhere. Without decisive action we face the worst of both worlds. The irrigation sector goes into steady but inevitable

44 National Water Commission, 2009, *Australian Water Reform 2009: Second biennial assessment of progress in implementation of the National Water Initiative*. Canberra. p. 88, 98.

45 National Water Commission, 2009, *Australian Water Reform 2009: Second biennial assessment of progress in implementation of the National Water Initiative*. Canberra. p. 98.

decline while water quality and environmental problems continue to get worse.

... none of this massive investment will make any sense or can be effectively achieved without a complete overhaul of the Murray-Darling Basin's governance arrangements. Putting the Basin on a sustainable footing can only occur through faster reform and fully integrated catchment management. And that requires an end to the parochial pursuits of state interests.

Rivers do not recognise those lines on the map that we call state borders ...

Criticism of the management of the Murray-Darling Basin is often seen as the Commonwealth blaming the states or one state blaming the other. And there is no doubt that many errors have been made in the past.

In the final analysis, however, the core problem is that the different states have competing interests. The South Australians resent, as they have for more than 150 years, the level of diversions by Victoria and New South Wales. The Queenslanders feel they were late to the party in developing irrigated agriculture and want to catch up. The New South Welshmen downstream complain that their overland flows have been diverted to cotton farms.

As long as integrated water systems are being managed piecemeal by governments with competing interests, the execution of even the best national agreements will remain challenging and contentious.

...

Tackling Australia's water security is an immense challenge. It requires a comprehensive, bold plan. It requires a commitment of resources and above all requires people to think as Australians above any other parochial identification or consideration.⁴⁶

- 2.69 The Committee heard from many irrigators who feel they are blamed for any problems facing the Basin. They feel accused of over-extraction when they have had decreasing allocations against their water entitlements for many years and in some instances zero allocations.

46 The Hon. John Howard MP, *Address to the National Press Club, Great Hall, Parliament House, Canberra, 25 January 2007*, <pandora.nla.gov.au/pan/10052/20070615-0000/www.pm.gov.au/media/Speech/2007/speech2341.html>, accessed 5 May 2011.

- 2.70 It is unproductive to apportion blame for over-allocations made by states over time.
- 2.71 It is the responsibility of all governments and water users to ensure that Basin resources are allocated and used sustainably. However, Basin water users must be given an understanding of why current allocations may be unsustainable in some parts and what adjustments or water saving measures can be utilised.
- 2.72 In addition, this long evolution of Basin water management has resulted in multiple layers of regulations administered by various level of local, state/territory and the Commonwealth governments. The necessity of the continuance of some of these regulations is questionable, for example, the management of the Menindee Lakes system being dependent on a 1964 agreement between the Commonwealth, New South Wales, Victoria and South Australia⁴⁷ and the management of Lake Victoria in south-western New South Wales as operated by the MDBA by a 1928 agreement.⁴⁸
- 2.73 The Committee heard a number of instances where regulations of this sort exist and in practical terms hinder the implementation of water efficiency measures. It is time, as a part of the Basin Plan process, to review all the regulations in place to ensure that they provide the most efficient management of water resources.

Recommendation 1

The Committee recommends that the Commonwealth Government commission a study to identify all regulations and agreements in place that inhibit the efficient management of water in the Murray-Darling Basin and, where appropriate, work with the states to remove these regulations.

47 Stan Dineen, *Submission 351*; Menindee Lakes Agreement <austlii.edu.au/au/legis/nsw/consol_act/mlsaa1964282/sch1.html> accessed 28 May 2011.

48 See for example: DH Consulting, *Submission 641*, p. 1; Mr McComb, *Submission 536*, p. 7, MDBA, *Lake Victoria Annual Report 2009-10*, accessed 30 May 2011, <mdba.gov.au/services/publications/more-information?publicationid=85>.

Basin sustainability

- 2.74 In order to support sustainable, productive, healthy Basin communities, the Basin environment also needs to be sustainable and healthy. The two are inter-dependent. Over-extraction of Basin water and poor management of environmental flows have led to environmental impacts such as massive black water events. Although the results of the recent drought are also stark and undeniable, environmental decline has been evidenced in some areas since the 1980s.
- 2.75 The Committee received hundreds of submissions citing evidence of recovering habitats following the late 2010 rain events, which is testament to the river's robustness and resilience. However, SDLs are not about preventing natural cycles of drought and flood, they are to avoid the environmental degradation that is a direct result of poor management of catchments. For example:
- numbers of feral fish, feral animals and land and water weeds;
 - dying river red gums and dependent biodiversity;⁴⁹
 - the incursion of red gums into drier wetlands and grass lands;
 - water quality issues including black water events and blue-green algal blooms, for example:
 - ⇒ in 1983, an algal bloom extended for over 800km along the River Murray;
 - ⇒ in 1990 over 1000km of the Darling River was subjected to an algal bloom, which has been attributed to the death of an estimated 10,000 stock and toxicity in the Bourke drinking water supply;⁵⁰
 - decreasing water quality and loss or degradation of wetlands leading to a decline in waterbird populations, for example:
 - ⇒ with total waterbird abundance falling by 80% since 1983. Between 1983 and 2006, migratory shorebird populations plunged by 73% and Australia's 15 species of resident shorebirds declined by 81% across south-eastern Australia Since 1985, populations of many bird species in South Lagoon (Coorong) have declined, including (but not limited to) Black Swan (59%), Fairy Tern (82%), Australian Pelican

49 B. Dexter and B. Macleod, *Submission 153*, p. 4.

50 Emeritus Professor Ian Falconer, *Submission 97*, p. 3.

(77%), Curlew Sandpiper (94%), Sharp-tailed Sandpiper (63%) and Red-necked Stint (68%).⁵¹

- closure of the Murray Mouth - the mouth of the Murray at the Coorong in South Australia has been closed on average up to 40 per cent of the time causing salinity and acidity in the Coorong and the Lower Lakes;⁵²
- expanding salinity issues.

2.76 Any decline in biodiversity is of concern in itself. However, the health of the natural resource and maintaining land productivity for food and fibre production is interdependent. Without sustainable water extraction limits, environmental health will decline resulting in the failure of ecosystems and natural resource dependent economies.

Case study 2.2 Goolwa Barrages

In 1931 the River Murray Commission recommended barrages be constructed on the channels leading from Lake Alexandrina to the Murray mouth at the Coorong.

Work on the barrages commenced in 1935 and was completed in 1940. South Australia's Engineering and Water Supply Department undertook the works, with costs shared equally by the Governments of Victoria, New South Wales, South Australia and the Commonwealth. Commonly known as the Goolwa Barrages, there are five barrages that make up the group:

- Goolwa
- Mundoo
- Boundary Creek
- Ewe Island
- Tauwitchere

Both the Goolwa and Tauwitchere barrages were built with locks, allowing passage between the Murray mouth and the Coorong.⁵³

The purposes of the barrages are to:

- reduce salinity levels in the lower reaches of the River Murray and associated lakes;
- stabilise the river level, and normally maintain it above the level of reclaimed river flats between Wellington and Mannum, so as to provide irrigation by gravitation rather than pumping;
- during low flows, to concentrate releases to the ocean to a small area, and so scour a channel for navigation; and
- maintain pool water that can be pumped to Adelaide and the southeastern corner of South Australia.⁵⁴

The water level upstream of the barrages is normally about 0.75 metres higher than mean sea

51 Birds Observation & Conservation Australia, *Submission 374*, p. 2.

52 CSIRO, *Water availability in the Murray-Darling Basin*, Canberra: October 2008, p. 4.

53 SA Water, South Australian Government, *The River Murray - Locks, Weirs and Barrages* <http://www.sawater.com.au/nr/rdonlyres/d7ddcd4e-6cd6-4c61-9d3d-4bc9041aa16a/0/river_murray_locks_weirs.pdf>, accessed 27 May 2011.

54 Murray Darling Basin Commission (MDBC), *River Murray Water - The barrages* <http://www2.mdbc.gov.au/rmw/river_murray_system/barrages.html>, accessed 27 May 2011.

level. The barrages cause an increase in water level of approximately 0.5 metres as far upstream as Lock 1 at Blanchetown (274 kilometres upstream).

To control water levels, 'stoplogs' are typically used, particularly at the Goolwa Barrage. During periods of low river flow all the logs must be in place to completely stop the flow and maintain high lake levels. During floods, the stoplogs may all be removed. For intermediate flows, constant regulation is required to prevent the entry of salt water and to keep the water level upstream at the required level.

Goolwa Barrage is the deepest of the barrages, constructed on fine sand and silt, and founded on timber piles and sheet piling up to 14 metres. The barrage contains a lock chamber 30.5 metres by 6.1 metres.⁵⁵

- 2.77 At a number of the farms it visited, the Committee heard widespread concerns, particularly in the northern Basin, that the regular closure of the Murray mouth was being used as the reason for the Basin Plan. It is worth noting that the MDBA used flows through the Murray mouth not as an indicator of the health of the Lower Lakes, but rather is a surrogate or indicator of the health of the entire Murray-Darling system. Use of such an 'indicator' on a totally managed or regulated system was questioned by many.
- 2.78 The soils and groundwater of the Basin release salts into the rivers. This salinity is natural and, under natural conditions would be transported down the system and out the mouth during times of high rainfall. Based on the Basin Salinity Management Strategy,⁵⁶ the MDBA estimate that two million tons of salt would need to be flushed out of the system each year to balance the entry of salt into the rivers.⁵⁷ Rates of release of salt out of the landscape, in particular in mallee country depends on the season's rainfall, vegetation condition and other land uses. Droughts tend to see less salt regularly flushed from soil profiles or flowing through depleted aquifers. Flows move salt through the river system. Flows out of the Murray mouth prevent the accumulation of salts in the Lower Lakes and Coorong. During the drought, the Murray mouth has been dredged open. The mouth of the Murray was regularly sand blocked prior to river regulation by structures and locks. The health of the entire Murray-Darling Basin is not indicated by the open or closure of the Murray mouth.
- 2.79 The saline nature and propensity for blue-green algal outbreaks are inherent in the character of the ephemeral Basin streams. Ensuring there are adequate flows to move and flush salt and nutrients out of the system is a responsibility of all who depend on its waters.
-

55 MDBC, *River Murray Water – Design and operation of the barrages*, <http://www2.mdbc.gov.au/rmw/river_murray_system/barrages/design_and_operation_of_the_barrages.html>, accessed 27 May 2011.

56 MDBC, *Basin Salinity Management Strategy 2001-2015*, Canberra, August 2001.

57 MDBA, *Guide: Volume 2*, Canberra: October 2011, p. 305.

- 2.80 While there is a need to manage the whole of the Basin well, achieving sustainability across the Basin will require different approaches in the different valleys. In general, the northern parts of the Basin are characterised by high variability of flows in the Darling and its tributaries⁵⁸ and a lack of river regulation. As a result of these factors, large private storages are more prevalent in the north. Different water extraction is also a consequence of different states' water law, resource management and water pricing regimes.
- 2.81 Another key difference is the geography between the Darling and Murray systems. The Darling Basin is flatter and much less mountainous than the neighbouring Murray Basin.⁵⁹
- 2.82 As a result of the high variability and high evaporation, the Darling contributes a relatively small amount of the total flows of the Murray south of Wentworth. On a long-term average basis, the northern Basin would have naturally contributed around 17 percent of the flow below its junction with the Murray. Under natural conditions, only 18 percent of the inflows into northern Basin flow out of the Darling River.⁶⁰
- 2.83 Although relatively small, the flows out of the Darling system are essential for the health of the northern Basin. In particular, flushing salts into the Murray and ultimately out the mouth.
- 2.84 The Committee heard concerns about the northern Basin providing water to the environment of the Lower Lakes and Coorong. However, as a result of its ephemeral nature and the high losses due to floodplain inundation and evaporation, there is limited ability to source water from the Darling River system to meet environmental needs in the Murray.⁶¹

Case study 2.3 Lower Lakes, Coorong and Murray Mouth

The Lower Lakes, Coorong and Murray Mouth region is located at the downstream end of the Murray-Darling system. It is also known as the Coorong, and Lakes Alexandrina and Albert (Lower Lakes) Wetland of International Importance (Ramsar site). Australia designated the site, covering approximately 140,500 hectares in South Australia, as a Wetland of International Importance under the Ramsar Convention on Wetlands in 1985. Parts of the Coorong also form the Coorong National Park and Game Reserve.

The River Murray terminates in South Australia at the Southern Ocean, having passed through Lake Alexandrina, the Murray estuary and finally, the Murray Mouth. Lake Albert is a terminal lake connected to Lake Alexandrina by a narrow channel. The Coorong is a long, shallow lagoon more than 100 kilometres in length. It is separated from the Southern Ocean by a narrow sand dune

58 MDBC, *State of The Darling Interim Hydrology Report*, Canberra, March 2007, p. 13

59 MDBC, *State of The Darling Interim Hydrology Report*, Canberra, March 2007, p. 11

60 MDBA, *Guide: Volume 2*, Canberra: October 2010, p. 157.

61 MDBA, *Guide: Volume 1*, Canberra: October 2010, p. 131.

peninsula. The region is the only point of entry and exit for fish that move between freshwater and marine habitats and is the only pathway to export salt from the Murray-Darling Basin.⁶²

The Lower Lakes, Coorong and Murray Mouth is one of the regions that drew a lot of attention from submitters and witnesses. Following is an example of some of the arguments that were presented to the Committee, which included:

- Removal of the barrages at the Lower Lakes and some are also calling for building a division weir at Wellington.⁶³
- The building of pipes under the dunes at the Coorong that could serve as:
 - ⇒ a method to overcome seasonal hyper salinity; and
 - ⇒ a tool for the timely and proportionate adjusting of flows in and out of the mouth.⁶⁴
- Water assigned permanently to the region to ensure the health of associated wetlands.⁶⁵
- Minimising evaporation losses by:
 - ⇒ Operating the Lower Lakes at a lower level.
 - ⇒ Building pipelines around the Lower Lakes to supply farms and towns with water and minimise evaporation losses from the Lakes.
 - ⇒ Engineering solutions that some have estimated to save in the order of 800 GL/y.⁶⁶
- Building of a new dam in South Australia.⁶⁷
- Allow the Lower Lakes to be 'returned to natural estuarine state'.⁶⁸
- Better management to reduce the amount of productive water lost from the system yet still allows acceptable environmental outcomes to be achieved.⁶⁹
- Further analysis and urgent attention as how to better manage the region.⁷⁰

The MDBA informed the Committee that a Lower Lakes Social Impacts Case Study is being undertaken by Dr Jonathon Sobels from Flinders University to assess the social and some economic impacts of reduced access to Murray River water on the communities of the Murray River delta, comprising the Lakes Alexandrina and Albert and the Coorong and Murray Mouth, collectively referred to as the 'Lower Lakes'.⁷¹

62 Department of Environment and Natural Resources of South Australia, *Coorong, Lower Lakes and Murray Mouth region* <http://www.environment.sa.gov.au/Conservation/Rivers_wetlands/Coorong_Lower_Lakes_Murray_Mouth> accessed 9 May 2011:

63 See for example: South West Anglers Association, *Submission 102*, p. 3; Murray Valley Water Diverters Advisory Association, *Submission 109*, p. 4; Graham Wells, *Submission 134*, p. 4, Cockburn Valley Water Users and Landcare Association, *Submission 140*, p. 2, Russell Fisher, *Submission 150*, p. 2, Carrathool Shire Council, *Submission 161*, p. 4, Australian Environment Foundation, *Submission 173*, p. 5; Campbell Partnership, *Submission 202*, p. 1, John Brian, *Submission 209*, p. 2. John Groutsch, *Submission 302*, p. 2; Bill Hetherington, *Submission 321*, p. 3, Caromar Pty Ltd, *Submission 509*, p. 1.

64 Mr Ian Mott, *Supplementary Submission 424.1*, p. 12.

65 Glenn Osboldstone, *Submission 10*, p. 1.

66 Tom Loffler, *Submission 120*, p. 4; Ian Bowditch, *Submission 125*, p. 2; Leeton Shire Council, *Submission 195*, p. 13; Riverina and Murray Regional Organisation of Councils, *Submission 259*, p. 6; Peter Davidson, *Submission 260*, p. 1.

67 Wentworth/Curlwaa Branch of the NSW National Party, *Submission 121*, p. 1.

68 See for example: Virginia Tropeano, *Submission 131*, p. 3, John Ibbotson, *Submission 158*, p. 4, Donald Macleod, *Submission 171*, p. 11, Knox Durrant, *Submission 220*, p. 2; Allan Haggerty, *Submission 244*, p. 1, Malcolm Hill, *Submission 367*, p. 2.

69 Auscott, *Submission 301*, p. 6.

70 See for example: Louise Burge, *Submission 496*; River, Lakes and Coorong Action Group, *Submission 480*; Water Action Coalition, *Submission 596*, p. 18.

71 MDBA, *Submission 224* (response to questions taken on notice), p. 16.

Community sustainability

- 2.85 The water reform debate is commonly argued as a trade-off between the environment and irrigation communities. This is not the case. The health and indeed the existence of Basin communities is dependent on the health of the river systems. Without a healthy and secure water supply there is no doubt that the communities that provide much of our food and who depend on water access will quickly and irreversibly decline.
- 2.86 There is also no doubt that successful farmers and land managers know and constantly strive to improve the value of a healthy ecosystem. So they sustain and improve the environment as they produce food and fibre. Farmers through Land-care and other investments have helped sustain environments through the drought. As the South Australian Murray Irrigators Inc. stated:
- Irrigators and dry land farmers alike in the South Australian river regions are country people who love the land and care for its well being.⁷²
- 2.87 The Committee was taken to private wetlands being water filled and maintained by farmers for mixed species habitat renewal, and saw huge areas fenced out to protect endangered or breeding native birds and other species.
- 2.88 The Committee repeatedly heard concerns about future generations being driven away if communities died. It is for this reason that continued water reform is necessary – to ensure that the catchments can support healthy communities who in turn manage a healthy environment.
- 2.89 Having heard from hundreds of people across the Basin, the Committee has formed the view that communities do not oppose the notion of supporting environmental health, in fact, they support it. They oppose what appears to be a unilaterally imposed proposal that does not take into account measures already being undertaken by communities to restore wetlands, provide habitat for biodiversity and improve water-use efficiency.
- 2.90 The next Chapter addresses the delivery of the Guide, the existing pressures on farming communities and the need for a community-focussed Basin Plan.

72 South Australian Murray Irrigators Inc, *Submission 459*, p. 1.

The Guide

- 3.1 The release of the Guide triggered an unprecedented negative and hostile reaction across the Basin. Some of this anger is in response to the very high reduction in diversions identified in the Guide. The grievances of Basin communities were also aggravated by the manner in which the Guide was communicated to them.
- 3.2 It is apparent that the impact of the Guide is already being felt in many rural communities throughout the Basin. There is considerable anger and anguish in these communities about the perceived injustice of the proposed significant cuts in water and hence uncertainty about their future viability as food and fibre producers or those whose businesses service the agribusiness sector:
- We live and work within our communities, and I can tell you for the first few days in the week after the report was released we were inundated with calls reflecting absolute disbelief and uncertainty. It was as if all of the self-confidence, certainty and commitment had been extinguished by one document.¹
- 3.3 It is also apparent that matters have been made worse through the lack of consultation during the development of the Guide and poor communication following its release. As a result, there is no sense of community participation in the process and a considerable misunderstanding around what the Guide is, what it is proposing and what the impacts will be on regional communities:

¹ Mr Harold Clapham, Mainland Finance, *Transcript of Evidence*, Deniliquin, 24 January 2011, p. 30.

There is very much a perception from people on the ground that this basin planning process is something that is being done to us and not being done with us. It is a bad example, if you like, of government service delivery and the way government is perceived these days. The only time we see governments is when they come to take things away; that is happening far more these days than in actually turning up to do something for us. There is a perception that government should get out of the way and let us get on with what we are good at doing. We believe we have good processes, good rules and good plans in place, and that this is an additional obstacle that we really do not need.

The engagement process has been very much a top-down one. There has been very little in the way of real engagement. The closest we have come to that is technical visits from the authority which have been simply justifying how they got to where they did with the guide and not explaining anything in detail as to how it is going to affect us here.²

- 3.4 The mismanagement of the preparation and communication of the Guide has affected communities in far reaching ways. The Committee encountered many stories of reducing investor confidence, depression, anxiety and suicide in many communities.
- 3.5 The warm welcome that this Committee received throughout those same communities proves that, when consulted appropriately and with respect, communities are open to talking about hard decisions or options that must be considered.
- 3.6 This Chapter addresses the impact that the release of the Guide has had in Basin communities, in the words of those communities, including the pressures facing farming communities and the impact of the drought.
- 3.7 The following chapter goes on to discuss a way forward for the MDBA and other Commonwealth agencies to engage with Basin stakeholders in a constructive manner, focussing on producing a Basin Plan that builds and supports strong Basin communities.

2 Mr Tim Napier, Executive Officer, Border Rivers Food and Fibre, *Transcript of Evidence*, Goondiwindi, 16 March 2011, p. 4.

What is the Guide?

3.8 A common and significant misconception about the Guide is that it is the actual Basin Plan. However, the Guide is simply an expression of the MDBA's thinking and methodology behind the preparation of a proposal. It is nothing more than a complex discussion paper. The Guide has no official status in regards to the Basin Plan that will be put to Parliament for consideration.

3.9 However, the mode used by the MDBA to prepare and communicate the Guide did nothing to disabuse a common view that it was the final proposal. This was reiterated through the MDBA's approach of:

- presenting the Guide as a glossy, full colour print document and calling it a Guide to the Basin Plan, rather than a discussion paper or working document;
- failing to consult during the preparation of the document and the organisation maintaining a 'closed door' approach to its thinking both in terms of the community and the States/Territory;
- presenting the Guide to the community through a series of 'community information sessions' rather than consultative workshops which could have allowed the feedback of and interaction with the community;
- failing to address misconceptions about the intent of the Basin Plan, including the most significant misconception that water will be 'taken' from entitlement holders;
- failing to take into account the existing pressures within farming communities both in developing and presenting the Guide;
- failing to adequately address socio-economic modelling on the impact of proposed SDLs in the Guide;
- failing to address the interconnectedness of the northern and southern sectors of the Basin including their relationships with the lower lakes and the mouth of the Murray;
- failing to provide a clear vision for how the Basin Plan would be implemented, including the respective roles of the Commonwealth and state and territory governments; and
- admitting openly in community meetings that they were not confident with the estimated potential job losses, as impacts of SDLs.

3.10 With clearer planning, and an appropriate articulation of the purpose of the Guide, its relationship to the proposed Plan and the role of the states and ACT in implementing the Plan, all of these failures could have been avoided.

3.11 Although there has been media focus on the anger caused by the Guide, the community proved to the Committee that it is supportive of and willing to work through this process in a constructive manner:

One of the key criticisms we need to lay at the feet of the process to date is lack of recognition and wanting to garner that information from the community. So, with this lack of engagement, this lack of consultation, it should have been entirely predictable that there would be a hostile response. These folk here know about water and they want their voices heard. They know they will not get the right decisions all the time – and I am sure all of them have run-ins with the state authorities – but I think it would be true to say that they know they can be heard and they have been respected in the past and in turn give their respect to the authorities. I think that is what has been missing in this process to date. It has been a one-way street, and the uncertainty that has been created by releasing a complex document in a context which has been unclear, on an overlay of people who are used to being consulted, has given rise to what we have today: the need to revisit, reappraise and re-consult with communities about what this all means.³

3.12 The information contained within the Guide should not have come as a shock to communities. Had it been developed in a consultative, open and transparent manner, it would have reflected local knowledge and no doubt would have reached different conclusions based on better information. Instead the Guide has had a significant adverse impact on the community's short and long term investment confidence and the plans made by the next generation in the Basin.

3 Ms Lynda Summers, Chair, NSW Regional Consultative Council, *Transcript of Evidence*, Griffith, 25 January 2011, p. 59.

Impact of the Guide

- 3.13 While the Guide is simply a working document, it has been taken as a final plan and consequently farmers, communities and the business sector have reacted accordingly. This is indicative of the impact the Basin Plan will have, should it be presented in a similar manner.
- 3.14 The impact of the Guide is evidenced in Basin communities through:
- a reduction in investor confidence, including recruitment to job vacancies or expanding workforces;
 - increased business uncertainty;
 - stress caused by the expected job losses;
 - exacerbated stress and pressure within farming families and agribusiness reliant or dependent communities;
 - the prolonging of drought stressors; and
 - further alienation of Aboriginal communities through a lack of recognition of their stakeholder status and particular cultural interests.

Case study 3.1 Social impact in Bourke

The Pacific Outback School is one of six schools in the Bourke area, and is located approximately 20 kilometres west of the town of Bourke. In his submission, Alan Amos states that the Pacific Outback School population numbered 118 students in 2006 when it operated both primary and secondary departments. Mr Amos considers the effect of the water cuts via the New South Wales Government Barwon-Darling Cap Management Strategy, as well as further uncertainty generated by the Basin Plan has resulted, amongst other things, a decrease in student population to 14 students. At the time of Mr Amos' submission, the school's Management Committee had decided to close the school.⁴

Mr Crothers, a community pharmacy proprietor, told the Committee what he has seen happen in the town of Bourke, and some of the concerns from people he meets through his pharmacy. In his evidence Mr Crothers told the Committee of the town's high dependence on the irrigation industry and the high social and economic vulnerability to any further decline in irrigated agriculture. These issues are emphasised by water cuts that occurred via the New South Wales government and the possible impact of a Basin Plan. Mr Crothers explained that over a period of time where water cut-backs had occurred and the decline in the local economy, there had been an increase in the usage of anti-depressants, analgesics and associated medication. Mr Crothers highlighted that mental health care in the community was problematic, as were drugs, alcohol and nutritional issues. In a town with a very narrow economic base already dealing with a number of issues, Mr Crothers sees the situation to be quite dire and at risk of further decline from the potential impacts of a Basin Plan.⁵

4 Mr Amos, *Submission 96*, pp. 2-3.

5 Mr Peter Crothers, *Transcript of Evidence*, Bourke, 15 February 2011, pp. 20-23.

Reduction in confidence and increased investor uncertainty

3.15 The Committee received wide reports of reduced investor confidence following the release of the Guide. This stems from the uncertainty created by the Guide in that it does not articulate 'how required environmental flows will ultimately be sourced and managed.'⁶

3.16 Uncertainty regarding water supply was a significant contributor to reduction in investor confidence during the drought⁷ and the Committee heard concerns that the Guide if implemented would create a policy-driven drought with similar economic and social consequences.

3.17 Already the uncertainty is impacting on business confidence. The Australian Bankers' Association stated that:

the Guide has generated uncertainty which has impacted confidence and therefore investment in the sector. We have seen this have an immediate impact on the saleability, and potentially the value, of several large scale assets, farmland, businesses and housing in areas potentially impacted by the Guide's proposals.

Uncertainty has also been generated by a lack of clarity as to what the actual impact will be on a region by region basis. An ongoing program of education and awareness at local level would be beneficial. Timely advice from Government about the structural adjustment support that may be provided, including a timeframe that allows for the management of structural change, would be beneficial.⁸

3.18 The uncertain timeframes for release and implementation of the Plan is a contributor to this uncertainty. A business owner was reported as saying:

The misery of not knowing your businesses fate until 2012 will stop people investing or spending money on an industry that could die!⁹

3.19 Councils reported a general reduction in business confidence and increase in levels of business stress:

Notwithstanding the proven resilience of our farmers and our communities, the MDBA Plan to mandate new SDLs has further exacerbated stress levels of farmers and reduced or delayed

6 Australian Dairy Industry Council, *Submission 196*, p. 5.

7 Murray Irrigation Ltd, *Submission 440*, p. 17.

8 Australian Bankers' Association, *Submission 601*, p. 3.

9 NSW Regional Communities Consultative Council, *Submission 545*, p. 14.

investment levels as people await some indication of certainty re: water resource availability.¹⁰

3.20 Community support groups reported major investments being postponed:

We are finding not only farmers but other associated businesses are delaying capital expenditure due to the uncertainty that this draft plan has created. Recently a farm machinery dealer delayed plans to build a new showroom and a dairy farmer delayed plans to build a new rotary dairy. Some businesses are delaying their succession plans until more certainty is known. This uncertainty in industry is creating real problems.¹¹

3.21 Community groups have also reported personal stress and significant increases in a lack of confidence in the future:

Local people in Hillston, Darlington Point, Colleambally and Leeton expressed the view that the current uncertainty is (quote) “killing people”. The stress level in these communities is reported as high. Planned investment is cited as having stopped, or put on hold. Anecdotally it was reported that prescriptions for stress and depression medication has increased. Community members are looking for finalisation of the uncertainly [sic].¹²

Case study 3.2 Social impact in rural New South Wales

The Centre for Rural and Remote Mental Health (CRRMH) stated that the release of the Guide occurred within the context of significant and prolonged hardship within rural communities – economic decline, loss of rural infrastructure, the level of uncertainty in primary production, dependence on favourable weather conditions, climatic drying and warming, and perceived blaming of farmers for environmental degradation. These background factors have been shown to produce a vulnerability to mental health problems for people living in rural and remote areas.¹³

In Dubbo, Mr Hart of the CRRMH stated that whilst rural communities are very resilient, the length and severity of the recent drought had taken a toll on these communities. He went on to say that the numerous and major changes in economic and environmental circumstance, the resources to cope and adapt to these changes are stretched and one of the reasons why mental health issues have been so significant over recent years.¹⁴

10 Gannawarra Shire Council, *Submission 479*, p. 6.

11 Mr Peter Mogg, Murray Irrigators Support Group, *Transcript of Evidence*, Shepparton, 21 January 2011, pp. 5-6.

12 NSW Regional Communities Consultative Council, *Submission 545*, p. 8.

13 Centre for Rural and Remote Mental Health, *Submission 315*, p. 2.

14 Mr Hart, Centre for Rural and Remote Mental Health, *Transcript of Evidence*, Dubbo, pp. 45-46.

3.22 All of this is due to a lack of information about how the Guide and resulting Plan are due to be implemented and in what timeframes:

The future of farming has to be with the younger generation coming forward – the second, third and fourth generations – and the way in which things are happening means we are going to lose them. In the long term I do not know where the government is going to get its food supply from if we do not have the farmers to grow the food supply for Australia. This is the big uncertainty. The longer we leave the Basin Plan in limbo and do not know what the decision is going to be, the worse it will be. The quicker the decision is made one way or the other, the better it will be for all of us.

...

I have two sons-in-law and a young bloke of 25 working on the farm. We have a couple of hundred hectares where we are producing wine grapes, citrus and vegetables. We are an uncertainty for them. The young generation are saying these days: 'What are we going to do? Are we going to stay here or are we going to leave?'

There is uncertainty created by the Basin Plan. I do not know how long it is going to continue before they make a decision, but if there are any water cuts in this region then those young people will leave the industry – and that includes my family. I know for a fact there are other families around here that will do the same. It will be disastrous for this region; it will be disastrous for Griffith. Businesses will not survive. It is a nightmare just thinking about what could happen. But the uncertainty – we need to really push this along as quick as we can, not wait one, two or three years. It will decimate the region in three years time. The way things are going we will not be here. I know that it is a hard job for you people to go ahead and work on a system, but you need to move forward very quickly.¹⁵

3.23 The MDBA in the Guide and community presentations repeatedly and consciously failed to adequately articulate how the Basin Plan would be realised once it passed the Commonwealth Parliament. The justification given is that this is the responsibility of the states through water planning processes that are yet to occur. Whilst this explanation is technically or

15 Mr Bruno Brombal, Chairman, Wine Grapes Marketing Board, *Transcript of Evidence*, Griffith, 25 January 2011, p. 51.

bureaucratically correct, it clearly demonstrates both a failure by the MDBA to engage with the states and a lack of shared responsibility from the states and has led directly to the business uncertainty and lack of investor confidence currently existing across the Basin.

Employment projections

- 3.24 The potential for substantial job losses with any further reduction in water availability is real and concerning for many communities. Like the wider Australian population, farmers are aging. Coupled with the potential impact of the Basin Plan attracting young people into regional towns and agricultural jobs is a challenging issue that the broader industry needs and is ready to address.
- 3.25 Figures regarding the potential loss of jobs across the Basin as a result of the Basin Plan vary significantly. In the Guide, the MDBA projected long-term job losses to be in the order of 800 full time positions.¹⁶
- 3.26 The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) has projected the Basin Guide would create 5 000 short-term losses which is five to six times higher than the long-run estimated job losses.¹⁷ The widely quoted 'Stubbs Report' has projected 14 000 permanent job losses at the national level.¹⁸
- 3.27 The Committee recognises the difficulty in making an accurate prediction regarding the impact on employment given the range of variables and different SDLs involved.¹⁹
- 3.28 However, the Committee also notes that the context in which the above analyses were undertaken has changed. There have already been significant volumes of water purchased for the environment and some families or individuals have decided to sell their water and retiring, or converting to lower production farming (for example converting from dairying to cropping). If the water purchase program or other government activities continued, the impact on employment would continue to vary.

16 MDBA, *Guide: Volume 1*, Canberra, October 2010, p. 121.

17 Mr Paul Morris, Deputy Executive Director, Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), *Transcript of Evidence*, 23 March 2011, Canberra, p. 22.

18 Dr Judith Stubbs, Principal, Judith Stubbs and Associates, *Transcript of Evidence*, 16 February 2011, Dubbo, p. 61. Judith Stubbs and Associates, *Report 4: Exploring the relationship between community resilience and irrigated agriculture in the MDB: Social and economic impacts of reduced irrigation water*, June 2010, p. 8.

19 ABARES, *Supplementary Submission 399.1*, p. 5.

3.29 ABARES has predicted that the actual long-term impact of the Guide on employment, settling in 2018-2019 when SDLs are fully adopted and the buyback has been completed, to be in the lower end, being 0.1 per cent of current employment levels.²⁰

3.30 The Victorian Farmers Federation contested this prediction:

An estimated 15.9 direct jobs are generated from every gigalitre of water utilised in fruit production, 4.2 direct jobs for every gigalitre used in grazing enterprises and 1.2 direct jobs in cotton production²⁰. Based on the estimate for low labour intensity cotton production, 3600 direct jobs are expected to be lost from the MDB if an overall SDL of 3000GL were applied to the Basin. Based on the lowest requirement for labour in a farming enterprise, this data alone suggests that the working behind the initial figures identifying the loss of 800 jobs in the MDB is essentially flawed.

3.31 Analysis of local government statistical districts shows that an average of 15% of jobs in the agricultural sector have been lost across the key local government areas of Mildura, Swan Hill, Gannawarra, Campaspe and Moira.²¹ The accuracy of predictions is questionable. It is a range of factors, including individuals' financial position, stage in life cycle, business and lifestyle objectives, location, alternate skills or opportunity to change. ABARES notes:

The changes in employment are much smaller than changes in [Gross Regional Product]. The employment estimates generated by AusRegion are long-term estimates, and assume that labour is relatively free to move between industries and regions. While this is likely to be a fair assumption in the long run, especially when the economy is performing strongly as it is now, changes in access to irrigation water are likely to lead to more immediate and significant effects on employment, especially in towns and communities highly dependent on irrigation. Government actions under the WftF [Water for the Future] would be expected to partially offset these effects in the short term by providing employment opportunities in the construction and installation of water infrastructure. The extent to which employees made redundant in irrigated agriculture and related industries can transfer the construction and installation of irrigation infrastructure will depend on their skill sets. The time frame over

20 ABARES, *Submission 399*, p. 12.

21 Victorian Farmers' Federation, *Submission 395*, p. 17.

which the policies are being introduced should also help ease the transition to less irrigated agriculture, with the gradual release of labour from this sector likely to be more easily absorbed into other sectors than if there was a sudden reduction in irrigated activity. However, the location where labour is released and where it is absorbed will often differ.²²

- 3.32 Nonetheless, the short-term job losses are likely to be significant if the SDLs are not changed and if non-strategic buyback is the main method of claw back. Caution is needed when identifying specific impacts. ABARES noted:

There is a bit of a risk and we are a bit wary about going down the path way of saying, 'This particular bank in this particular town is going to close,' or 'This particular rice mill is going to close,' because it becomes a self-fulfilling prophecy. The minute you tell the world that this rice mill is going to close, all of a sudden the banks say, 'We are going to cut our funding to them' or whatever, and all of a sudden you have actually created a self-fulfilling prophecy where that rice mill does get forced to be closed. So we are a bit careful in terms of not wanting to go to such a micro level, even if we could do that, that you actually create the environment that leads to things happening that might not otherwise have happened. What you tend to find in regional and rural Australia is that sometimes things happen which are unexpected: a new enterprise develops, a new tourist operation or educational institution or whatever or a mining operation, for example. All of a sudden those towns become much more viable in that region than would otherwise have been expected. So to actually try and predict at a very micro level what might happen to individual towns is fraught with danger.²³

- 3.33 The scale of employment-loss projections across the Basin are concerning. The Basin Plan would need to be implemented with significant structural adjustment assistance if the current SDL recommendations were kept, including assistance for adjustment out of irrigated agriculture into dry-land or alternate enterprise in some areas.
- 3.34 The Committee received overwhelming evidence about youth migration out of regional centres, largely due to drought and a lack of job and education opportunities. Concerns were raised that this migration pattern

22 ABARES, *Submission 399*, p. 12.

23 Mr Morris, ABARES, *Transcript of Evidence*, 23 March 2011, Canberra, pp. 27-28.

will accelerate with any further reduction in irrigated agriculture also triggering a contraction of towns and regional cities.

- 3.35 However, the Committee also received evidence about areas reversing these trends, as one training organisation stated:

They [Narrabri employers group] are also designing jobs. One of the issues, apart from our business skills sometimes not being up to par, is the capacity to design decent jobs – to design jobs that people would want to go and do, particularly young people. We have just done a cost-benefit study – I will be happy to hand this up to the committee if you wish – on the Narrabri model, done by ACIL Tasman, with progress to date in that region; it potentially improves productivity by 3.2 per cent. More importantly, perhaps, it has an impact on the net migration out of the place, which has been reduced by 33 per cent – that is the number of people leaving, particularly young people. When we did the job summit, the anecdote was that our two best loads of young people leave Narrabri every year because once they have finished their HSC they go to Sydney. They are now seeing an opportunity, in jobs and futures there, so some of them are staying. That is a really powerful model which could be applied more broadly than just there. They are much better equipped than we are, sitting here, to come up with those sorts of ideas.²⁴

- 3.36 Skilled training organisations should play a key role in skilling individuals to adjust to any new regional jobs options. As well, major new investment in farm management and agribusiness training is needed. Food and fibre production will continue to require world best practice and innovation so that we can compete with imported produce and in export markets.
- 3.37 Australian rice and cotton growing is now benchmarked as best practice in new varieties and higher yields and water savings or tonnes produced per GL. The innovation and leading industry activity must be supported to continue.

24 Mr Arthur Blewitt, Chief Executive Officer, AgriFood Skills Australia, *Transcript of Evidence*, Canberra, 25 February 2011, p. 5.

Existing pressures on farming communities and the drought

3.38 The Guide was presented to people already suffering the general pressures faced by farming communities competing in very difficult markets or supply conditions and compounded by years of drought. The reaction to the Guide and its impact also needs to be seen in this context. Pressures faced by farming communities include:

the ongoing declining numbers of farm establishments, farm families and farmers; the loss of young people to agriculture and to basic communities; the ageing profile of farmers; the insufficient productivity gains for the majority of farms to compensate for the compression in terms of trade; the low incomes generated for most farmers – 50 per cent of Australian farms have an estimated agricultural operations value of less than \$70,000; the increasing dependence of farmers on off-farm income; the loss of so-called entrepreneurial farmers with mid-sized farms through increased investment driven debt; and the high costs and high risks associated with entry into agriculture.²⁵

3.39 Many gave evidence to the Committee about these pressures, particularly the future of farming with an aging workforce profile, the increasing investment-driven debt, in part aimed at water efficiency measures, and the lingering financial impact of the drought. The Committee also saw horticulture and cotton growing enterprises in the Basin, cereal and dairy production that was highly innovative and best practice. Agriculture has always been a high risk enterprise demanding highly experienced expertise.

A decade of drought

3.40 The Guide has been delivered following over a decade of severe drought. Many are still struggling to recover from the long-term impact of the drought, and in a cruel irony, some are also recovering from extensive flooding experienced in late 2010 and into 2011:

This year, 2010, marks the end of 14 years of drought in south-east Australia. The prolonged dry spell was characterised by a combination of recurrent drought (short-term dry spells), less autumn and winter rainfall in most years, and an absence of very wet periods. Recent widespread, above-average rainfall across much of Australia has alleviated short-term dry conditions.

25 Prof. Chris Miller, School of Social and Policy Studies, Faculty of Social and Behavioural Sciences, Flinders University, *Transcript of Evidence*, Murray Bridge, 18 January 2011, p. 29.

November 2010 was Australia's wettest on record, with high rainfall across most of eastern Australia. Australia received its wettest spring (September to November) on record.

The combination of low river system inflows and low storage levels during the drought resulted in a severe water shortage for irrigators, particularly in the southern basin. From 2005–06 to 2008–09, the area irrigated and the volume of irrigation water applied in the basin have decreased by 44 per cent and 53 per cent respectively.²⁶

3.41 This makes allegations of irrigation water being over allocated or of farmers upstream 'stealing' water particularly poignant.

3.42 It was suggested that the drought intensified the realities of farming and:

reminded us that, for many, agricultural work as we currently know it should not automatically be defended as a 'no change' scenario. The realities of farming are reflected in the higher than average suicide rates amongst farmers. They are reflected in mental health referrals, domestic violence levels and increasing crippling household debt. They are also reflected in basin communities, with declines or stress in agricultural related industries, in the retail and service sector and in the housing market. There is also recent evidence of growing antisocial behaviour amongst young people who are still left behind in those communities. They are also reflected in the continuing failure to attract and retain essential professionals, such as medical and healthcare staff, teachers and public servants. There is also evidence of an outward migration of those who are highly skilled and who have expertise.²⁷

3.43 Across the Basin, employment levels fell as a result of reduced water access due to the drought. Given the volumes of water sold off farms to relieve debt, combined with rationed and reduced allocations of water, it is possible to compare the response to this reduced water access with the impact of another round of water access reductions as recommended in the MDBA's Guide:

The [Cotton Catchment Communities] CRC [Cooperative Research Centre] Wee Waa drought study found among other conclusions that:

26 Department of Agriculture, Fisheries and Forestry, *Submission 473*, p. 11.

27 Prof. Miller, *Transcript of Evidence*, Murray Bridge, 18 January 2011, p. 29.

- Permanent staff numbers fell 60 per cent between 2004 and 2007 and Casual employment fell 40 per cent;
- The main type of staff positions terminated were Professionals, however positions have been cut across all jobs;
- Of the terminated employees; 2/3 have left the region and the remaining 1/3 are either working locally or are unknown;
- 60 per cent of businesses have downsized as a result of the drought. The majority of these businesses had downsized by at least 50 per cent;
- 95 per cent of businesses had a 60 per cent or greater reliance on a healthy agricultural sector especially the irrigated cotton industry;
- Reduced access to surface and groundwater for irrigation was the biggest factor other than drought impacting on business.²⁸

3.44 A similar story was reported in the southern Basin:

A recent study by RMCG consultants investigated the impact of the recent drought on non-farm businesses within a dairy industry community reliant on irrigated agriculture. This study analysed how the town would respond to future water scenarios.

The results showed that successive years of low water allocations combined with a difficult operating environment had a significant impact on businesses. 75 per cent of businesses interviewed had experienced up to a 35 per cent decline in turnover due to the reduction in agricultural activity.

Most businesses had effectively modified their practices to mitigate the impact of the drought however they believed that no further opportunities existed and further change would simply be taking market share from a business competitor.²⁹

3.45 The social impacts of the drought were also widely reported, with most areas of the Basin reporting significant impacts, for example:

The Social/Community Impacts identified included:

- Combined ... Primary and Secondary school numbers declined ... between 2001 and 2007;
- There is less capacity for the community and business to donate time, resources and funding essential to the viability of schools;
- There has been a doubling in the number of people accessing health support/ counselling due to the drought;

28 Auscott Ltd, *Submission 301*, p. 2.

29 Australian Dairy Industry Council, *Submission 196*, p. 9.

- Health organizations were producing more information packages specifically for rural communities on mental health issues such as depression.³⁰

Case study 3.3 Social impact in Sunraysia

In Mildura, Mr Forbes of the Sunraysia Rural Counselling Service told the Committee of increasing hardship in the area, particularly since 2006. In explaining the current situation, examples of the issues that farmers have had to face are: extremely dry and hot conditions; poor prices for fruit, higher interest rates; and the tightening of lending following on from the global financial crisis. A graph in Sunraysia Rural Counselling Service's submission³¹ shows an increase in client numbers since the drought was declared in 2005. Mr Forbes expressed concern over the prospect of a decrease in water availability and the possible effects on the local community, and this being an indication of continuing need for rural finance counselling services. He continued to explain that along with the increased demand for counselling services, he was seeing counsellors more distressed as a result.³²

- 3.46 The drought recovery that can be witnessed throughout the Basin is testament to the resilience of these communities. The impact of the drought on job losses and economic contraction in different regions is a vivid reminder of what another similar round of water access restrictions (this time permanent) would look and feel like. It is clear that any further transfer of water from farms to the environment must be achieved through increased water use efficiencies if a repeat of the drought impact scenario is to be avoided.

A sense of powerlessness

- 3.47 Communities reported to the Committee that the release of the Guide has made them feel powerless, and that their contribution to decades of water reform has been rendered meaningless. Repeatedly, people said to the Committee at its site inspections 'I've worked with the government for years on water reform, why should I continue to bother?'
- 3.48 The delivery of the Guide on the back of the drought and without any apparent awareness of the realities of the farming pressures has compounded the stress experienced by communities:

The sense of powerlessness that we see has been exacerbated by the happenings over the last couple of decades. We see the water reform in many of our communities as being one of the last straws. Return of water to the environment is being perceived as an attack

30 Auscott Ltd, *Submission 301*, pp. 2-3.

31 Sunraysia Rural Counselling Service Inc., *Submission 384*, p.4.

32 Mr Forbes, Sunraysia Rural Counselling Service Inc., *Transcript of Evidence*, Mildura, 19 January 2011, pp. 14-18.

on community livelihood. We are talking about community not just irrigation farmers at this point. The way the plan has been presented and the level of anger that has come from a lot of the communities is a really good sign of this.³³

- 3.49 Yet, as discussed throughout this report, there is also significant support for continuing environmental protection and ensuring healthy working rivers. In the Committee's view, had the Guide been developed in a way that was sensitive to the realities of farming communities, much of the anxiety in communities could have been avoided.

Interdependence of communities

- 3.50 Much of the focus of the Guide, the Water for the Future and other government assistance programs (discussed in Chapter 5) has been on irrigator assistance and efficiency.³⁴ Communities and the productive enterprises that make them up are interdependent. Communities rely on the productive capacity of irrigators, they are valuable contributors to the economic success of their communities, and irrigators want to live in vibrant, healthy communities.
- 3.51 Farmer spending is a significant contributor to retail and wholesale trade, finance and business sectors, transports, machinery and storage in Basin towns and cities.³⁵ This spending has reduced over the period of the drought with significant farming income being derived from off-farm sources, coupled with increasing debt:

Most irrigation farms had some form of off-farm income. About one-third obtained more than 50 per cent of total family income from off-farm sources. On average, about one-third of the total off-farm income earned by irrigation farms in 2007–08 was from wages or salaries, while about half was from sources such as government assistance and non-farm investments.

Average farm business debt for irrigated broadacre and horticulture farms in the basin rose in 2007–08, while for dairy farms there was a small decline. The major components of farm debt were land-purchases debt and working capital debt.³⁶

33 Mr Ross Neville, Uniting Church in Australia, *Transcript of Evidence*, Canberra, 23 March 2011, p. 32.

34 For further discussion on this issue, see Lin Crase, *Submission 323*, p. 10.

35 Victorian Farmers Federation, *Submission 395*, p. 20.

36 Department of Agriculture, Fisheries and Forestry, *Submission 473*, p. 10.

- 3.52 Due to the drought, farm sector debt has accelerated and many have been pressured to make decisions to sell water assets making it difficult to meet future production and service debt:

many farmers have very substantial debt. The most valuable asset that most farmers have in terms of securitising that debt is their water allocation. That is of major concern. ... We are hearing on the grapevine that where banks have concerns with a client's borrowings the first target is usually the suggestion of selling some water so that they can sure up their capital position with the bank. But, of course, that has an effect on production or the farmer having to buy temporary water.³⁷

- 3.53 The Committee was told that individuals, families and communities are exhausted by the intense pressures faced in recent years. Many told the Committee that they were so exhausted by the constantly changing water policy arena that they were ready to give up farming rather than have to implement a new set of regulations. This, coupled with general pressures facing farmers, may see the closure of a significant number of farming operations:

Many of the smaller businesses have reduced labour and are now relying on more input from family members. Family energy reserves have been depleted and are not sustainable.

If the economic activity of the past few years continues, communities will be in trouble and come under significant economic pressure as 20 per cent of businesses indicated they would close if the operating environment does not improve. This economic pressure will exacerbate human stress and health impacts, and undermine the community fabric.³⁸

- 3.54 Individual family farming operations are also often employers in small communities. These individuals not only feel responsible for their own family welfare, but that of their employees. The Committee was repeatedly told stories like the following:

At the moment there are fourteen families dependant on employment with the Pechelba Trust group, and as we shop locally as much as we can, there is a significant flow on effect for the towns of Moree, Dirranbandi, Wee Waa and Narrabri. There are fourteen children of Pechelba employees either attending

37 Mr Andrew Forbes, Sunraysia Counselling Service, *Transcript of Evidence*, Mildura, 19 January 2011, p. 14.

38 Australian Dairy Industry Council, *Submission 196*, p. 9.

school or pre school, and using the medical and other services provided in our local towns.

All have been put under immense stress since the release of the Draft Murray-Darling Basin Plan.

They all know that without water we will be unable to guarantee them employment, and that if they do lose their employment it will mean shifting out of the irrigation areas and moving God know's [sic] where to try and support their families in a strange area, where they don't know anyone, and will not be able to perform the work they have been trained to do.

From the Cush families' perspective - we have even more stress to cope with. Not only do we feel very much for our employees, but we must meet our commitments to the bank on loans that were put in place years ago to service expansion into irrigation that would provide for the future needs of our families. It is just not possible to service these debts without being able to use the full capacity of the water we have purchased.³⁹

3.55 Farming is not only a way of life, but it is integral to how farmers perceive their identity and their legacy for future generations. Repeatedly the Committee heard sentiments such as 'we do this because we love it' and 'it's a lifestyle, not a job' and 'I want to pass this land on to my children'.

3.56 The farm is part of the regional Australian identity:

In rural Australia, the family farm is an important cultural foundation of rural society. As a cultural symbol, the family farm is the tangible expression of rugged independence where the man on the land is held to be in charge of his own destiny. Over time, the family farm has become an extension of the landholder's personality, an outward reflection of their prosperity and, the embodiment of their intergenerational aspirations. Farmers seek to ensure their land is turned over to the next generation in a much better condition than when they commenced farming the land.

For many landholders, their ability and skill as a farmer underpins their social standing within the community. It also serves to align their cultural image with the self-image farmers hold of themselves as being good stewards of the land.⁴⁰

39 Ian and Robyn Cush, *Submission 89*, pp. 1-2.

40 Dr Barry Hancock, *Submission 356*, p. 4.

- 3.57 Pressures of farming affect more than just individual and family mental health they affect the wellbeing of communities. When farmers and farming communities cannot fulfil their role as land stewards due to external pressures such as government policy and drought, the impact is greater than falling economic security. The welfare of Basin communities is of utmost importance in any Basin planning process.

Use of science and data

- 3.58 The former chair of the MDBA repeatedly told the community, and this Committee, to 'question the science'. Although the CSIRO states that the MDBA did not use 'best science' in a number of areas, it is the assumptions that have been made by the MDBA that are of particular concern.
- 3.59 The work done by the CSIRO in its Sustainable Yields project formed the basis of a lot of the modelling that underpinned the Guide.⁴¹ Even with this as a basis, the CSIRO expressed dissatisfaction in the assumptions applied by the MDBA and the way the results were communicated:

There are a number of areas where our view is that what is documented in the Guide either does not represent best available science, or does not represent appropriate application of best available science in the context of the Basin Plan and the wider context of the National Water Initiative. There are also areas where the explanations in the Guide are either misleading or do not fully articulate key assumptions made by the Authority.⁴²

41 Mr Russell James, Water Resources Branch, SEWPAC, *Transcript of Evidence*, Canberra, 9 February 2011, p. 11.

42 Dr Bill Young, Director, Water for a Healthy Country Flagship, CSIRO, *Transcript of Evidence*, Canberra, 25 February 2011, p. 12.

- 3.60 A review undertaken by a panel of international experts, chaired by Professor John Briscoe from Harvard University, came to the following assessment of the methodologies used in the development of the science behind the Guide:

The Murray–Darling Basin Authority (MDBA) has been required to develop a method to determine the environmentally sustainable level of take within a very short timescale and with access to only limited types and coverage of data. Against this background, reviewers concluded that the methods being used to determine the environmentally sustainable level of take are scientifically robust, appropriate and fit for purpose. The method for surface water, which integrates a Basin-wide, environmental flow assessment based on the water requirements of key ecosystem functions and a detailed assessment of the environmental water requirements of 18 hydrologic indicator sites, represents a rigorous and scientifically defensible approach. A considerable spread of scientific knowledge has been used, including contributions from a number of respected scientists, and for the most part the method uses ‘the best available science’ as required by the Water Act 2007 (Cwlth).⁴³

- 3.61 The Commissioner of the NSW Office of Water, Mr David Harriss, outlined for the Committee the extent of the data and modelling that was provided to the MDBA for the purpose of preparing the Guide:

We provided them access to our models. We provided an access to how to use the models and the technical support. But as the minister said in his opening address, we provided no assistance in interpretation of the results of those models or their application to how they would be used to determine a sustainable diversion or anything like that. That was solely the responsibility of the authority.

Certainly from the Office of Water’s position, we did not offer any technical support in telling them what the environmental needs of any particular wetland were other than to identify what we had done previously in our water sharing plans, which is in the public domain in any case. I cannot speak on behalf of any other organisation that might have provided advice, or any of the universities or research institutions, but certainly from the Office of Water’s perspective we provided them all of our technical information. We do currently manage the biggest hydrometric

43 MDBA, *Developing the Guide to the proposed Basin Plan: Peer Review Reports*, 2010, Canberra, p. 44.

network in Australia so they have access to all our real-time data and all our historical records. They had all that information and they had all the technical support to be able to use it. But I emphasise that we were not party to the interpretation of that information.⁴⁴

- 3.62 Mr Harriss expressed to the Committee frustration that NSW was not involved in the how the data was used:

Again our response to the guide to the plan is in the public domain. We were quite critical in as much as we have not been party to the assumptions that were used in that modelling to determine the sustainable diversions limits or the methodology used to determine the needs for the environmental assets. We are still having an interchange with the authority trying to seek that information, because at the moment it makes it difficult for us to stand up and either support or discredit or do whatever if we do not really understand the mechanics behind it.⁴⁵

- 3.63 The international peer reviewers, in their report on an earlier draft of the Guide, while praising work of MDBA staff and the quality of the science, concluded in their report that:

Our single most important concern is about the lack of strategic direction very late in a process with a goal to produce a plan which is clear and would achieve broad public acceptance. Our conclusion is that much excellent work has been done on the components and details of the plan. But how the parts add up to a whole is not clear to us. More importantly we perceive that MDBA's superb staff are looking for guidance on how this all fits together and how to direct their limited resources under very tight time constraints to produce an excellent and understandable product. Our impression is that the senior management and the board need to provide a clear strategy and direction to the staff producing the plan.⁴⁶

- 3.64 Mr James Delahunty from the Wimmera Irrigators Association, identified a key example of how a simple erroneous assumption, caused by a lack of local knowledge or consultation, can significantly change the outcome:

44 Mr David Harriss, Deputy Director-General and Commissioner, New South Wales Office of Water, *Transcript of Evidence*, Canberra, 9 February 2011, p. 21.

45 Mr Harriss, *Transcript of Evidence*, Canberra, 9 February 2011, p. 21.

46 MDBA, *Developing the Guide to the proposed Basin Plan: Peer Review Reports*, 2010, Canberra, p. 44.

The draft plan clearly says that there is no more water required for the environment in the Wimmera-Avoca region. We think they have made an error there. ...

Chapter 18 in the draft plan, which assesses the environmental water requirements for the Wimmera River terminal wetlands, draws heavily from a report which was done by the Ecological Associates in 2004. A lot of the Ecological Associates report has been transposed from that report directly into chapter 18 in a different format. One thing they did not transpose into the draft is a chart, a copy of which I have here. ... It has three sections: it fails to meet the objective, largely meets the objective or meets the objective. This is for getting water into Lake Albacutya and Lake Hindmarsh, which are the terminal lakes of the Wimmera River.

The enhanced flow scenarios here show that to largely meet the objective they need an enhanced flow of at least 80 gigalitres. The presumption would be that the 83 gigalitres that have been saved from the Wimmera Mallee pipeline are significant enough to meet the 'largely meets the objective' level. Unfortunately, of the 83 gigalitres that are saved from the Wimmera Mallee pipeline, only 45.6 gigalitres are destined for the Wimmera River. The remainder is destined for the Yarriambiack Creek flow. The Glenelg gets 22 gigalitres and Richardson River gets four gigalitres. The Waranga Channel is another nine gigalitres. It appears that they are only getting about half of what they think they are going to get. The chart shows that just 20 gigalitres make a big difference between failing to meet the objective and largely meeting the objective – from 80 gigalitres to 100 gigalitres. We are proposing that the Wimmera River does indeed need the water that the Wimmera irrigators have available to meet that objective.⁴⁷

- 3.65 In summary, it appears that the MDBA may have started with some sound methodologies, high quality data and respected modelling, yet delivered a document which fails to provide a credible scientific basis for the proposed SDLs. The following statements, both by Professor John Briscoe of the School of Public Health at Harvard University point to the likely cause of this outcome being a) requiring a technical based agency to make political trade-offs and b) a failure to draw upon relevant expertise:

This was clearly an impossible task given to the Authority, because they were somehow supposed to just use science but also

47 Mr James Delahunty, Secretary, Wimmera Irrigators Association Inc., *Transcript of Evidence*, Swan Hill, 30 March 2011, p. 50.

somehow relieve political leaders of their responsibilities to make this choice. That is a political issue....You cannot tell a technical agency to optimise both [environment and economy] because there are trade-offs between them.⁴⁸

Time and again I heard from professionals, community leaders, farmers and state politicians who had made Australia the widely-acknowledged world leaders in arid zone water management that they were excluded from the process.⁴⁹

- 3.66 Even though there are serious concerns about how the data and science has been used to develop the proposed SDLs, this should not be used to denigrate the science that was available to the MDBA, which is amongst the world's best. It does call into question, however, the SDL 'numbers' recommended.
- 3.67 There are gaps in data in some of the less regulated systems, particularly in the northern Basin, however this is due to a lack of monitoring. The scientific knowledge and management practices will be improved if better monitoring is put in place throughout this system. This is further discussed in Chapter 5.

Treatment of urban water

- 3.68 The treatment of urban water is illustrative of the questionable assumptions made in the Guide. Some of the key issues of concern are:
- the exclusion of consideration of systems with consumptive use primarily in urban areas, resulting in irrigators bearing an unfair burden of entitlement reduction; and
 - significant cuts to entitlement that result in a very low return to the environment.
- 3.69 There are some systems that will return very little water to the environment through proposed SDLs, and yet due to the relative difficulty in reducing urban water use, the impact on irrigation entitlement holders will be devastating. For example, in the Kiewa and Ovens regions in northeast Victoria where the majority of consumptive water use is for urban needs with a relatively small diversion for irrigation:

48 *Australian Financial Review*, 'Water expert rebuts claims', 2 November 2010, p. 7.

49 Professor John Briscoe, Submission to Senate Inquiry into the provisions of the *Water Act 2007*, Submission 2, p. 5.

... the town supplies extraction is nearly as much as the irrigation. Because of this fairly unique situation – if not absolutely unique – the proposed cut to the active diversions of 40 to 45 per cent as set out in the guide all falls on the irrigation element of that, which effectively cuts our irrigation allocations by over 70 per cent.⁵⁰

3.70 It was explained that, in practical terms:

The guide then says that a 40 to 45 per cent cut will be made on the irrigation factor – because they will not touch townships. So they are applying the 40 to 45 per cent on the total 25 diversions and then subtracting that from the irrigation. If you do the maths on that, they are putting 40 per cent on 25 and they come up a figure of 10 and they deduct that from the 14 that are used for irrigation. We are left with four. So out of 1,804 gegalitres generated out of the system, four would remain for irrigation. It effectively devastates irrigation for the north-east.⁵¹

3.71 The approach to urban water in the Guide is also problematic for the ACT where almost all of the water use is for urban purposes yet it is faced with the same significant reductions applied to the rest of the Murrumbidgee catchment. The ACT Government noted:

The MDBA does not recognise the ACT as a separate water resource management area that generates and manages water resources within the broader Murrumbidgee River catchment. The ACT, while identified in the Guide as a SDL area, is simply treated as a sub-unit of the broader Murrumbidgee region, without any analysis or understanding of the management of water resources within the ACT region. The Guide simply adopts a figure of 39 GL/y as the watercourse current diversion limit for the ACT SDL area, which is based on the ACT Cap under the Murray-Darling Basin Agreement.

As a pertinent example, the Guide only provides a summary of the entire Murrumbidgee region which describes it as being in very poor ecological, hydrological and streamflow condition. The CSIRO report on which this summary is based states that the relative level of surface water use under current development in the region is 53 per cent, noting this is an extremely high level of

50 Mr Anthony Griffiths, Mayor, Wangaratta Rural City Council, *Transcript of Evidence*, Shepparton, 21 January 2011, p. 33.

51 Mr Douglas Sharp, Chief Executive Officer, Wangaratta Rural City Council, *Transcript of Evidence*, Shepparton, 21 January 2011, p. 35.

development. This description is not reflective of the Upper Murrumbidgee River catchment where the ACT sits.⁵²

- 3.72 The proposed reduction for the ACT places it at the same significant disadvantage as some irrigators given the limited ability to reduce urban water use and the inability for the ACT Government to influence water use in the surrounding Murrumbidgee catchment.
- 3.73 Mr Corbell MLA pointed out that, unlike elsewhere in the Basin, the ACT will not be able to participate in strategic water buyback:
- ...the MDBA is proposing a maximum usage at its highest level of reduction of only 22 gigalitres, which would have an enormous impact on this city. I also make the point that, unlike other jurisdictions and other areas in the basin, there is no opportunity for the Commonwealth to buy back water in the ACT. There are no allocations that it can purchase there. For the territory, that means if the MDBA imposed a reduction of this order we would be releasing water from our dams to meet the reductions and then we would have to buy that water back once it crossed the border and buy it from other parts of the basin to bridge the gap. We just find that to be an absurd proposition.⁵³
- 3.74 It is apparent that the decision by the MDBA not to distinguish between urban and agricultural water is not rational. While urban water users should share the burden of reducing the diversion of water from the Basin through responsible use of water, consideration is needed of how this responsibility can be met in a way that is compatible with the nature of the usage.

52 ACT Government, *Submission 526*, p. 10.

53 The Hon. Simon Corbell, Minister for the Environment, Climate Change, Energy and Water, ACT Government, *Transcript of Evidence*, Canberra, 23 February 2011, p. 4.

Consideration of climate change

3.75 The Committee heard a number of concerns about the way that climate change has been factored into the setting of the SDLs and the lack of clarity around this.

3.76 In their submission to the inquiry, Environment Victoria highlighted inconsistencies between the MDBA and CSIRO estimates of climate change impact:

The Guide suggests that surface water availability will decline across the Basin by about 10 percent by 2030. The CSIRO Sustainable Yields Project predicts much greater variability even under the median 2030 climate change scenario. Under this median scenario, diversions in the driest years would fall by more than 10 percent in most NSW regions, around 20 percent in the Murrumbidgee and Murray River regions, and from around 35 to over 50 percent in the Victorian regions. Reductions under more severe scenarios are much greater.

In its Guide to the Plan, the MDBA proposes a reduction of water allocations of just 3 percent to allow for climate change. This allowance is based on CSIRO's median forecast, halved on the basis that part of the impact should already be present, and halved again to reflect the envisaged ten year (2011 to 2021) life of the plan (even though Victorian implementation would only commence in 2019 and finish in 2024).

This approach seems rash for a number of reasons. Firstly, a 3 percent reduction in water availability (based on long term averages) during the 10 year life of the Plan appears to be a massive underestimate in the light of recent experience.⁵⁴

3.77 The Australian Dairy Industry Council put a view that opposes the Environment Victoria position, in that the climate change effect is too uncertain and that climate change impacts should be deferred to subsequent plan reviews.⁵⁵

54 Environment Victoria, *Submission 317*, pp. 13-14.

55 ADIC, *Supplementary Submission 196*, p. 5.

3.78 Concerns were also raised regarding the lack of consideration for regional differences in how climate change will impact different regions of the Basin.⁵⁶ CSIRO expressed the same concern in their submission to the MDBA consultation on the Guide:

...the projected climate change to 2030 from the MDB Sustainable Yields program are very different for different regions. There will be much greater impact on water resources in the southern basin than the northern basin. This is easy to incorporate because the time series of changed inflows have been made available by CSIRO. However these regional patterns and the requirements of each regional plan do not seem to have been included in the guide.⁵⁷

3.79 The NSW Government raised concerns about the lack of evidence in the Guide supporting the adoption of a three per cent reduction in diversions due to climate change.⁵⁸

3.80 Mr Nigel Parratt of the Queensland Conservation Council put to the Committee that the assumption regarding climate change in the Guide are inconsistent with those being made in other planning frameworks.⁵⁹

3.81 The CSIRO, are very critical of the way that climate change was incorporated into the Guide:

... modelling of the impacts of potential climate change has not been used to determine the SDL. The explanations of climate variability and climate change considerations in the Guide are vague, and different interpretations are possible. There are three main issues:

- (i) The guide tries to justify why the climate projections to 2030 are not fully included in the plan. This justification does not appear correct or defensible.
 - (ii) Climate projections show variable impacts will occur across the basin and this variation has not been included.
 - (iii) The guide advocates that climate change be dealt with in regional water sharing plans but the methods to do that
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56 Orana Regional Organisation of Councils, *Submission 582*, p. 6; Council of the Shire of Bourke, *Submission 247*, p. 9.

57 CSIRO, *Submission to the MDBA consultation on the Guide to the proposed Basin Plan*, December 2010, p. 12.

58 NSW Government, *Submission 585*, pp. 34-35.

59 Mr Nigel Parratt, Rivers Project Officer, Queensland Conservation Council, *Transcript of Evidence*, Goondiwindi, 16 March 2011, p. 20.

appear impractical and in fundamental conflict with other objectives of regional water sharing plans. The conclusion for this is that projected climate change has not been fully included in the plan or any subsequent processes.⁶⁰

- 3.82 The above comments made by the CSIRO are of particular concern as the MDBA repeatedly reference research by the CSIRO when discussing their consideration of climate change in the Guide.⁶¹ In their submission to the MDBA process, the CSIRO provide the following criticisms:

There are flaws in the reasoning for the 3% reduction and it is certainly not based on CSIRO science or advice. It is not possible to understand how this '3% reduction' is accounted for in the report. It does appear that it is accounted for only in the environmental water requirement. This is inadequate as climate change will impact first on inflows and then have flow-on consequences for all uses.

...

At the very least some discussion should be provided of the expected environmental consequences of climate change and the implications for water planning and SDLs. Analysis and discussion of without development flow regimes under future climate would provide a basis for this.⁶²

- 3.83 It is clear that the MDBA has, in coming to a position on the proposed SDLs made a number of poor assumptions using what is otherwise sound science. In addition, the logic for applying three per cent for climate change appears flawed and clearly needs to be given serious reconsideration.

60 CSIRO, *Submission to the MDBA consultation on the Guide to the proposed Basin Plan*, December 2010, p. 11.

61 MDBA, *Guide: Volume 2*, pp. 118-124.

62 CSIRO, *Submission to the MDBA consultation on the Guide to the proposed Basin Plan*, December 2010, p. 11.

Recommendation 2

The Committee recommends that the Murray Darling Basin Authority apply greater rigour to the assumptions made to develop the proposed sustainable diversion limits, including the forecast impact of climate change, taking into account regional variability.

Review mechanisms

3.84 Under the Water Act, the MDBA is required to:

- advise the Basin Ministerial Council on the impacts of the Basin Plan five years after the Plan takes effect and publish this advice on its website;⁶³
- undertake regular ten yearly reviews of the Plan.⁶⁴

3.85 The MDBA may also be compelled to review the Basin Plan if requested by the Commonwealth Minister or all of the Basin States if they are not satisfied that the outcomes are being achieved and in practical effect, this could result in five yearly reviews.⁶⁵

3.86 The Act also requires the MDBA to prepare a discussion paper for community consultation and how this consultation is to take place.⁶⁶

3.87 Given the Committee's concern about the initial assumptions made by the MDBA, it considers that this review mechanism in the Act is of vital importance and the recommendation in the following Chapter regarding how the MDBA should approach the development of the Basin Plan also applies to how it conducts these reviews.

63 The Act, Section 49A.

64 The Act, Section 50(1).

65 The Act, Section 50(2).

66 The Act, Section 51.

Setting sustainable diversion limits for groundwater

- 3.88 The Committee heard concerns regarding the way that the MDBA addressed groundwater use in the Guide. These concerns relate to the unreliability of data on groundwater and the need to acknowledge past reform, particularly the Achieving Sustainable Groundwater Entitlements (ASGE) program in NSW.⁶⁷ Concerns were also expressed with regard to how the Government's commitment to 'bridge the gap' will be applied to groundwater.⁶⁸
- 3.89 With regard to the modelling for groundwater, the MDBA acknowledged that there is significant uncertainty associated with modelling of groundwater systems that show strong declining trends in groundwater levels.⁶⁹
- 3.90 Mr Paul Trevethan of Howlong, NSW, provided an example where the use of groundwater data by the MDBA is inconsistent with other existing programs:

The MDBA Draft Plan suggests that the 015 aquifer is not highly connected to the Murray River. However, in a recent meeting with NSW departmental officials, we have been informed that the 015 aquifer derives about 50% of its recharge from the Murray River. Whilst these two notions may be compatible (the MDBA Plan states low connectivity with the river if less than 70%), surely there needs to be a reconsideration of the inequity of treatment of surface and groundwater with respect to current diversion limits and sustainable diversion limits. The need for a review of this policy is even more necessary where it has been deemed that connectivity between surface water and groundwater is evident.

If we are to believe that surface water and groundwater is a continuum, why are they treated as significantly different for the purposes of the MDBA Plan?⁷⁰

67 For example see: United Dairy Farmers of Victoria District Council 3, *Submission 530*, p. 9.

68 Lachlan Valley Water Inc., *Submission 469*, p. 9.

69 MDBA, *Guide: Volume 1*, p. 76.

70 Paul Trevethan, *Submission 355*, p. 2.

- 3.91 Along with others presenting evidence to the Committee, Mr Jonathan Phelps, Director of Namoi Water, suggested that previous reforms of groundwater have claimed to be based on 'best available science' and questioned how the MDBA can then set even lower SDLs using the same science:

There is plenty of evidence to support the Namoi groundwater licence holders' supportive role during the reductions. We strongly supported the COAG principles of the time to ensure sustainability of the resource, ensure fairness, maximise economic output, minimise negative social impacts and mitigate the impacts.

To see in this MDBA plan a section on groundwater suggesting a further cut of 11 gigs using the same science but, as they say, a more conservative approach is very disturbing.⁷¹

- 3.92 The ASGE program is described by Murrumbidgee Groundwater Incorporated (MGI) as follows:

Our region has been through the Achieving Sustainable Groundwater Entitlements program (ASGE) funded by the Commonwealth and NSW governments. The program aimed to reduce the use of groundwater in our region to a sustainable level. As a result our constituents have already worn a high level of water reform and have been forced to restructure their farming operations to adjust to the changes.⁷²

- 3.93 While MGI acknowledged that these cuts appeared to be factored into the proposed SDLs in the Murrumbidgee region, this is not the case in the Namoi:

...the Namoi Councils Water Working Group have also raised issues and considerable concern with the MDBA's approach to setting SDLs for groundwater and the proposed reductions, particularly given the recent reductions already achieved through the \$135 million Achieving Sustainable Groundwater Entitlements (ASGE). The difference between "sustainable yield", i.e. the basis for the ASGE Program and the "sustainable diversion limits" that warrants a further 13% in the Lower Namoi Alluvium diversions needs explanation.⁷³

71 Mr Jonathan Phelps, Director, Namoi Water, *Transcript of Evidence*, Gunnedah, 14 February 2011, p. 22.

72 Murrumbidgee Groundwater Inc, *Submission 464*, p. 2.

73 Namoi Councils Water Working Group, *Submission 517*, p.12.

- 3.94 The Committee is concerned that the MDBA have proposed significant reductions in groundwater use without:
- confidence in the available modelling for groundwater systems;
 - adequately communicating their use of existing data; or
 - acknowledging past reform efforts and how they were taken into account.

Recommendation 3

The Committee recommends that the Murray Darling Basin Authority improve data on groundwater availability, use and connectivity with surface water prior to proposing sustainable diversion limits for groundwater.

Reputation of the Murray-Darling Basin Authority

- 3.95 The Murray-Darling Basin Authority as an organisation is built on a history of achievement dating back to the creation of the River Murray Commission in 1915. The River Murray Commission became the Murray-Darling Basin Commission (the Commission) in 1985.
- 3.96 Until the release of the Guide in October 2010, the Commission enjoyed a high level of respect in regional areas in the Basin and internationally as a science and engineering based institution. As an agency, the Commission successfully delivered programs such as the Salinity Management Strategy; Native Fish Strategy; the Living Murray Initiative; the Sustainable Rivers Audit; the implementation of the Cap on Diversions and the operation of the River Murray. The Commission was responsible for a long history of funding robust and respected scientific research. The Commission also held strong and productive relationships with state agencies and regional communities.
- 3.97 Judging from the evidence provided to the Committee by CSIRO and state governments, the development of the Guide has damaged the MDBA's relationship with the states and the science community. Professor Ray Ison of the Monash Sustainability Institute's National Water Governance Research Initiative identified this and a potential cause:

We have done research within the Murray-Darling Basin Authority since it was set up, so we have a certain amount of insight into its functioning. In the academic area I come from, the

concept of initial starting conditions is quite important. How you start out is what determines where you end up. The MDB, unfortunately, started out by interpreting its predecessor as a failure and failed to then take on board a lot of the learning that the Murray-Darling Basin Commission had. It certainly failed to take on the good network of regional relationships that that commission had.⁷⁴

- 3.98 It is easy to see in the language and sentiments expressed in evidence that the reputation of the MDBA has clearly been damaged as a result of the Guide. The loss of the previously held regard is evident in the submission from the Wakool Landholders Association, which notes the need for community confidence in the capabilities and integrity of the MDBA in achieving water reform objectives:

As far as our association is concerned the MDBA has lost all creditability in our community. To rectify this situation the MDBA must engage and consult with the basin communities at a local level. We need confidence that the Authority retains its non-political status and has impartial views that don't reflect the attitudes of various environmental groups. This unbiased approach is fundamental to restoring respect from all Australians.⁷⁵

- 3.99 A lot of the problems relating to the Guide and how it was received stem from decisions about how to work with communities, industries, scientists and state and territory governments; how the science should be used; and appropriate SDLs would be delivered and communicated in the Guide and the media. These are strategic decisions for which the executive and Board of the MDBA should accept responsibility.
- 3.100 As the MDBA will continue to be the central agency responsible for the implementation of the Basin Plan and developing future iterations of the Basin Plan, it is important that its standing in the community be restored. The recommendations in the following Chapter are proposed to achieve this.

74 Professor Ray Ison, Systems for Sustainability, Monash Sustainability Institute, National Water Governance Research Initiative, *Transcript of Evidence*, Canberra, 2 March 2011, p. 20.

75 Wakool Landholders Association, *Submission 288*, p. 1.

Engagement with the community

- 4.1 The issues outlined in the previous Chapter stem directly from a lack of community consultation, both in the development of the Guide and the information sessions following its release.
- 4.2 It is essential that the final Basin Plan and any related implementation plans (including state water sharing plans) reflect the local conditions in each Basin valley. This includes reflecting the knowledge of the local land and catchment managers in how to best manage environmental flows and savings and recognising the work done to date by communities in developing state water sharing plans.
- 4.3 The Committee heard repeatedly within communities about support needed for environmental recovery, but this was consistently partnered with a concern that MDBA assumptions did not reflect the reality of conditions within catchments and was too dependent on conditions during the recent extended drought.
- 4.4 The Chair of Murray Irrigation Ltd, Mr Stewart Ellis, expressed a desire for a successful Basin Plan but it needs to involve communities:

Is the Basin Plan needed? Yes. Like all the other groups, we are saying there is a need for a basin plan. The opportunity here is ripe. You can develop a basin plan, but it must be done in consultation with local communities. The Murray River is a connected system. You cannot just rely on flows from the upper Murray, the Menindee Lakes and the Darling River to supply all the River Murray requirements. It is a connected system. The tributaries, like the Goulburn and Murrumbidgee, are all part of the basin and we are all part of the solution to a better outcome for

the basin. But, again, I would just reiterate: communities like ours deserve a better approach.¹

- 4.5 Communities have been actively involved in environmental recovery programs, particularly in the southern basin through The Living Murray program. The need for further planning is known but not necessarily fully understood:

The current poor health of the Basin and its associated flora and fauna is alarming. Clearer explanation of how and why increased environmental flows will improve the health of Basin ecosystems and populations of important flora and fauna species is needed to attain a greater level of community understanding and appreciation for the scale of the problem needed to be addressed.²

- 4.6 Communities have the right and the need to understand why the Basin Plan is necessary and the process must reflect this need.

Case study 4.1 Community solutions

Basin-wide

Australian Rain Technologies (ART) presented to the Committee in March 2011 to explain the benefits of Atlant rainfall enhancement technology in the Murray-Darling Basin. Atlant technology is an experimental "green" technology that ART claim is low cost, environmentally friendly, flexible, targetable and adds water to the whole environment. It works as an on ground ionisation-based system designed to increase the proportion of cloud moisture that falls as rainfall downwind of the device.

Statistical analysis of four Australian trials conducted in the last three years, has shown highly significant measured enhancement effects. Based on the trial results, one machine produces around 300 GL of additional rainfall over a downwind area of 4,200 square kilometres. While the Atlant contribution is substantial in terms of rainfall, it does not significantly impact the general abundance of overall atmospheric moisture and analysis has revealed no detectable rain shadow effect. ART identifies the Gwydir Valley and the Hume/Dartmouth catchments as areas of potential Atlant application.³

Dam Geo-Engineering

In its submission Solartran suggests the use of large floating evaporation covers to minimise water loss due to evaporation. Solartran indicates that evaporation rate from reservoir surfaces is, conservatively, about 1 metre per year. Using the Lake Hume reservoir with its surface area of 20,000 hectares as an example, Solartran estimates an additional water yield from an evaporation cover at 182 GL per year.⁴

1 Mr Stewart Ellis, Chairman, Murray Irrigation Ltd, *Transcript of Evidence*, Deniliquin, 24 January 2011, p. 18.

2 Municipal Association of Victoria, *Submission 381*, p. 10.

3 Australian Rain Technologies, *Supplementary Submission 589.1*, p. 3.

4 Solartran, *Submission 147*, p. 2.

- 4.7 The planning process must also reflect the socio-economic needs of communities through targeted structural adjustment plans to offset any further impacts of any reduction in water availability. The knowledge regarding the best form of structural adjustment is held within communities, by business owners, employers and local councils. Communities must be engaged and have a leading role in managing their futures. All levels of government must be leaders in this process:

It is no good just saying to people: what is the economy going to look like in 10 years time with less water, or asking anyone in this room today what they would do if they were not doing what they are doing now. Most people who work in a particular field all their lives would find that a really difficult question to answer. We are dealing with a high level of uncertainty and that is, in part, what generates community anxiety in response. But we can actually get through that uncertainty and begin to plan for a better future as long as we have the key structural elements in place and as long as there is clear leadership from government demonstrating that government has belief in the capacity of communities to come up with viable options for the future.⁵

Case study 4.2 Reassessing land use

Land classification

CSIRO carried out a pilot study in the Torumbarry Irrigation Area (TIA) to investigate the potential for targeted investment in reconfiguration and water purchases to provide multiple benefits. These benefits include increasing the value of agricultural production and ecosystem services, and reducing water delivery costs and salinity loads. The study concluded that irrigated land use in the area could be reconfigured using a 'Traffic Light Concept' where land is divided into three planning zones based on soil, environmental and location characteristics.

Different water investment strategies would be applied in each zone:

- Green – Sustainable Irrigation: Priority locations for investment in irrigation infrastructure modernisation and efficient water delivery. Low priority for water purchases unless they provide particularly low cost water;
- Amber – Environment and Amenity: Priority locations for investment in rural amenity and ecological restoration. Encourage change in land use from irrigation to biodiversity and carbon plantings. High priority for water purchases based on potential for water delivery cost savings, public good environmental and salinity benefits; and
- Red – New Dryland: Priority locations for investment in new dryland farming. High priority locations for water purchases.

The environmental and economic benefits that can be achieved by using this reconfiguration design in the TIA are significant:

- 20 percent of the water used for irrigation can be returned to the environment – approximately 60 GL;

5 Prof. Chris Miller, School of Social and Policy Studies, Faculty of Social and Behavioural Sciences, Flinders University, *Transcript of Evidence*, Murray Bridge, 18 January 2011, p. 30.

- water delivery infrastructure operation, maintenance and replacement cost savings in the order of 40 percent;
- agricultural profitability could increase by 24 percent;
- cessation of irrigation in the 'red' zones would reduce salinity measured at Morgan (the key reference point) by up to 13EC. This equates to a cost saving of more than \$50 million over 30 years in salinity mitigation; and
- over 10 million tonnes of CO₂ equivalents sequestered annually by encouraging planting in the 'amber' zones.

The study shows that if the same volume of water is allowed to leave the district in an unplanned way, these benefits will be lost and the value of agricultural production will decline rather than increase.⁶

Alternative Cropping

An example from the Inland Rivers Network (IRN) of a low water, low chemical use crop with numerous commercial by products is industrial hemp. This crop and industry has the potential to create major employment opportunities in regional Australia. According to IRN, the dominance of the flood irrigated cotton and rice industries in the Basin needs to be analysed in relation to economic return per megalitre of water use as well as the environmental impacts and costs of that water extraction.⁷

Socio-economic studies

- 4.8 The Committee has not undertaken a comprehensive socio-economic study of the Basin. This is not the role of a parliamentary committee. This work should be undertaken by policy-makers, prior to any policy development. The MDBA and government agencies have been rightly criticised for not undertaking this work in conjunction with the development of a draft Basin Plan.
- 4.9 Indeed, there was little point in the Committee undertaking a socio-economic study with the changing ground in the water market as the Government continues to purchase water and the final SDLs are undetermined.
- 4.10 A number of socio-economic studies have been undertaken throughout the Basin, commissioned by a range of organisations. At the time of drafting the Guide, there was work available to inform a more comprehensive socio-economic analysis than is contained within the Guide.⁸
- 4.11 At the time of drafting this report, the socio-economic study commissioned by the MDBA late 2010 had not been released. While the Committee is disappointed about this, from private briefings held with the

6 Environment Victoria, *Submission 317*, pp. 19-20.

7 Inland Rivers Network, *Submission 409*, p. 4; see also Kitty Schiansky, *Submission 256*, p. 2; Matt Brown, *Submission 46*, p. 1.

8 For example, Marsdon Jacob Associates, *Economic and social profiles and impact assessments for the Murray-Darling Basin Plan: Synthesis report*, 7 July 2010.

MDBA, the Committee understands that the outcomes of this study mirror its own findings and the draft Basin Plan will be based on a more comprehensive understanding of Basin communities.

- 4.12 The Committee recognises that significant progress has been made towards the completion of this work. The recommendations contained within this report presume that this work will be completed.
- 4.13 While the MDBA has been specifically charged by the Water Act to develop the SDLs for Basin valleys, the Act also requires this to be placed in the context of the communities living within the Basin. The lack of focus on the community, both in terms of socio-economic analysis and community consultation is a key reason why communities are so opposed to the Guide.
- 4.14 If a further reduction in diversions is identified after proper auditing of current volumes allocated, there must be a minimal negative impact on communities. A comprehensive, localised, structural adjustment package could be necessary in some places of strategic buyback to ensure that these communities can remain healthy, viable and vibrant places to live.
- 4.15 Any structural adjustment packages will only be successful, indeed, the Basin Plan will only be successful, if developed with a community engagement strategy that is focussed on transparency of process and contains clear and meaningful opportunities for local communities to contribute to and take ownership of the final Plan.

Aboriginal involvement

- 4.16 Many Basin communities report high Aboriginal populations and a corresponding high level of Aboriginal disadvantage. The Committee heard that Indigenous peoples thought that the proposals put forward in the Guide would affect them disproportionately compared to other parts of the community.
- 4.17 Like many in the Basin, Aboriginal people feel left out of the process for developing the Guide and a lack of recognition of their cultural association with the Basin.

Recognition of cultural values

- 4.18 The recognition of the importance of cultural water for social, spiritual and customary obligations for Aboriginal peoples is reflected in the Ramsar Convention and through provisions in the Water Act and the National Water Initiative.
- 4.19 The Act, while requiring consideration of cultural values, does not specifically provide for cultural water in the Basin Plan. As such, the Guide did not include cultural values in the criteria for identifying 'icon' sites of the Basin and did not provide for cultural flows. Regardless of the overlap between environmental and cultural values relating to water, they are not the same. Specific flows are necessary for the cultural obligations of Aboriginal people:

Cultural flows are very different from environmental flows. Let me go to one of your environmental flows for the purpose of breeding down at Narran Lakes. I am a traditional owner for Narran Lakes. Unfortunately, they send water down there when the birds were gone. So we get a drying up lake, and when the birds return to breed, there is no water in the lake. That has happened too many times in the system. When we talk about cultural flows and Aboriginal people getting control of those cultural flows or at least having some say and input into regulating cultural flows for our purposes, that is part and parcel of what we are talking about in terms of getting those things included.

Mr Hooper alluded to the fact earlier that our cultural sites are not necessarily within the river system itself. They are part and parcel of the overland system. Most of us down this river system have a four totemic system as opposed to people in the Northern Territory and Western Australia and Central Australia. Within that four totem system, our people belong to certain environmental areas. My grandfather belonged to the Ghooriburra, which is the native orchid that grows up in the Coolibah trees on the flat country. My grandmother belongs to Red Belly Black Snake country, which is the top of the ridges, and our main tree is the kurrajong tree. On the other side, we have the Murrawarry people who belong to lignum country, the swamp countries, that go along the riparian areas and the floodplains throughout the system. Then we have the Billabimble mob, and that is the bimble box, and they belong to a totally different ecosystem altogether, throughout and across the land.

In order for us to survive and maintain our cultural identity, we need those systems to thrive and survive. To cut off water flows across those overland areas throughout those districts will destroy all the native flora and fauna within that system. The native flora and fauna within that system is part of our totemic system.⁹

- 4.20 Mr Fred Hooper, Chairperson of the Northern Basin Aboriginal Nations, also expressed the value of the rivers to his people and a desire for control of water to support these values:

The red river gum in my culture with my people is one of the most special plants that we have. The reason for that is that all of our old people – and there is a section on Weilmoringle Station that is about three kilometres off the river that only floods when we have major floods – have a stand of red river gums. Around what we call Gooramons swamp, there are ancient camp sites. That is where our old people used to go to talk through the red river gums to our ancestors. For us, spiritually, that is the most significant plant in the Murray-Darling Basin. That connects us to our ancestors. If people understand Aboriginal culture, especially Murrawarby culture, for us that is very significant. If we have a problem, we go and sit under that red river gum and we talk to our ancestors. We talk to those people that have gone before us, and that is our spiritual connection. That is not considered in any of this. I am sorry to say this, but it is not considered by the environmentalists, it is not considered by the irrigators or government.

...

So ... give us that opportunity. Let us do it. Do not say that, yes, within the water sharing plans we will give you some responsibility to stay and beg. Please give us some water so we can look after Gooramons swamp. That Mundagubba can come down from his home, down to the river, and keep it healthy, because that is the very thing that connects us from Warwick to the Coorong. Give it back to us.¹⁰

9 Mr Michael Eckford, Executive Director, Northern Basin Aboriginal Nations, *Transcript of Evidence*, St George, 15 March 2011, p. 37.

10 Mr Frederick Hooper, Chairperson, Northern Basin Aboriginal Nations, *Transcript of Evidence*, 15 March 2011, St George, p. 40-41.

- 4.21 At the other end of the Basin, the Ngarrindjeri people expressed a similar cultural connection to the waters and land at the Murray mouth:

The Meeting of the Waters is a fundamental aspect of the Ngarrindjeri world where all things are connected, whether they are living, from the past and/or for future generations. The Meeting of the Waters makes manifest core concepts of Ngarrindjeri culture that bind land, body, spirit, and story in an integrated, interfunctional world. The principles that flow from this cultural system are based upon respect for story, country, the old people, elders and family. The pursuit of these principles is contingent on maintaining a relationship with country. ... According to these principles and contingent beliefs, the "environment" cannot be compartmentalised: the land is Ngarrindjeri and the Ngarrindjeri are the land.¹¹

- 4.22 Like many landholders, the Northern Basin Aboriginal Nations recognise that farm storages can provide some environmental benefits, specifically for bird breeding and have indicated that they are considering the challenge of whether to incorporate this into cultural practice where the river health no longer performs this role.¹²
- 4.23 The specific cultural knowledge held by Aboriginal peoples is recognised by many who spoke to the Committee as a resource for environmental managers. Many also noted that access to cultural water can provide a pathway back to country in Basin communities that have large Aboriginal populations with high levels of disadvantage.¹³
- 4.24 There is obvious benefit and need for greater involvement of the Basin's Aboriginal people in water planning processes, especially in the development and implementation of the Environmental Watering Plan. In addition to improving the level of involvement in water planning, consideration should be given to finding novel and innovative ways to provide for cultural water managed by Aboriginal people, such as the creation of cultural water holdings or periodic access to water held by the CEWH.

11 Ngarrindjeri Regional Authority Inc, *Submission 385*, p. 1.

12 Mr Frederick Hooper, Chairperson, Northern Basin Aboriginal Nations, *Transcript of Evidence*, 15 March 2011, St George, p. 38.

13 For examples, see Judith Melville, *Submission 177*, Murray Darling Association, *Submission 402*, Prof. Dianne Bell, River Lakes and Coorong Action Group, *Transcript of Evidence*, Murray Bridge, 18 January 2011, p. 2.

Appropriate engagement

- 4.25 Fifteen per cent of Australia's Aboriginal population lives in the Basin.¹⁴ Some councils estimate up to 70 per cent of the population being Aboriginal and rates of Aboriginal unemployment being from between 30 to 40 per cent and up to 90 per cent in smaller communities. Councils reported being cognisant of the need for any workforce planning to specifically address Aboriginal employment and many have planning in place to address this need.¹⁵
- 4.26 To date, Aboriginal people have been underrepresented in the MDBA planning process and a number of submissions raised this as a serious concern:
- It can be argued that the mechanisms and approaches used to date for consultation and engagement of community members have not been appropriate for Indigenous Australians. Given the cultural significance of water to Aboriginal communities substantial effort is required to develop effective techniques for dialogue and discussion of water planning and to identify cultural uses at the local level.¹⁶
- 4.27 While Aboriginal peoples feel excluded from the Basin debate to date, they expressed a willingness to engage constructively in the process. Ngarrindjeri elder, Tom Trevorror, best summarised the entire Basin debate when he said to the Committee:
- What is required to save our river, our lakes and our Coorong is water flows. The water must flow down...we got to find the balance. We're all in this country... we're all in the same boat... so, let's work together to find that balance. We're worried, but we're putting our faith in that everybody can pull together and find a way through this, find a solution.¹⁷
- 4.28 Given the proportionally high Aboriginal population in the Basin, and corresponding levels of disadvantage, any structural adjustment packages needed because of job losses, for example (discussed below) must take into account the specific needs of Aboriginal peoples.

14 MDBA, *Guide: Volume 1*, October 2010, p. 98.

15 For example, see Shire of Brewarrina, *Submission 222*, p. 1; Mr Robert Lacey, Executive Officer, Northern Basin Aboriginal Nations, *Transcript of Evidence*, 15 March 2011, St George, p. 36; Councillor Walter Mitchell, Bourke Shire Council, *Transcript of Evidence*, 15 February 2001, Bourke, p. 3.

16 Inland Rivers Network, *Submission 409*, p. 22.

17 Mr Tom Trevorror, Ngarrindjeri elder, Camp Coorong, Site inspection, 18 January 2011.

State and territory responsibilities

- 4.29 While the MDBA and Commonwealth government agencies have been responsible for a number of the failings regarding the Guide, the states must also shoulder some of the responsibility for the community reaction to it – much of the community anxiety stems from a lack of understanding of implementation, and this is the responsibility of states through water sharing plans. The Basin Plan will only be successful if it is a true partnership between the states and the ACT and the Commonwealth.
- 4.30 The consequences of the failure by the MDBA and state/territory governments to work together in communicating how the Basin Plan will work are illustrated by the case of the Peel Valley, within the Namoi catchment. Namoi Councils suggested that a return of only three gigalitres from within the Peel Valley to the environment would make the entire district unsustainable:

Under the 3,500GL scenario outlined in the current Guide to the proposed Basin Plan there is a proposed reduction of 25% to current diversion limits for the Namoi. If this was to be applied across the total Namoi, including the Peel, this would reduce the current diversion limit in the recently made water sharing plan for the Peel from 15.1GL to 11.2GL. Given that town water supply for Tamworth makes up a large component of the entitlement in the Peel and are likely to be quarantined from any impacts associated with the implementation of SDLs, the proposed reductions or additional environmental water requirement would need to be met from a much smaller number of licence holders and would result in a much higher percentage impact - i.e. long term average current diversion limit component for irrigation in the Peel would be reduced from 6.1 .GL to 2.3 GL. This is not sustainable and will put irrigators out of business in the Peel.¹⁸

- 4.31 This is why it is essential to have a localised approach to planning. The sub-systems within catchment areas can often have very different characteristics, as Namoi Councils explained:

The irrigation characteristics of the Peel Valley are distinctly different from the Namoi Valley, for example, in the Peel Valley the farms are smaller, landuse is different, irrigation licences are smaller, and the irrigation methodology, behaviour and commodities are different. Furthermore, all hydrologic modelling for the Peel Valley has been undertaken separately from the

18 Namoi Councils, *Submission 517*, p. 12.

Namoi River Valley and the Peel (combined water sources) has a separate Water Sharing Plan to the Namoi water sources. These are all examples of why consideration should be given to designating the Peel River Valley as a separate area for the development and implementation of SDLs.¹⁹

- 4.32 However, this is not an issue for the Basin Plan to address, it is the responsibility of state water sharing plans to define how the finally agreed SDLs will be met. It may be that the NSW Government chooses to exempt the Peel Valley from further entitlement reductions through the water sharing plan process, but this was not something the MDBA could or should define.
- 4.33 Given the apparent attitude of the MDBA towards the states and the ACT in developing the Guide, the Committee can understand their reluctance in being involved in its dissemination. However, in the above case, had the NSW Government been in partnership with the MDBA in communicating the Guide, some of the concerns of the Peel Valley community may have been addressed.
- 4.34 Water planning is a contentious issue in state-territory-Commonwealth relationships and has been since before Federation. It requires a high level of trust and cooperation between governments and this takes a long time to be developed and very little time to be eroded. The Basin Plan process has tested these relationships.
- 4.35 The Committee received submissions from most Basin state and territory governments and met with water ministers from every Basin jurisdiction,²⁰ either privately or on the public record. All indicated a strong level of support for a successful Basin Plan. All acknowledged that they could continue to improve water management and that they were committed to working to this end.
- 4.36 However, the states and the ACT also have some serious and valid concerns about the use of technical data in the Guide arising largely from a lack of consultation and cooperation during the development and a lack of access by these governments and their technical advisors to the assumptions underpinning the modelling utilised by the MDBA. Many of these concerns are addressed throughout this report.

19 Namoi Councils, *Submission 517*, p. 12.

20 While the Committee met with the previous NSW minister, it was not able to meet with the new minister following the change of government in NSW in March 2011.

4.37 The Hon Paul Ciaca MP, Minister for the River Murray (South Australia) effectively summarised the views of all the state and territory ministers that the Committee spoke to when he said:

I think there was anger and frustration as a result of what was, in my view, a lack of a professional approach with respect to what is one of the most significant reforms that this country is ever going to undertake. There was no accompanying narrative, there was no accompanying vision, there had been no proper engagement of the communities, and there had been no proper engagement of the states to any great extent during the development of that guide. We provided, as all states did, information. We are still seeking a response to some of the science that they have used. And so that resulted in the anger. As politicians we know that if people are better informed and better engaged at all levels, there will be a more considered response, notwithstanding the fact that there will still be angst. But it was not done as well as it could have been, and that is an understatement.²¹

4.38 The Committee is encouraged by assurances received by all states and the ACT that there is a clear intention to work constructively to progress the Basin Plan. However, there needs to be a more active effort made by the states and the ACT to work together with the MDBA to address community concerns.

4.39 While the Committee can only make recommendations to be implemented by Commonwealth agencies, its recommendations will require the partnership of all levels of government, including local councils, if they are to be successfully implemented.

4.40 The Committee strongly encourages the MDBA, the Commonwealth and the states and ACT to work in partnership to implement its recommendations and to progress the development and implementation of the Basin Plan in the most constructive manner possible.

21 Hon. Paul Caica, Minister for the River Murray (South Australia), *Transcript of Evidence*, Canberra, 25 February 2011, p. 25.

Providing certainty

4.41 Overall, the Committee heard a high level of support for the need for a Basin Plan and a need to look after the health of the river systems and catchments. Mr Matt Linnegar of the National Farmers Federation expressed a common view: ‘Do we need a basin plan as such?...Yes, we do, but not the one that was delivered in the guide.’²²

4.42 Regional Development Australia (Far West NSW) equally gave voice to a common sentiment:

Within the context of the whole Basin, our community members and leaders have expressed a range of views and opinions, but in the main, all substantially agree upon the following:

- 1. The health of the whole Basin including the Darling River and the Lower Darling Region of the Basin is very poor and requires significant environmental improvements. The Guide is most clear about this. Our community agrees.
- 2. The transition time necessary to restore health throughout the Basin must be reasonable, cognisant of human capabilities to change and adapt, and sufficient to allow business and industry to adapt. The Central Darling Shire and Broken Hill City Councils, for example, are mindful of these sensitivities. However, there is also an equally compelling need to make swift change, particularly in the Lower Darling region, given its poor state. Our region’s proactive environmental “guardian”, the Darling River Action Group (DRAG), would strongly favour this. However, understanding these extremes, our community acknowledges the balancing of interests will be challenging but the overarching need to return water to the Basin is imperative, and how and when it is done is an outcome to be determined with the Basin’s best interests at the heart.²³

4.43 While the Committee heard some evidence seeking the Basin Plan to be delayed or implemented over a long timeframe, it is of the opinion that this will have a negative impact on communities and it is more important finalise the plan quickly but appropriately to provide certainty and allow for business confidence:

In the guide to the draft plan, one suggestion – a so-called transitional strategy – is to extend the period by which we

22 Mr Matt Linnegar, National Farmers Federation, *Transcript of Evidence*, Canberra, 25 March 2011, p. 19.

23 Regional Development Australia (Far West NSW), *Submission 493*, p. 4.

introduce the water reform policy. We heard earlier this morning from an advocate for extending the time period for change. But actually extending the time can often have the reverse effect to what people think it will have. People seem to assume that, by giving us more time for change, there is a greater opportunity for adaptation whereas, in reality, all we are doing is posting a future date on which communities are likely to come to an end. So keeping that timescale in mind, what happens is that the best, the most resilient and the most adaptable pack up and go. They look for a future elsewhere. They do not stay and wait for the final date on which change will happen. They start to assess what the options are elsewhere. What you then see is communities go through this period of decline which, as I said before, is really difficult to reverse once it has begun. Now we have an opportunity – having secured a healthy river system for the benefit of all and for future generations – for the Commonwealth, in partnership with state governments, working together with basin communities, to invest in the future of basin communities, particularly in an economic future.²⁴

- 4.44 As stated earlier in this report, the Guide has no official status in regards to the Basin Plan that will be put to Parliament for consideration. It is a preliminary presentation of information being considered for the proposed Basin Plan. Instead, it has created a climate of fear and uncertainty and resulted in a significant downturn in investor confidence across the Basin.
- 4.45 A new approach to the proposed Basin Plan must be based on strong and effective partnerships between Commonwealth, state, territory and local governments and communities.
- 4.46 In developing the proposed Basin Plan, the MDBA needs to engage with communities, recognising and respecting the wealth of local knowledge and the right to be involved in a process that will have consequences for their lives into the future. It is essential that the scientific justification for proposed policies and their expected socio-economic implications be clearly communicated.
- 4.47 The emphasis in the Guide is on the reduction of SDLs. Many suggested that the SDLs proposed have little credibility. Very little emphasis was placed on how the Basin Plan will be implemented or what is necessary for this to occur. Given the complex and difficult task of managing the

24 Prof. Miller, *Transcript of Evidence*, Murray Bridge, 18 January 2011, p. 28.

Basin's water resources, the implementation of the Basin Plan deserves a substantial investment of time and resources and should draw on local knowledge and expertise.²⁵

- 4.48 The Committee also heard concerns that the MDBA did not give enough consideration to the hydrological and agricultural differences between northern and southern parts of the Basin, nor differences in the use of groundwater and surface water. Whether this is the case or not, it is clear that the MDBA has not communicated the full extent of their knowledge, or lack thereof, to the community appropriately.
- 4.49 The Committee also heard of alternative works and measures for extra environmental flow savings or more efficient delivery. It was also stressed that it is not just volume of extra flow that is a consideration of environmental managers. The timing of flows, duration, temperature, turbidity and frequency are just as critical for ecosystem health.
- 4.50 All of the issues raised in this report need to be addressed in a comprehensive implementation plan for the Basin Plan. This may still need to be some significant structural adjustment for Basin communities and the appropriate level of resources needs to be applied both to implementing the plan and supporting community adjustment.
- 4.51 The Committee has had indications from the MDBA that its thinking has shifted significantly since the release of the Guide. The Hon Craig Knowles told the Committee:

I do not have a high degree of ownership of [the Guide] and I would like to think that, symbolically, my appointment offers the hope of a fresh start and an opportunity to re-engage with communities and incorporate their wisdom and their desires, as best as they possibly can be, into the work that I will do with the authority over the next little while.²⁶

25 Namoi Councils, *Submission 517*, p. 6.

26 Mr Craig Knowles, Chair, MDBA, *Transcript of Evidence*, Canberra, 25 March 2011, p. 73.

4.52 Mr Rob Freeman, the former Chief Executive of the MDBA also told the Committee:

People are looking for a lot of detail in the environmental water plan, yet it must be principles based. We cannot put out a prescriptive environmental water plan. It must provide flexibility to allow, for instance, the Commonwealth Environmental Water Holder to trade water out of a catchment that is well watered because it has rained in that catchment, and acquire water in a dry catchment. So it has to be principles based, but there was almost universal feedback that people are looking for something with more detail than the principles we outlined. That has driven the authority to consider: is there a communication document that sits below a principles based environmental watering plan that would describe how it might have been done, looking back? So, say, 'For this five-year or 10-year period, this would have been an appropriate environmental water plan.' It is an application of the principles. We are working through that issue, but it is a big challenge. People are looking for detail.²⁷

4.53 The Committee is heartened by this change in attitude by the MDBA, but nonetheless is recommending that a new approach be taken to the development and delivery of the Plan.

4.54 It is the Committee's view that without a detailed implementation plan for the Basin Plan, which provides certainty to communities in terms of engagement, timeframes and the roles and responsibilities of all stakeholders, the implementation of the Basin Plan will fail.

4.55 The Committee acknowledges that a lot of the certainty that the community is looking for – that is, how water will be saved and delivered – cannot be included in the Basin Plan for the reasons outlined by Mr Freeman above. Nonetheless, the Plan can be delivered in a way that provides certainty to Basin communities for future planning.

4.56 However, this is also dependent on greater participation and collaboration by the states and ACT, who are responsible for the water sharing plans that will deliver the savings.

4.57 The Committee welcomes the Murray-Darling Basin Ministerial Forum announcement of 1 April 2011 to explore 'a more collaborative and inclusive approach' to Basin planning and recognising the need to develop

27 Mr Rob Freeman, Chief Executive, MDBA, *Transcript of Evidence*, 25 March 2011, Canberra, p. 80.

a plan for the Basin that ‘underpins strong and viable communities’.²⁸ It is essential for the Commonwealth and states and ACT to show leadership in working collaboratively to ensure a positive outcome for the Basin and its communities.

Recommendation 4

The Committee recommends that, in developing the proposed Basin Plan, the Murray-Darling Basin Authority must:

- **develop a community engagement strategy, tailored for each catchment community, focussed on transparency of process with clear and meaningful opportunities for local communities to contribute;**
- **engage all Basin stakeholders, including local, state and territory governments in a genuinely inclusive and respectful manner;**
- **draw upon local knowledge and expertise;**
- **recognise the social and cultural needs of Aboriginal people;**
- **clearly communicate the need for a Basin Plan;**
- **clearly communicate the process, roles and responsibilities for the implementation of the Basin Plan, including:**
 - ⇒ **the role of the Basin Plan;**
 - ⇒ **the role of Commonwealth water recovery programs;**
 - ⇒ **the roles and responsibilities for state and territory governments in water resource planning under the Basin Plan; and**
 - ⇒ **linkages and partnerships between Commonwealth, state and territory governments and relevant agencies within each jurisdiction in the implementation of the Basin Plan.**

28 Murray-Darling Basin Ministerial Forum, *Communiqué*, Sydney, 1 April 2011, p. 1.

A Basin community plan

- 4.58 The Basin Plan is the central outcome of the *Water Act 2007* but it does not stand alone. It requires some management changes and adjustment for the operation of the Basin, and therefore must be complemented by other relevant actions.
- 4.59 One of the most significant criticisms of the Guide and the Act is that too much emphasis is placed on the environment without due consideration of social and economic impacts.
- 4.60 While the Act does allow for a consideration of a 'triple-bottom-line' approach, it does not specifically task any one body with the development of a plan to assure these outcomes. The MDBA is a scientific and engineering organisation and it is not appropriate that it be charged also with this policy role.
- 4.61 However, the MDBA did identify significant impacts on the community and a key recommendation of the Guide should have been the development of a plan to support communities to adjust to a change in water allocation as part of implementing the Plan. As put by the Queensland Government:
- It is recognised that that structural adjustment programs are not within the scope of the MDBA, but it is in the scope of the MDBA to communicate the importance of broader structural adjustment programs to the Commonwealth Government. This is, after all, an issue that impacts on the MDBA's ability to effectively deliver a basin plan that has broad community and government support.²⁹
- 4.62 All levels of government have a responsibility for ensuring the successful implementation of the Basin Plan. Any further reduction in water availability is likely to have a serious impact on the economy and hence national and community wellbeing.

29 Queensland Government, *Submission 624*, p. 4.

4.63 Local councils in particular need to be engaged in the development of an implementation plan. Councils provide the local leadership across the region and are responsible for service delivery that is essential to community wellbeing, as suggested by the NSW Government:

Councils may also be expected to demonstrate leadership in assisting communities to adjust to lower-water circumstances and to attract alternative industries that are not as water dependent.

The potential impacts on councils' service delivery functions coupled with cuts to extractive water may impact on the maintenance of facilities such as grassed sporting fields, local parks, golf courses, and horse racing tracks. Maintaining a strong sporting culture and a variety of social events, particularly in small townships, is important for supporting community wellbeing and building community resilience.³⁰

4.64 There may be a role for Regional Development Australia and other local bodies to be involved in developing community adjustment plans. Any such bodies should have an awareness of the capacity of small, local organisations to contribute to service delivery and have access to funding sources. Evidence that smaller local organisations can be overlooked in the bureaucratic process is concerning and there needs to be a mechanism to ensure equity in access to funding:

FamilyCare recognises there are limitations on the availability of public funding for community support services. We also understand the management challenges in effectively monitoring the service activities of disparate services, often across large geographic areas.

These challenges have produced changes in funding policy that tend to favour larger community organisations, particularly those with a statewide or even national focus. Whilst in no way being critical of these organisations, many of which are valued colleagues in our service delivery activities, there is a tendency to devalue the importance of local and regional understanding and engagement. We should value the importance of local connection and knowledge more, to ensure rural and regional responses are reflective of actual needs.³¹

30 NSW Government, *Submission 585*, p. 17.

31 FamilyCare, *Submission 537*, p. 3.

- 4.65 Some structural adjustment does exist, for example, the Government's Water for the Future program, a \$12.9 billion package to assist with the transition to a future with less water for all users under the Basin Plan. However, this is almost entirely focussed on minimising the impact on entitlement holders. Only \$290 million is directly targeted at community needs through the Strengthening Basin Communities program. In the Committee's view, this is woefully inadequate.
- 4.66 The Committee received evidence that current government intervention (including some government stimulus, Water for the Future (WftF) and water purchases) can significantly improve the effect of diversion reduction on economic outcomes.³² This indicates that with additional appropriate, targeted community assistance, the impact of a reduction in the SDLs may be significantly improved.
- 4.67 The Queensland, NSW and South Australian Governments, as well as local councils across the Basin and many organisations and individuals have called for the delivery of structural adjustment packages that include a consideration of the needs of entire communities, not just the needs of entitlement holders, and include:
- the development of localised economic and social development plans supported by workforce development and training packages to enhance the diverse economy of Basin communities;
 - strategies for enhancing communities (including a particular focus on mental health support services and investment in community social infrastructure);
 - recognition of the specific economic disadvantage and needs of Aboriginal peoples living in the Basin.³³

32 ABARES, *Submission 399*, p. 6

33 NSW Government, *Submission 585*, p. 34.

- 4.68 Without an adequate structural adjustment program that takes the issues raised in this chapter into consideration, the implementation of the Basin Plan is unlikely to succeed.

Recommendation 5

The Committee recommends that the Commonwealth Government develop separate community basin planning that provides:

- **localised and targeted structural adjustment packages;**
- **the development of localised economic development plans supported by workforce development and training packages to support Basin communities;**
- **strategies for enhancing communities (with particular focus on mental health support services and investment in social infrastructure); and**
- **recognition of the specific needs and economic circumstances of Aboriginal communities living in the Basin.**

The development of this plan must be in partnership with states, local government and the community.

Other issues for consideration

Coal seam gas

- 4.69 The Committee heard considerable concern about the impact on groundwater by coal seam gas (CSG) exploration and mining in northern New South Wales and Queensland.
- 4.70 Submitters expressed concerns about the environmental impacts of CSG including:
- **contamination of aquifers through leaching or wastewater;**
 - **changes in aquifer pressure and other damage to or destruction of aquifers;**
 - **contamination of land;**
 - **reduction in surface flows of interconnected systems;**

- the intensive use of Basin water by CSG operations.³⁴

4.71 It was put that the science and the evidence around the impact of CSG is not yet well known enough to gauge the long-term effects on the aquifers:

The issue with the coal seam gas is that we cannot guarantee that they are not going to affect the interconnectivity between the aquifers. The issue is that when you take 350,000 megalitres of water out of an aquifer – and that is the GAB aquifer that we are talking about, the Great Artesian Basin – there has got to be some changes to the pressure.

Santos admitted in their EIS that they would actually depressurise one of the aquifers, the Walloon coal measures, and it will take more than 150 years before that recovers.

...

The water that comes out of that has between 3,000 and 9,000 parts per million of salt, which is not salty in terms of sea water, but it is the types of salts that are very corrosive and very difficult to deal with. The government initially thought they would put them in evaporation ponds. I have seen an evaporation pond where the company tried to make the water evaporate quicker by spraying it up in the air and trees died within 400 metres of that spray, so there are major issues with the salt and how they deal with it.³⁵

4.72 Regulations around mining are largely a state issue. The Queensland Government noted:

We have spent the last 12 to 18 months in Queensland toughening up the legislative controls in regard to the coal seam gas industry in Queensland. Whilst it has been operating safely in Queensland for a long period, we are seeing an expansion of that industry as we go to an export industry of LNG. This has meant that we as a government have passed tougher laws in the parliament in regard to monitoring. It is a requirement that companies have baseline data as part of what they do in order to undertake their works. In regard to the Surat Basin, we have looked at having a cumulative management area where we look at the overall impacts from the coal seam gas industry in that area. We have established a compliance unit out in those regions, so there are people on the

34 Rosemary Nankivell, *Submission 472*; Caroon Coal Action Group, *Submission 386*; Mr Kim Bremmer, AgForce Queensland, *Transcript of Evidence*, Goondiwindi, 16 March 2011, p. 15.

35 Mr Kim Bremmer, AgForce Queensland, *Transcript of Evidence*, Goondiwindi, 16 March 2011, p. 15-16.

ground. In addition to the requirements of the companies to do their own baseline data, and their own continuous monitoring and water monitoring on groundwater impacts, the state government has funded an additional 300 water testings of wells and bores this year to provide people with another layer of confidence regarding water testing undertaken in Queensland.³⁶

- 4.73 The Committee notes that Section 255A of the Act requires independent scientific study to be undertaken on the impact of any new mining licences on floodplains that have underlying groundwater systems. However, this does not affect existing mining license holders in the Basin.
- 4.74 The potential impact of CSG on both extraction volumes and health of groundwater systems is concerning. The mining industry must be placed with the same obligations as other water users in terms of sustainable extractions and care of the environment.
- 4.75 The Guide acknowledges the concerns about mining activity, including CSG extraction and states:
- ...the Basin Plan does not constrain the purpose for which the take will be used as long as the total take complies with the SDL. Any take of water, including for mining, will be required to comply with water resource plans, which will contain detailed arrangements.³⁷
- 4.76 It is therefore the responsibility of the states to ensure that CSG activity is regulated appropriately. However, the Committee notes its concern that this issue has the potential to have long-term environmental impacts in the Basin and to seriously compromise the productive capacity of farmers.
- 4.77 Until such time as the impact on the sustainable yields of related aquifers, unintended aquifer drainage, impact on beneficial recharge, contamination, reduction in water quality and or/availability in the adjacent aquifers are understood, extractive gas and other mining activities in the Basin should not be approved.

36 Hon. Kate Jones, Minister for Environment and Resource Management (Queensland), *Transcript of Evidence*, Brisbane, 17 March 2011.

37 MDBA, *Guide: Volume 1*, October 2010, p. 146.

- 4.78 Any storage or use of extracted or waste water must comply with the relevant groundwater, floodplain and overland flow regulations and if necessary, these regulations be applied with a particular focus on mining activities. This includes requirements for the provision of environmental impact statements and independent monitoring and reporting.

Recommendation 6

The Committee recommends that the Commonwealth Government ensure that the mining industry is placed under the same obligations as other water users in the Murray-Darling Basin by ensuring:

- **that no mining activities are approved that impact on Basin water resources until such time that the impact of such activities is fully understood and able to be mitigated; and**
- **relevant legislation/regulations are applied with a specific focus on mining activities in the Basin as a matter of urgency to ensure that the long-term health and productivity of water resources are protected.**

Water purchase and infrastructure investment

- 5.1 Moving to a future with sustainable diversion limits (SDLs) set by a Basin Plan will require a transition process to avoid significant impacts on the productivity and wellbeing of regional communities. The Commonwealth Government has committed to 'bridge the gap' to cover any reduction in consumptive use of water required under the Basin Plan. To date, the preferred approach taken has been the transfer of water from consumptive use to the environment through non-strategic water buyback and investment in irrigation efficiency programs under the *Water for the Future* program.
- 5.2 As discussed in the previous Chapter, there is general acceptance that a plan is needed – but not what was set out in the Guide. While the deficiencies of the Guide need to be addressed, much more is needed than a plan to manage the Basin water resources as set out in the Water Act. The Basin Plan is just one component of a set of wider regional development strategies that need to incorporate:
- more and smarter investment in infrastructure improvements, drawing on local knowledge and coordinated with any strategic buyback;
 - a strategic buyback program only. Non-strategic buyback has left stranded assets and less efficient infrastructure; and
 - more and smarter investment in environmental works and measures.
- 5.3 Finding a positive way forward, to achieve stronger communities supported by healthy rivers, will take more than a Basin Plan that addresses the many failings of the Guide. It will require a clear vision that

includes a Basin Plan that has the support and ownership of the communities that will be most affected.

5.4 Professor Miller put to the Committee that:

The challenge facing us is to identify and bring together the right group of people to deliver such a strategy of investment in regional futures. We need to restore confidence that we can fix this problem adopting a planned and comprehensive approach. This can only be done if we change the discourse from one of taking water from Basin communities to one of investing in the long term sustainable futures of those communities most impacted by water reform.¹

5.5 This Chapter focuses on ways to support Basin communities and the irrigation sector as they move towards a more secure future with a Basin Plan. It looks at community concerns about the non-strategic buyback and irrigation efficiency programs showing how they may be made more effective and involve local communities.

Water for the Future

5.6 The Australian Government is currently delivering \$12.9 billion of programs to progress water reforms in the Basin under the banner of *Water for the Future*. This is a suite of programs designed to balance the water needs of communities, farmers and the environment. This represents a significant investment of taxpayers' money aimed at 'providing irrigators and communities with more confidence to plan for a future with less water, to put water use on a sustainable footing, to enhance irrigation productivity, and to improve river and wetland health'.²

5.7 Water for the Future contains a suite of urban and rural policies and programs, including funding for water purchasing, irrigation modernisation, desalination, recycling, and stormwater capture. While it is a national initiative, the focus of Water for the Future is on the Murray-

1 Prof. Chris Miller, School of Social and Policy Studies, Faculty of Social and Behavioural Sciences, Flinders University, *Transcript of Evidence*, Murray Bridge, 18 January 2011, p. 9.

2 Department of Sustainability, Environment, Water, Population and Communities (SEWPAC), *Water for the Future - Fact sheet*, <environment.gov.au/water/publications/action/water-for-the-future.html>, accessed 16 May 2011.

Darling Basin, the most significant and productively used water resource in Australia.

5.8 SEWPAC outlined the key actions under *Water for the Future* as:

- supporting the development and implementation of a new Murray-Darling Basin Plan that responds to the needs of the system as a whole, as set out in the *Water Act 2007* (the Act);
- considerable investment in more efficient irrigation infrastructure to enable irrigators to produce more while using less water. The water savings made by these projects are shared between irrigators and the environment;
- a commitment to 'bridge the gap', which means that the Government will purchase (or recover through infrastructure investments as mentioned above) all of the water access entitlements necessary to cover the gap between current diversion limits and the new Sustainable Diversion Limits in the Basin Plan;
- steps to improve the operation of the water market, so that individuals may trade their water entitlements in a timely way, based on sound information, to help manage their business risks; and
- improvements in the quality and extent of information on water resource availability and use.³

5.9 The SEWPAC submission also outlined the key elements of the Commonwealth Government's *Water for the Future* initiative that relate to the Basin as:

- *Sustainable Rural Water Use and Infrastructure Program* - \$5.8 billion to increase water use efficiency in rural Australia largely through projects that deliver lasting returns for the environment, increase productivity and secure a long term future for irrigation communities. This includes \$200 million for the *Strengthening Basin Communities* program, which provides grants for local governments in the Murray-Darling Basin to assist in community-wide planning for a future with less water and supports projects that improve water security by reducing demand on potable water supplies;
- *Restoring the Balance in the Murray Darling Basin* - an initial \$3.1 billion to acquire water entitlements to allocate to the Basin's rivers, wetlands and floodplains. Note that this funding was supplemented recently in the 2010 Mid Year Economic and Fiscal Outlook with the announcement by the Government to allocate a further \$310 million each year from 2014-15, to ensure that it will be able to meet its commitment to 'bridge the gap';

3 SEWPAC, *Submission 532*, p. 3.

- *Driving Reform in the Basin* - funding activities by the MDBA, Australian Competition and Consumer Commission, the National Water Commission and the Department of Sustainability, Environment, Water, Population and Communities (the Department); and
- *National Water Security Plan for Cities and Towns* - funding practical projects to save water in cities and towns nationally with populations less than 50,000.⁴

Sustainable Rural Water Use and Infrastructure Program

5.10 The \$5.8 billion dollar investment in improving irrigation efficiency and productivity is primarily delivered via two Commonwealth run programs and a collection of state run programs. Around \$4.9 billion of this funding is already committed for the Basin.⁵

5.11 The Commonwealth run programs are:

- *Private Irrigation Infrastructure Operators Program* in New South Wales – \$650 million funding for private irrigation infrastructure operators in NSW to modernise and upgrade irrigation infrastructure; and
- *Private Irrigation Infrastructure Program* for South Australia – \$110 million funding for irrigation infrastructure efficiency improvements for Murray-Darling Basin operators in South Australia.

5.12 The Commonwealth funded State led State Priority Projects include:

- South Australia Integrated Pipelines – \$120 million for construction of a series of potable and irrigation pipelines in areas adjacent to the South Australian Lower Lakes;
- Northern Victoria Irrigation Renewal Project Stage 2 – \$953 million contribution from the Commonwealth to improve the efficiency of irrigation infrastructure in the Goulburn-Murray Irrigation District;
- Queensland Healthy HeadWaters Water Use Efficiency Project – up to \$115 million funding for irrigation farmers in the Queensland Murray-Darling Basin to invest in efficient irrigation systems and technologies;
- Queensland Coal Seam Gas Water Feasibility Study – \$5 million for a study is to examine the use of coal seam gas water in the Queensland Murray-Darling Basin; and

4 SEWPAC, *Submission 532*, p. 3.

5 SEWPAC, *Submission 532*, p. 8.

- NSW Priority projects (pilots) – two pilots are being rolled out under the NSW State Priority Projects: NSW Irrigated Farm Modernisation Border Rivers and Gwydir Pilot; and NSW Metering Scheme Pilot.

‘Restoring the balance’

- 5.13 The Commonwealth Government is in the process of purchasing water entitlements for the environment. The non-strategic purchase of water entitlements have been from irrigators who choose to sell their water to the Government - referred to as ‘willing sellers’. The Committee continuously heard that some sellers were not ‘willing’ but ‘stressed’ with payments going to relieve debt not to expand production. Non-strategic buyback also rendered some irrigation districts less efficient.
- 5.14 The purchased entitlements are transferred to the CEWH for use in improving the health of the Basin's rivers, wetlands and floodplains. The non-strategic purchase of entitlements from irrigators, along with investments in irrigation efficiency has bridged some of the gap between current diversions and the proposed SDLs.
- 5.15 The non-strategic and some strategic purchases of entitlements has been through a series of tender processes and individual large purchases such as the Toorale holdings in cooperation with the NSW Government.
- 5.16 As of 31 March 2011, the Government had purchased 966.6 GL of entitlements in the Basin which will provide a long run average water yield of 678.5 GL of water that can be used for the environment.⁶

Improving the buyback

- 5.17 While the main body of concerns raised with the Committee related to the Guide and the proposed SDLs, significant disquiet was also expressed about the Commonwealth non-strategic water purchase (buyback) program. In particular, its apparent ad hoc nature and its impact on the community.

6 SEWPAC, *Progress of water recovery under the Restoring the Balance in the Murray-Darling Basin program*, <environment.gov.au/water/publications/action/water-for-the-future.html>, accessed 16 May 2011.

5.18 As put by Mr Howard Clapham of Mainland Finance:

...there must be a review and strategic analysis of the current water buy back scheme. It is well intentioned has been in place under both sides of politics but is poorly targeted, not fully transparent and would fail every commercial accountability standard applicable.⁷

5.19 Objections were raised about the use of the term 'willing sellers' when, for many, selling their water entitlement to the Government is an option of last resort following many years of the worst drought on record and mounting debts. As Mr Rel Heckendorf of Murrumbidgee Private Irrigators put it:

The term 'willing' is probably not appropriate. For people to sell their water at the price the government is offering they would be desperate sellers, not willing sellers.⁸

5.20 It is apparent from the evidence put before the Committee that a strategic approach is required to the recovery of water. An approach that:

- helps irrigation districts adapt to future SDLs without losing productivity;
- is able to accommodate innovative and novel offers;
- is better linked to infrastructure investments;
- is better linked to environmental water requirements; and
- is more transparent and accountable.

5.21 The Committee understands that the use of the market to transfer water to the environment is a valuable tool in the transition process. The Committee heard from several who believed that buyback will be needed if sufficient water is to bridge the gap between current diversions and the SDLs:

Despite the farm lobby generally not supporting water buyback, [the PM's election commitment to bridge the gap] was welcomed by some as it ensured irrigator's would not face cuts to their entitlements or allocations and their 'right' to use their legal entitlement of water had been protected. The water reductions proposed by the Murray Darling Basin Authority would therefore

7 Mainland Finance, *Submission 523*, p. 3.

8 Mr Rel Heckendorf, Murrumbidgee Private Irrigators Inc., *Transcript of Evidence*, Griffith, 25 January 2011, p. 8.

only be met by willing sellers in an effort to 'bridge the gap' of the future water requirements of the environment.⁹

- 5.22 The buyback creates a reserve of environmental water that has the same legal status, reliability and security as entitlements held for other purposes such as irrigation. While investments in infrastructure are a preferable method of transferring water to the environment, it is unlikely to be enough in all catchments in the Basin, strategic water buyback may also be needed.¹⁰
- 5.23 Some irrigators and community members were very concerned about what strategy would be adopted for 'finding' water if too few responded to the Government's buyback tenders, and too little was invested in water saving infrastructure. This question was asked at MDBA public meetings about the Guide, but never satisfactorily answered. South Australian irrigators told the Committee that they would be happy to see every entitlement holder have a small percentage of their water 'taken' if it was an across the Basin agreement. Such options do not seem to have been tested on Basin communities for their potential.
- 5.24 An active water market was generally supported and acknowledged to have helped many irrigators maintain the liquidity of their businesses during the recent drought:
- The initial \$3.1 billion NWP money earmarked for buybacks would assist irrigators and their communities currently suffering the effects of a massive reduction over the last 12 months in the value of permanent water entitlement. The equity of irrigators would increase if the buyback program proceeded as intended causing prices to recover. Additionally, the credit squeeze currently impacting on irrigators and caused by the drop in the value of entitlement would be mitigated to the benefit of irrigators and the communities reliant upon them.¹¹
- 5.25 Nonetheless, there was considerable criticism of the Commonwealth buyback throughout the inquiry. The most significant and common criticism was that, while it will limit or even mitigate the impact on entitlement holders, these benefits do not flow on to the communities that support and rely upon irrigation farming. Many submissions raised concerns about the impact that the loss of productivity in irrigation farming will have on their future:

9 United Dairy Farmers of Victoria District Council, *Submission 530*, p. 3.

10 Victorian Farmers Federation: Sunraysia Branch, *Submission 521*, p. 2.

11 Victorian Farmers Federation: Sunraysia Branch, *Submission 521*, p. 2.

...irrigated farms support a much wider regional economy. That means work for the farm supplier and the local shops as well as the food processing factory. It also means a vibrant community with kids at the local school, an active footy club and rate revenue for the local council. Buy-back may put cash in the hands of irrigators. But most of the capital goes straight to the banks to reduce debt. It is not spent in the community reinvesting in alternative enterprises. Buyback does nothing for the local community and regional economy who face a slump in demand for services when irrigated properties are taken out of production. These wider impacts from buy-back are borne by local businesses, the community and by the tax payer in heightened payments for social services and structural adjustment. Once those wider costs are included in the calculation then the real costs of using buyback are no cheaper than the costs of irrigation modernisation.¹²

5.26 Other criticisms of the Commonwealth buyback include:

- the lack of strategic approach, causing a 'Swiss cheese' effect;
- that sellers are not necessarily 'willing sellers' but under pressure due to the drought and financial situations;
- concerns about the potential for there being insufficient sellers to meet the commitment to bridge the gap; and
- the tender process being too slow and not transparent.

The 'Swiss cheese' effect

5.27 The lack of a strategic approach in the Commonwealth water purchase program has been blamed for a 'Swiss cheese' effect in irrigation districts where it is purchasing entitlements. The term 'Swiss cheese' refers to what happens when some entitlement holders along an irrigation channel sell their entitlements and stop irrigating. The effect of this is to create 'holes' in irrigation areas, reducing the efficiency of delivering water down that channel, stranding assets and increasing the maintenance costs and delivery fees for the entitlement holders who remain.

12 United Dairy Farmers of Victoria District Council, *Submission 530*, pp. 17-18.

- 5.28 The Murray Shire Council provided an example of the ‘Swiss cheese’ effect in their area:

within Murray Shire, there is a scheme in Mathoura which formerly had 14 members and now has seven. This reduction in members is already having severe economic impacts on the remaining members of the scheme.

The whole issue is affecting, and will continue to affect, business confidence, which will in turn affect property values.¹³

- 5.29 Colleambally Irrigation referred to the Swiss cheese effect as hindering planning efforts within irrigation districts:

the Swiss cheese does not allow us as a board to do is plan. We do not know where the next dry farm is going to come from, so we cannot plan ahead to put in the infrastructure. We might put in a bridge that can handle 500 megalitres a day in one small channel and then have three farms below that sell out – and so we did not need the 500 megalitres. We cannot plan for that.¹⁴

- 5.30 Mr Peter Toome, Chair of Irrigation Australia, also noted some of the social consequences:

A fourth generation farmer who is told that they are on the end of a spur channel that is being abandoned is obviously going to rail against the decision to close that spur channel, because you are saying, ‘Here you are. All of your friends, your family, your whole lifestyle revolves around that little community district that you’re in. You’re being told to pick up and move to somewhere else completely out of your comfort zone.’ So I think it is important that the social costs and the social issues get included into those decisions.¹⁵

- 5.31 Some irrigation providers, for example in NSW, are able to charge the person selling their water termination fees equivalent to 10 years of the annual fees that would otherwise be payable. The intent of this is, to some extent, offset the additional maintenance and delivery costs providing

13 Murray Shire Council, *Submission 141*, p. 2.

14 Mr Henry Gardiner, Chair, Colleambally Irrigation Co-operative Limited, *Transcript of Evidence*, Griffith, 25 January 2011, p. 44.

15 Mr Peter Patrick Toome, Chair, Irrigation Australia Ltd, *Transcript of Evidence*, Canberra, 25 March 2011, p. 6.

termination fees are passed on to the affected irrigators by not increasing their fees.¹⁶

- 5.32 Mr John Culleton, Chief Executive of Colleambally Irrigation Co-operative, suggested that even with the high termination fees, the loss of water coupled with the SDLs proposed in the Guide will impact on irrigators in the future:

If a farmer sells his water, he pays a termination fee and, for a period of time, that termination fee is used to offset the loss of water from that area so that we do not have to hike our rates for the remaining farmers. Eventually that runs out. When it runs out – and we have calculated it with the SDL settings in front of us – we will have to double our water charges. That puts those who had decided to tough it out and stay out of business.¹⁷

- 5.33 The impact of the ‘Swiss cheese’ effect was raised as a serious concern for the Committee from very early in this inquiry. On 9 February 2011, the Committee wrote to the Minister for Regional Australia, Regional Development and Local Government and the Minister for Sustainability, Environment, Water, Population and Communities seeking that they investigate this matter with urgency, and in particular focus on a more strategic program of water buybacks.¹⁸

- 5.34 The Ministers responded on 15 March 2011 stating:

Future purchasing rounds will be smaller and more consistent, minimising the disruption to communities and managing distortion in water markets. Minister Burke is considering further options for prioritising strategic recovery of water and minimising ‘Swiss cheese’ effects.¹⁹

- 5.35 In its evidence to the Committee in Bendigo, the Victorian Farmers Federation was critical of a tender system being used to purchase water, stating that:

If you have a true, transparent national market, you do not need a tender system. What we find is happening now is that people are

16 Ms Mary Harwood, SEWPAC, *Transcript of Evidence*, Canberra, 9 February 2011, p. 6. Water Market Rules and Water Charge (Termination Fees) Rules (2009).

17 Mr John Culleton, Chief Executive, Colleambally Irrigation Co-operative Ltd, *Transcript of Evidence*, Griffith, 25 January 2011, p. 43.

18 See Appendix F.

19 Minister for Regional Australia, Regional Development and Local Government and the Minister for Sustainability, Environment, Water, Population and Communities, Correspondence received 15 March 2011, see Appendix F.

going through the tender system but they are not seeing the results of the previous tender before the next one starts, so no-one has any idea

...

The Commonwealth is the main player in the market and whenever you get a player in the market that accounts for probably 90 per cent or 95 per cent of the market, they can force the market price.²⁰

5.36 This work is of paramount importance and the Committee reiterates the need for Government agencies to be aware of the need to minimise the negative impacts of implementing water buyback.

Case study 5.1 Water for Rivers

Water for Rivers (WFR) was formed in 2003 by an intergovernmental agreement between New South Wales, Victoria and the Commonwealth to save water for the Snowy River and the Murray River. It has the objective to recover water principally through water savings projects that leave behind a regional legacy of water use efficiency and increased agricultural productivity.

Established as a public company, WFR is in a unique situation whereby it can engage in projects and deal with customers and irrigation corporations without the constraints that government authorities and departments would otherwise have. Around 70 – 80 percent of water recovered by WFR has resulted from regional projects and investments.²¹

Mr Bull, Chairman of Water for Rivers, told the Committee, “if you can’t measure it, you can’t manage it” and that he views much of the Murray-Darling Basin system as poorly managed and having antiquated structures and measuring devices which in turn lead to poor handling and watering of environmental sites.²²

To-date, WFR has recovered water entitlements through a range of projects including:

- investing in irrigation delivery system efficiency using channel automation, channel lining as well as stock and domestic piping to recover system losses. In some cases this also included returning river and stream flows to their more natural state;
- modifying storage systems to return them to their ephemeral natural wetland state to reduce evaporative losses;
- on farm water efficiency projects, including reconfiguration and, in some cases, resale of them as more efficient and sustainable irrigation properties;
- combining resources from other water efficiency programs to achieve more cost effective and triple bottom line outcomes in irrigation districts; and
- investigating the opportunity to achieve multiple benefits with a legacy based approach to recovery by improving the operational efficiency in river management.²³

20 Mr Anderson, Victorian Farmers Federation, *Transcript of Evidence*, Bendigo, 21 January 2011, p. 30, 36. See also Victorian Farmers Federation, *Submission 395*.

21 Water for Rivers, *Submission 408*, p. 9.

22 Mr Richard Bull, *Transcript of Evidence*, Canberra, 23 February 2011, p. 17.

23 Water for Rivers, *Submission 408*, p. 13.

Making the buyback program more strategic

5.37 Throughout this inquiry, the Government water purchase (buyback) program, operated by the Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) has been subject to a high degree of criticism (particularly in irrigation districts for its perceived:

- lack of a strategic approach;
- lack of understanding about the financial and personal pressures leading irrigators to sell water;
- lack of corresponding investment in the negatively impacted community; and
- lack of flexibility, innovation and capacity to respond to proactive sellers.

5.38 SEWPAC noted that the buyback program is operating in the market with the same obligations and expectations that apply to any other buyer in the market:

The normal practice is that a water trade happens like any other water trade in the market. If a person is selling all their water entitlements and wishes to terminate delivery, they will have termination fees owing to their irrigation provider if they are in an irrigation system, whether it is in Victoria or elsewhere, and they are responsible for those charges. We operate like any other purchaser in that we pay the market price for the water and the person selling it makes their decisions about what they do with their delivery right.²⁴

5.39 A firm adherence to this approach limits the potential for innovative solutions that may provide benefits more broadly than just to the seller. The Commonwealth, using public resources, and as the largest player in the market, needs to take a more responsible, community-focused approach than what is expected of other buyers in the market.

5.40 The Committee heard a clear and consistent message from Basin communities that the buyback program needs to be strategic for two reasons: firstly, to limit the impact of purchases on irrigation districts and the irrigators that remain; and secondly to ensure that water is bought in the best location to meet environmental objectives:

24 Ms Mary Harwood, SEWPAC, *Transcript of Evidence*, Canberra, 9 February 2011, p. 4.

[Colleambally Irrigation Cooperative Ltd] believes that there is a strong case for a more targeted approach to buyback – one which sees buyback and the modernisation of irrigation systems as parallel endeavours. Such an approach would allow the irrigation companies to work with their customers to bring about the retirement of the least viable parts of their irrigation delivery system while improving the more viable. With the right incentives, some of the farmers in the part of the system identified for shutdown might be encouraged to relocate onto a dry farm within more viable parts of the system, or to relocate to another irrigation system. CICL accepts this type of ‘social engineering’ will not be easy but it represents a far more rational approach than the current one and warrants serious consideration by Government.²⁵

- 5.41 The Committee understands that examples of successful voluntary relocation of irrigators within a district already exist and have resulted in improved efficiencies, for example through the implementation of the Torrumbarry Reconfiguration and Asset Modernisation Strategy (TRAMS) in Victoria.²⁶
- 5.42 Wakool Shire Council identified the benefits of shutting down part of an irrigation system being:
- more efficient process for the Government to acquire water (large volumes in one deal);
 - reduced likelihood of stranded assets – water savings through reduced delivery system losses; and
 - less irrigation infrastructure to be maintained or improved.²⁷
- 5.43 To date, this proposal has not been adopted by SEWPAC.
- 5.44 An example given by Jeremy Morton in Swan Hill, outlined in case study 5.2, suggests that the current strategic buyback arrangements make it difficult for the Department to respond quickly enough to accommodate proposals that are received outside the tender process.²⁸

25 Colleambally Irrigation Cooperative Ltd, *Submission 365*, p. 9.

26 Goulburn Murray Water, *Exhibit 126*, RMCG Report NVIRP TRAMS Update Final Report, 14 August 2009.

27 Wakool Shire Council, *Submission 188*, Attachment: Socio-Economic Impacts: Closure of Wakool Irrigation District (or parts thereof), RMCG 2009, p. 22.

28 Mr Jeremy Morton, *Transcript of Evidence*, Swan Hill, 30 March 2011, p. 58.

- 5.45 Murray Irrigation Ltd (MIL) also provided information on the Moulamein proposal, advising that they had offered to meet the termination fees for the irrigators involved. MIL provided the following illustration of how delays in the negotiations can undermine the outcome:

The proposal was negotiated with farmers and developed from December 2009 when water prices were \$1,306 per entitlement. By March 2010 DEWHA was offering around \$800 per entitlement and would not pay over “market value” reducing the attractiveness of the project to farmers.²⁹

Case study 5.2 Return of water offers rejected by SEWPAC

Moulamein

Mr Morton is from a farming family west of Moulamein in southern New South Wales who in Easter 2008, along with 12 other farming families (25 individual families in total) of the region, put together a proposal to sell their water to the Commonwealth. The proposal at the time would have returned 43,000 ML to the environment and seen 90 kilometres of channel servicing 67,000 hectares decommissioned. Water servicing the farms, which are at the most westerly point of the Murray Irrigation Limited (MIL) channel system, travels 250km from Lake Mulwala and an estimated 25per cent is lost in transit. That means about 57,000 ML is released from Lake Mulwala to deliver us 43,000ML. The 14,000 ML saved would have been available to the Commonwealth or MIL to share amongst its remaining irrigators.³⁰

Wimmera

Mr Frankel, Chairman of the Wimmera Irrigators Association, told the Committee of a proposal to sell 28,000ML of irrigator water entitlement to the Commonwealth Government. The proposal would close the Wimmera Irrigation System in preference to modernisation or rationalisation of water systems in the area.³¹ At the time of providing the evidence, the Association had a 100 percent participation rate in the sale of the system.³²

Wakool

Mr May of the Wakool Landholders Association, told the Committee if a situation where 30 irrigators were proposing to shut down their channel system and offering 40,000 ML or 40,000 units of water entitlement.³³

- 5.46 The Wakool Shire Council made a case for a strategic buyback that includes assistance for farmers exiting irrigation where it leads to the decommissioning of parts of an irrigation district:

This [\$5.8 billion provided by the Sustainable Rural Water Use and Infrastructure component of Water for the Future] is investment

29 Murray Irrigation Ltd, *Supplementary Submission 440.1*, p. 11.

30 Mr Morton, *Submission 638*; Mr Morton, *Transcript of Evidence*, Swan Hill, 30 March 2011, pp. 56-57; Murray Irrigation, *Submission 440*, p. 13.

31 Wimmera Irrigators Association, *Submission 175*, pp. 1-2.

32 Mr Frankel, Wimmera Irrigators Association, *Transcript of Evidence*, Swan Hill, p. 54.

33 Mr May, Wakool Landholders Association, *Transcript of Evidence*, Swan Hill, 30 March 2011, pp. 24-25.

that the Australian Government will not need to make in areas that are decommissioned. It is argued therefore that the share of this investment that would have been spent as part of the \$5.8 billion should be provided back to the region to enable the community to “adjust to a future with NO water”.³⁴

Recommendation 7

The Committee recommends that the Commonwealth Government immediately cease all non-strategic water purchase in the Murray-Darling Basin and take a strategic approach to water purchases that prioritises the lowest possible impact in communities.

- 5.47 The Department operates the buyback program under the Commonwealth Procurement Guidelines in accordance with the Commonwealth *Financial Management and Accountability Act 1997*. These Guidelines place certain obligations on public servants when spending public money. The main objectives of the Guidelines are to achieve: value for money; encourage competition; efficient, effective and ethical use of resources; and accountability and transparency.³⁵
- 5.48 While the Procurement Guidelines are essential to underpin the way public money is spent, it leads the Committee to question whether a Commonwealth Department is the most effective agency to deliver a program of this type. Given the dissatisfaction voiced by the community about the program’s lack of flexibility or responsiveness, it is apparent to the Committee that the agency is required to become efficient or an alternative arrangement is made.
- 5.49 The Committee recommends a new approach to water purchase later in this Chapter. However, until this recommendation can be implemented, it is essential that any further water purchases by SEWPAC be strategic only and they must identify the impact that purchases will have on regional communities and infrastructure. SEWPAC must also improve their efficiency and become more responsive to offers from proactive sellers.
- 5.50 The Committee questions that the ‘value for money’ requirement under the Commonwealth Procurement Guidelines has not allowed SEWPAC to

34 Wakool Shire Council, *Submission 188*, p. 23.

35 Commonwealth Procurement Guidelines 2008, pp. 15-29.

pay an adjustment component as well as the more than market value for water purchases. SEWPAC can and should be identifying the industry, down Basin and community impacts of water purchases. It should assist sellers and communities to coordinate access to the range of other government assistance programs that can offset these impacts.

Recommendation 8

The Committee recommends that the Department of Sustainability, Environment, Water, Population and Communities, in all future water purchases:

- **be more responsive to proactive sellers; and**
- **prior to any water purchase process, identify the consequences for the community.**

Using the water allocations market for the environment

5.51 The water market operates at two levels:

- permanent transfer of water entitlements within a catchment or between certain catchments - this is known as entitlement or permanent trading; and
- temporary transfer of the right to access the water allocated to an entitlement in a given year - this is known as allocations or temporary trading. This can occur within or between certain catchments.

5.52 Currently, the Government is only purchasing permanent water entitlement and has not participated in the allocations market. It was put to the Committee that the Government should be buying temporary water allocations to either replace or complement current purchase of permanent entitlements including using the allocations market to both buy and sell water for the environment.³⁶

5.53 One of the criticisms of the strategy of buying permanent entitlements is that it will affect the availability and price of water on the allocations

36 Mainland Finance, *Submission 523*, pp. 2-3; Mr Ian Wiskin, *The Fifth Estate, Transcript of Evidence*, Canberra, 25 March 2011, p. 14; Murrumbidgee Irrigation Limited, *Submission 419*, p. 15; Mr Gilbert Silby, *Submission 380*.

market.³⁷ Concern was expressed that the resulting high temporary water price based on supply and demand in dry times will make it more difficult for farmers to manage low allocation years.³⁸

5.54 The two main reasons as to why Commonwealth purchasing on the temporary market would be beneficial suggested that it would be a more efficient and strategic way to hold water for the environment, that is buy water when and where the environment needs it;³⁹ and that it would provide support for the irrigation industry and dependent communities during times of drought. Western Murray Irrigation summed up these two objectives:

During the worst of the drought when the environment was suffering the Government would not enter the temporary water market to provide relief to the environmental assets. Water was available to purchase. The environment must be treated like any business with a value, if it is valuable enough different strategies are used to optimise outcomes in any given year. Right at the moment the environment could easily purchase hundreds of thousands of megalitres on the temporary market at \$30 ML without impacting agricultural production.⁴⁰

5.55 Four different approaches have been suggested:

- the purchase of temporary water when needed for the environment;
- the sale of environmental water that is excess or surplus to environmental needs;
- counter-cyclical trading of environmental allocations; and
- engaging options contracts with entitlement holders for water to be accessed at agreed allocations or flow rates.

5.56 These approaches all attempt to address a potential inefficiency arising from uncertainty around how much water is actually needed and the variability of environmental demand for water. In economic terms this is referred to as optimising the utility of the water, that is, if it is not needed for the environment, it should be put to productive use by irrigators.

37 Seven Fields, *Submission 433*, p. 4.

38 Victorian Farmers Federation, *Submission 395*, p. 12.

39 David Blackett, Queensland Fruit and Vegetable Growers, *Transcript of Evidence*, St George, 15 March 2011, p. 46.

40 Western Murray Irrigation, *Submission 242*, p. 4.

- 5.57 Applying these approaches would provide the opportunity to optimise the amount of environmental water held once there is better knowledge about the volumes needed and delivery of water to achieve environmental objectives.⁴¹

Purchasing allocation water when needed

- 5.58 The proposal to supplement water available from entitlements held by the Commonwealth Environment Water Holder (the CEWH) by buying allocations when needed for the environment was raised as an alternative to buying the full amount in entitlements alone. This is a common approach adopted by irrigators to provide greater flexibility.

- 5.59 Without current knowledge of environmental water needs or a comprehensive environmental watering plan, the exact amount of water required is not known. The current approach of buying enough entitlements to cover the reduction to the SDLs places the burden of this uncertainty upon irrigators.

- 5.60 It has been suggested that a minimum of entitlement should be held by the CEWH with additional water required to meet the specified environmental objectives being sourced by buying annual allocations. This could reduce the total initial outlay by the Commonwealth. The CEWH could then measure year by year the environmental benefit achieved and the impact on the social and economic fabric of the Basin. Mr Richard Mills, Chairman of Mildura's Future Water Group, noted:

Why not buy the water when it is available, with regard to temporary water? It is always available. It is just an easier alternative. You are not taking water from communities permanently. I think that they should be taking part in the market just like everyone else. The \$3.1 billion that they want to spend on water buyback is a huge amount of money and they do not need to be spending that right now ... the last thing they need to be doing is buying water right at the moment, when it is not necessary.⁴²

- 5.61 There is a potential risk in this approach associated with the uncertainty of future prices on the allocation market. The allocation water market is still a relatively immature market with a lot of peaks and troughs.⁴³
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41 Mainland Finance, *Submission 523*, p. 5.

42 Mr Richard Mills, Chairman, Mildura's Future Water Group, *Transcript of Evidence*, Mildura 19 January 2011, p. 8.

43 Mr Vince DeMaria, Chairman, Sunraysia Citrus Growers Inc., *Transcript of Evidence*, Mildura 19 January 2011, p. 34.

- 5.62 Nonetheless, this is an option that needs to be explored as part of a package of measures to address the effectiveness of the buyback program.

Selling surplus environmental water

- 5.63 The idea of selling environmental water was also raised throughout the inquiry as an option to support irrigators.
- 5.64 In his submission to the Committee, Harold Clapham of Mainland Finance suggested that the CEWH could detail the environmental flows required and projects being supported and the amount of surplus water available for temporary transfer for the forthcoming irrigation season. Wholesale water providers already provide similar information to their users. He also suggests that the temporary transfer of the CEWH's allocation may be done at the wholesale level and then administered by irrigation providers.⁴⁴
- 5.65 The sale of surplus water is supported by both irrigators and environmental advocates. The Queensland Farmers Federation, the Wentworth Group and the Queensland Conservation Council all endorsed the idea with the condition that the water was truly surplus.⁴⁵
- 5.66 The National Water Initiative states that environmental water held as a water access entitlement may be made available to be traded (where physically possible) on the temporary market, when not required to meet the environmental outcomes sought.⁴⁶
- 5.67 Again, this option must be further explored as an option to reduce the impact on irrigators.

44 Mainland Finance, *Submission 523*, pp. 5-6.

45 Mr Ian Johnson, Queensland Farmers Federation, *Transcript of Evidence*, St George, 15 March 2011, p.23; Mr Peter Cosier, Wentworth Group of Concerned Scientists, *Transcript of Evidence*, Canberra, 2 March 2011, p. 27; Mr Nigel Parratt, Queensland Conservation Council, *Transcript of Evidence*, Goondiwindi, 16 March 2011, pp. 25-26.

46 *Intergovernmental Agreement on a National Water Initiative*, para 35, p. 7.

Counter-cyclical trade

- 5.68 The term counter-cyclical trade refers to the selling of environmental water when it is not needed for the environment and buying when it is. This is based on the principle that, generally, environmental watering regimes should follow natural rainfall patterns, that is, less water should be delivered to environmental sites during dry periods to mimic natural conditions. This coincides with increased demand for irrigation use and higher water prices. Counter-cyclical trade involves the sale of environmental allocations in a drought when prices are high and purchasing allocations at a lower price in wetter years and using profits to buy more allocations or additional entitlements.⁴⁷
- 5.69 Irrigators have expressed support for counter-cyclical trade of environmental water:
- What he [an irrigator] really wants is for the environment to get a large proportion of water but act like a water bank, if you like, so in the years when the environment does not need as much water he knows as an irrigator who has adjusted his business to benefit from temporary trade that he will have somewhere he can go to trade water and vice versa. So he sees a lot of benefit in the environment having a big bank of water but being able to trade.⁴⁸
- 5.70 From an irrigator's perspective, this arrangement would increase water availability in drought years by temporarily trading environment water.⁴⁹ From an environmental perspective it provides the opportunity to recover costs and acquire additional water to better meet environmental objectives throughout the Basin.
- 5.71 While the sale of water during a drought is likely to be welcomed, there will be some concerns should the Government been seen to be profiteering at the expense of struggling farmers. The Committee has some concerns about the potential adverse impacts of the Government operating in the market and this would need to be appropriately managed and minimised.

47 Young and McColl, CSIRO Land and Water Publication, *Robust Reform: Implementing robust institutional arrangements to achieve efficient water use in Australia*, Canberra, 2003.

48 Mr Tim Stubbs, Wentworth Group of Concerned Scientists, *Transcript of Evidence*, Canberra, 2 March 2011, p. 27.

49 Barossa Infrastructure Ltd, *Submission 263*, p. 2.

- 5.72 One concern regarding counter-cyclical trade is the potential difficulty in determining whether environmental water is truly surplus. This may be particularly difficult if carryover provisions exist enabling the CEWH to bank its allocations for larger environmental flows in proceeding years or as insurance to protect important assets during long-term drought. These are matters that warrant further investigation.

Options contracts

- 5.73 It was put to the Committee that the Government needs to look for a greater diversity of water products and build a portfolio that better suits the needs of the environment and limits potential impacts on communities.
- 5.74 Options contracts are defined by the Productivity Commission as a contract that gives the right, but not the obligation, to purchase or sell a good at a specified price within a specified period of time.⁵⁰ Mr Ian Wiskin of the Fifth Estate consulting firm described options contracts as follows:

...entitlement holders could enter into an option arrangement with the government to sell their water at a predetermined price – and there are ways of working that out – and, once certain trigger points are met, the entitlement holder then delivers water to the environment. That way the entitlement holder maintains ownership of the title and becomes part of the solution.

What it also does is provide a revenue stream for farmers so that they can make a judgement during a dry year about whether they plant a crop or whether they sell their water to the government. In other words, the environment then becomes part of the tradeable water right, but it is an option.⁵¹

- 5.75 Mr Matt Linnegar of Murrumbidgee Irrigation Ltd told the Committee of their attempts to negotiate options contracts with the Government:

... there are opportunities for a range of other water products that the Commonwealth could invest in. We developed one of those quite some time ago but unfortunately they have not gone very far in terms of our dealings with the Commonwealth, although they have helped fund the pilot of the project – that is, River Reach. That is one example. It is a forward sale of allocation against an entitlement rather than the sale of the entitlement itself, so it is like

50 Productivity Commission 2006, *Rural Water Use and the Environment: The Role of Market Mechanisms*, Research Report, Melbourne, August 2006, p. xix.

51 Mr Ian Wiskin, *The Fifth Estate, Transcript of Evidence*, Canberra, 25 March 2011, p. 14.

leasing a house rather than selling it. There are a range of other products that are available if the government could turn their mind to the sorts of products that would allow for stabilisation of these communities and not the great loss we talked about with the removal of entitlement. A couple of years ago, within the project, we conservatively suggested across the basin that there could be a demand for up to 250,000 megalitres of such alternative products if the government were interested in purchasing them.⁵²

- 5.76 Again, this points to the difficulty that the current water purchase program has dealing with flexible solutions.
- 5.77 ABARES modelling of the potential cost of recovering water through options contracts demonstrated that, in the presence of countercyclical demands, there could be significant cost savings relative to the purchasing of entitlements.⁵³
- 5.78 There is some concern about the relative reliability and relative value for money of water obtained through options contracts, particularly given the unknown potential future impacts of climate change. However, such opportunities should be further explored in the interests of the CEWH developing a flexible and versatile portfolio and the benefits of an innovative water market.

Improving government investment

Investing in irrigation efficiencies

- 5.79 Stakeholders expressed a clear preference for water to be recovered through investments in efficiency improvements:

There can be a win-win solution here for everyone. On-farm infrastructure upgrades mean more water for the environment and better irrigation practices. We can grow the same amount of produce with less water. The government buyback of water is only giving a temporary reprieve to the farmer. However, if we

52 Mr Matt Linnegar, General Manager, Corporate and Customer Operations, Murrumbidgee Irrigation Ltd, *Transcript of Evidence*, Griffith, 25 January 2011, p. 22.

53 A. Heaney and A. Hafi, *Using water options to meet environmental demands*, ABARE Australian Agricultural and Resource Economics Society Conference, 2005.

exchange water for implementing irrigation efficiencies the effects will be ongoing to the farmer, the community and the nation.⁵⁴

Case study 5.3 Initiatives from irrigation providers

Total Channel Control system

Rubicon presented its Total Channel Control system as an alternative to pipelines for the delivery and distribution of water. Total Channel Control, automates the operation of channel delivery systems, enabling more efficient operation of the delivery network and resulting in less water wastage and improved service to irrigators, which facilitates further efficiencies on-farm.

It is an end-to-end solution that integrates a number of components to increase the efficiency of channel supply systems, including:

- water control gates that manage the flow of water in open channel networks with integrated meters and instrumentation to measure water level and flow;
- communications technology to remotely monitor and control gates and meters;
- management software designed to improve the utilisation of irrigation supply infrastructure; and
- unique modelling and control of channel dynamics.

Rubicon claims that the potential savings are in the order of 40 percent to 50 percent of the water currently diverted for irrigation. That is, through the efficient supply and application of water the same level of agricultural output can be achieved using 40 percent to 50 percent less water than is currently diverted from river systems.⁵⁵

RiverReach

RiverReach is a product developed by Murrumbidgee Irrigation with funding from the Water Smart Australia project. *RiverReach* products are contracts that enable entitlement owners to sell or term-lease water based on agreed conditions. In other words, forward sale products that allow irrigators (or other entitlement holders) to retain their licensed entitlement but forward sell their annual allocation against that entitlement for an agreed period. Murrumbidgee Irrigation estimate that this type of product could deliver as much as 250,000 ML across the southern connected system of the Basin.⁵⁶

Murray Irrigation subsystem retirement package

Based on the results of a Marsden Jacob Associates report (to analyse the benefits and costs of investments in water saving technologies and strategies on farms within the area), Murray Irrigation prepared a submission in conjunction with irrigation entitlement holders to the then Department of Environment, Water Heritage and the Arts (DEWHA) in 2009 for a sub-system retirement package designed to ease the burden of maintenance on low demand channels and reduce system footprint leading to reduced water losses through seepage and evaporation. It was felt that a bulk purchase of this nature, approximately 25 GL from one irrigation sub-system alone, plus the added savings in conveyance water through the retirement of infrastructure, would provide a good option for the Commonwealth.⁵⁷

Similarly, Murray Irrigation prepared an application to participate in the Private Irrigation Infrastructure Operators Program (PIIOP). The submission looked to combine purchasing with strategic channel retirement and deliver on other opportunities. The application envisaged the return of 167 GL at an average price of \$3,400 per ML.⁵⁸

54 Mr John Padman, Murray Irrigators Support Group, *Transcript of Evidence*, Shepparton, 21 January 2011, p. 9.

55 Rubicon, *Submission 418*, pp. 4-5.

56 Murrumbidgee Irrigation, *Submission 419*, p. 14.

57 Murray Irrigation, *Submission 440*, p. 16.

58 Murray Irrigation, *Submission 440*, p. 16.

On-Farm Irrigation Efficiency program and subsystem retirement

Murray Irrigation see a large opportunity for on-farm efficiency through the conversion to high flow irrigation. It is estimated that up to 40-50 GL in water savings can be achieved in a typical year via this method. High flow irrigation is occurring through the On-Farm Irrigation Efficiency program under which Murray Irrigation is a delivery partner with the Commonwealth Government. Murray Irrigation has submitted 141 projects for this programme and is currently in the process of delivering contracts to the landholders. Through these projects it is estimated that 30 GL will be delivered to the Commonwealth Environmental Water Holder.

- 5.80 Whereas the buyback program is seen to be removing productive water from regions, government investment in infrastructure provides 50 per cent of the water savings to the environment without reducing agricultural productivity.⁵⁹
- 5.81 Current funding opportunities that are available through the Australian Government's \$5.8 billion Sustainable Rural Water Use and Infrastructure Efficiency Program (SRWUIP) component of Water for the Future include:
- Private Irrigation Infrastructure Program (SA)
 - Healthy HeadWaters in the Murray-Darling Basin (QLD)
 - Private Irrigation Infrastructure Operators Program (NSW)
 - Northern Victoria Irrigation Renewal Project (VIC)
 - Irrigation Modernisation Planning Assistance program (Catchments in the Southern connected Murray system and the Lachlan)
 - On-Farm Irrigation Efficiency Program (Basin-wide).
- 5.82 The Committee heard that, in many areas of the Basin, irrigators have already achieved high levels efficiency thereby limiting their opportunity to access funding through these programs:
- The South Australian Murray Irrigator is being more severely impacted upon by the whole water reform process particularly as there are fewer margins for error in a finely tuned water management system. The Water for the Future funds are not accessible to SA Murray irrigators due to their historic management and yet we are expected to find further water savings.⁶⁰
- 5.83 There was also concern about the accessibility of government programs:
- Most of them [irrigators] are very keen to upgrade their irrigation systems to more efficient systems. If we can make access to those programs a lot easier, I think we will find that we will have a lot

59 Victorian Farmers Federation, *Submission 395*, p. 26.

60 South Australian Murray Irrigators, *Submission 421*, p. 1.

more turnover. When you are looking at efficiencies in water use, particularly in horticulture, most of the horticulturalists are quite efficient. Many areas have already upgraded. We do support infrastructure upgrades, whether on farm or off farm, over and above water buyback. So if we can make those programs more accessible we will find that we will have a lot more uptake of those programs and grants.⁶¹

5.84 Many also expressed frustration at the red tape and delays relating to the government programs:

Having participating in commonwealth programs from a number of different perspectives, it seems they all follow similar themes which achieves poor outcomes. In general they are micro managed and bind participants up in red tape. They do not keep to their time lines which creates uncertainty. An example of this is the current water efficiency program of which DEWHA indicated a July/ Aug (sic) sign off yet the contracts only turned up in mid December. This type of incompetence places uncertainty on our business in organising suppliers and contractors and we will now need to delay some of our project by twelve months.⁶²

5.85 Similar evidence was received from the Ricegrowers' Association (RGA):

It is perhaps understandable that the bureaucracy is cautious when delivering this program after the problems experienced with the insulation and school upgrade programs; however the approach currently being adopted is too cumbersome and too slow. RGA has found the program to be beset by unnecessary delays and red tape that are testing the goodwill of organisations such as ours trying to engage constructively in dealing with water management issues in the Basin.

Delivering these programs in a timely and efficient way is absolutely critical to achieving a balanced approach to water use in the basin; that is, meeting the dual objective of returning additional water to the environment and maintaining the productive capacity of the Basin.⁶³

61 Ms Judith Damiani, Chief Executive Officer, Citrus Australia Ltd, *Transcript of Evidence*, Mildura, 19 January 2011, p. 22.

62 Ms Jennifer Wheeler and Mr Malcolm Holm, *Submission 495*, p. 2.

63 Ricegrowers' Association, *Submission 390*, p. 7.

5.86 Mr Stewart Ellis, Chair of the National Irrigators Council raised the need for investments in irrigation efficiencies to be better integrated with the buyback program:

There is a real need for that whole program to be very integrated to make it work, otherwise we are going to have the rug pulled. We can spend on some efficiencies over here, only to find someone there then turns around and sells water to the government, and it is another stranded asset. Those programs really do need to be talking to one another.⁶⁴

5.87 While many wish to see infrastructure initiatives replace the buyback program, it was also put to the Committee by the Sunraysia Branch of the VFF that the likelihood that SDLs can be wholly or substantially achieved by infrastructure upgrades are unconvincing and unrealistic.⁶⁵ SEWPAC noted that only an approximate 600 GL (long-term yield) of water savings is to be returned to the environment based on current and expected projects. While this is significant, it is not seen as sufficient to meet the predicted environmental needs.⁶⁶

5.88 However, the Committee is persuaded that with a more efficient infrastructure delivery program, there is significant opportunity for environmental savings to be met without buyback.

Recommendation 9

The Committee recommends that the Commonwealth Government focus greater investment in on- and off- farm water saving projects.

Case study 5.4 Successful joint partnerships

Water Use Efficiency Project

In Gunnedah the Chair of the Namoi Councils Water Working Group informed the Committee of the Water Use Efficiency (WUE) Project as an example of a successful joint project between governments (state and Commonwealth); Catchment Management Authorities; and irrigators.

The total funding for the WUE Program was \$4.99 million, \$990,000 in government monies and \$4 million from 35 ground water irrigators. The anticipated water savings or efficiency gain for use on-farm to improve productivity and maintain viability was 6,830 megalitres. Funds were expended on the planning and installation of improved irrigation technology and monitoring of equipment performance plus a small educational/training component.

64 Mr Stewart Ellis, Chair, National Irrigators Council, *Transcript of Evidence*, Canberra, 25 March 2011, p. 54.

65 Victorian Farmers Federation: Sunraysia Branch, *Submission 521*, p. 2.

66 Ms Mary Harwood, SEWPAC, *Transcript of Evidence*, Canberra, 9 February 2011, p. 5.

The Program funded a wide variety of irrigation technology including:

- centre pivot and lateral move irrigators;
- sub-surface drip irrigation;
- flexi-flume to replace open head ditches;
- piping supply channels;
- installation of new bores;
- multiple cells in storages;
- laser levelling;
- replacement of gates and pipes; and
- purchase of larger diameter siphons.

Monitoring included:

- installation of capacitance probes;
- sapflow meters;
- EMI surveys and soil testing; and
- Watertrack and Irrimate monitoring.

Mr Brown acknowledged that this particular project related to improved water use efficiency on-farm with no return of the efficiency gains to the environment, he believes that the opportunity exists with government funded programs for "win win" outcomes that can result in individual irrigation productivity increases that also result in positive socio-economic outcomes.⁶⁷

The Fifth Estate

Mr Wiskin, a Principal within the Fifth Estate, told the Committee that he believes that there is sufficient doubt around the amount of additional surface water required for the environment and the way in which this is assessed that presents an opportunity to adopt an "adaptive management" approach – which utilises a wide range of tools necessary to maintain a water management system that deals with the highs and lows of water flows within the Basin.

Mr Wiskin cited a project in 2003 where Pratt Water, with the assistance of the Fifth Estate, embarked on a programme of applying private sector business principles to the Murrumbidgee catchment based on an inventory approach to water management. The project team commissioned 40 individual projects and consulted widely with government and the community and involved 150 people from 60 organisations. The key findings were:

- 1334 GL of water per year in the Murrumbidgee Valley was unaccounted water flows, water losses and water identified for potential savings;
- 945 GL of water identified for savings through investments, reforms and matching crops to soils;
- \$845 million worth of new investments identified to save water in the Murrumbidgee Valley;
- a minimum of an additional \$293 million per year of farm gate production income;
- \$421 million of new capital investment opportunities can be realised within the Murrumbidgee Valley; and
- identified water saving investments and new water efficient production could provide 4,500 employment opportunities and boost regional income by up to \$245million.

Whilst the project specifically focussed on the Murrumbidgee River catchment, an Australia-wide model was also developed.⁶⁸

67 See: Namoi Councils, *Exhibit 5*, pp. 1-2; and Mr Brown, Namoi Councils, *Transcript of Evidence*, Gunnedah, 14 February 2011, pp. 1-4.

68 The Fifth Estate, *Submission 487*, pp. 1, 9.

Better flexibility in investment

- 5.89 It has also been suggested that a more flexible approach than that taken under the Commonwealth infrastructure program would return more water for the environment for less money. Mr Ian Wiskin of Fifth Estate referred to the Water for Rivers model, outlined in case study 5.1, to suggest that considerable savings may be achieved through a private sector based approach and at a much lower cost than the current arrangements:

With the Water for Rivers approach of looking at major gains in managing the system flow or the river flow and working with organisations such as State Water, I think there will be real gains and savings out of that, far more gains and savings than there will be out of on-farm stuff in the short time frame that we are talking about. It is the Water for Rivers approach that I would like to see as an implementation authority.

The great thing about it is that you get away from this feudal lordship of a Murray-Darling authority and you involve the states, and the states still manage the system, they still own the storages. The Water for Rivers concept actually had a legal basis. It was called an implementation deed. So the shareholders in Water for Rivers, being the state governments and the Commonwealth, had clearly-defined legal obligations to meet. It worked extremely well. It was a low-cost, low-overhead operation, very little bureaucracy, and it achieved some great outcomes in a short period of time.⁶⁹

- 5.90 The Committee was impressed with the successful and innovative approach applied by the Water for Rivers initiative. Mr Richard Bull, Chairman of Water for Rivers, summed up the success of this initiative in demonstrating the capacity to achieve significant savings through closer collaboration with both industry and communities:

I think we have demonstrated through Water for Rivers that there is an infrastructure alternative to buying back water. As I said, I believe there is enough water in the system for everyone if we manage it properly – and that includes irrigators, towns and communities. I think there could be and should be enough water found out of infrastructure savings. Obviously they are going to take a little bit longer than buyback, but they are substantial and they benefit everyone. There is a win-win situation for both farmers and the environment. The river authorities, like State

69 Mr Ian Wiskin, Fifth Estate, *Transcript of Evidence*, Canberra, p. 18.

Water in New South Wales, will get a state-of-the-art system that will benefit them for many years. The way you look at it, it is certainly the best alternative to achieving these water savings and I would not have thought it would damage any jobs in the regions along the river and in the communities.⁷⁰

- 5.91 There is widespread support for the Water for Rivers approach.⁷¹ The New South Wales Farmers Association identified the factors that underpin Water for Rivers success:

...one of the primary advantages of WFR as a delivery mechanism is its company structure and governance model. WFR is owned by three equal shareholders being the NSW, Victorian and Federal Governments but operates like a private company, rather than a government bureaucracy. This helps to address what has been one of the primary obstructions to delivery of infrastructure funding, which is achieving timely agreement on project approval.

As a public company limited by guarantee, WFR, can operate more rapidly and strategically than a government agency.

WFR is effectively a facilitator between individual irrigators and communities and Government funding bodies. The project ideas are coming from local water users and service providers with WFR providing a facilitation and governance structure.

The WFR model is adaptive enough to work across any project that has the potential to deliver positive outcomes within the system.⁷²

- 5.92 Mr Bull pointed to the amount of red tape being an obstacle to success of the Government's Water for the Future program:

Process is pretty much the way they operate. It is a matter of filling out forms, making applications et cetera. It is an exhaustive, drawn-out process which in the end drives a lot of people to us. They say, 'We have had enough of this. Can we do a deal with you?' and the answer is usually yes if it is a good deal for both of us. It is very hard to go beyond that, but I do know that there is a frustration out there when government delivers programs – and I

70 Mr Richard Bull, Chairman, Water for Rivers, *Transcript of Evidence*, Canberra, 23 February 2011, p. 21.

71 Mr Richard Widows, Senior Policy Advisor, New South Wales Farmers Association, *Transcript of Evidence*, Dubbo, 16 February 2011, p. 39; Mr Charles Armstrong, President, New South Wales Farmers Association, *Transcript of Evidence*, Dubbo, 16 February 2011, p. 37.

72 New South Wales Farmers Association, *Submission 485*, p. 33.

have heard it from the New South Wales government officials too, when they have had funds available under some of these programs – the amount of red tape that is rolled around with these particular programs almost drives them to distraction. Then again, that is the way that government operates. Government has to be transparent and has to be accountable. It is not that we are not accountable and not transparent, but because we are a public company, and almost a private sector organisation, we can do things and get on with the job. We do not have to have lots of forms filled out and a lot of processes ticked off to get to any particular conclusion.⁷³

- 5.93 The Water for Rivers initiative is a flexible, versatile, responsive and efficient model that can work within local context and exploit innovative ideas and local knowledge. It has garnered significant support and respect within the communities it has worked through the effective respectful involvement of those communities in finding solutions. It has also proven to be a model that can successfully marry water purchase (buyback) with infrastructure works and measures to find real and substantial water savings.⁷⁴

Investing in environmental works and measures

- 5.94 The Committee heard that environmental water could be used more effectively through the implementation of works and measures to reduce the amount of water required to achieve the same objectives.⁷⁵ Thus:

Increasing water scarcity means that structural works are an important solution for providing water to high-value floodplains and wetlands, as these significantly reduce the water required to deliver the environmental outcomes. This has been demonstrated through The Living Murray Initiative, where similar ecological outcomes can be provided using a significantly smaller volume of water and hence less cost and impact on regional communities.⁷⁶

73 Mr Bull, *Transcript of Evidence*, Canberra, 23 February 2011, p. 24.

74 Water for Rivers, *Submission 408*.

75 High Security Irrigators – Murrumbidgee, *Submission 309*, p. 1; Murrumbidgee Irrigation Ltd, *Submission 419*, p. 3; Ricegrowers' Association of Australia, *Submission 390*, p. 8; Queensland Government, *Submission 624*, p. 1; National Irrigators Council, *Submission 189*, p. 3; Mr Tim Napier, Executive Officer, Border Rivers Food and Fibre Inc., *Transcript of Evidence*, Goondiwindi, 16 March 2011, p. 5.

76 Australian Conservation Foundation, *Exhibit 117*, 'Priority works to increase the effectiveness and efficiency of environmental water delivery in northern Victoria - Information for the

- 5.95 The Committee was provided with information on potential efficiencies for environmental water delivery from either engineering solutions or smarter use of environmental water. For example:

The Barmah and Millewa forests are examples of where small flood events have been managed to achieve ecological outcomes equivalent to floods much greater in volume. This is achieved with a network of river bank regulators into creeks and cuttings that put water into various parts of the forest and is then spread using low banks (often roads), this achieves both height and duration of flooding objectives.⁷⁷

- 5.96 The Victorian Department of Sustainability and the Environment provided the following information to the MDBA in July 2010:

Works at Lindsay Island will enable flooding of 30 per cent of the floodplain (about 5,000 ha), and reduce the amount of environmental water required for each event from 1,200,000 ML to 90,000 ML. To purchase allocation on the temporary market and provide this difference – just once – would cost around \$200 million. To purchase high-reliability water share and provide it more permanently would cost over \$2 billion.⁷⁸

- 5.97 With a frequency of watering every four years at Lindsay Island, the Victorian Farmer's Federation estimated that the annualised savings from the project is 277.5 GL.⁷⁹

- 5.98 While investment by governments in environmental works and measures through the Living Murray Initiative have been successful, the Commonwealth Government, other than investigating the reconfiguration of the Menindee Lakes System, has not been pursuing environmental works and measures as part of Water for the Future, presumably because they do not result in water that can be transferred to the CEWH as entitlements.

Murray-Darling Basin Authority, July 2010' (unpublished), *Victorian Department of Sustainability and Environment*, 31 January 2010, p. 3.

77 Gordon and Phyllis Ball, *Submission 354*, p. 2. See also Barry Dexter and Donald McLeod, *Submission 153*.

78 Victorian Department of Sustainability and Environment unpublished report: *Priority works to increase the effectiveness and efficiency of environmental water delivery in Northern Victoria, July 2010*, cited in Southern Riverina Irrigators, *Submission 452*, p. 14. See also Australian Dairy Industry Council, *Submission 196*, p. 10; Mr Mills, *Transcript of Evidence*, Mildura, 19 January 2011, p. 6.

79 Victorian Farmers' Federation, *Submission 395*, p. 25. See also: National Farmer's Federation, *Submission 490.1*, p. 3; and Mr Anderson, Victorian Farmers' Federation, *Transcript of Evidence*, Bendigo, 21 January 2011, p. 32.

Case study 5.5 Infrastructure works for environmental water

Griffith – Barren Box Storage and Wetland

Murray Irrigation (MI) provided the example of the Barren Box as water and wetland storage that is used for balancing operational water demands. Prior to the works undertaken by MI, Barren Box Swamp was shallow with a surface area of 3,200 hectares. MI completed works that deepened the storage and reduced its surface area which resulted in:

- achieving 20 gigalitres in water savings which could be returned to the river system for use in environmental flows;
- an improvement in the reliability of water supply to the Wah Wah Irrigation District; and
- restoring a more natural flooding regime, and ecological system, to the area dedicated to the rehabilitation of the Barren Box ephemeral wetland.

The Barren Box Swamp is now:

- an active storage cell covering 1,230 hectares (30% of current area) with a storage volume of 24,000 ML at full supply level;
- an intermediate storage cell covering 320 hectares with an effective storage volume of 4,000 ML (10% of current area); and
- a wetland cell covering approximately 1,650 hectares (60% of current area).⁸⁰

Mirrool Creek Rehabilitation Project

Mirrool Creek is a natural ephemeral creek system running through the Murrumbidgee Irrigation Area that provides drainage and supply services through a channelised section of the creek. Murrumbidgee Irrigation expect that the rehabilitation project will deliver improved ecological outcomes and a more efficient supply and drainage system via the revegetation of the natural creek system and the re-construction of channelised section of the creek. It is estimated that the project will deliver savings in the order of 6,000 ML via confining supply and drainage flows within the channelised section, while allowing natural flood events to inundate the surrounding creek system and wetland.⁸¹

Wah Wah stock and domestic project

The Wah Wah stock and domestic project will supply stock and domestic water to landholdings located to the west of Barren Box Storage and Wetland, covering an area of approximately 300,000 hectares. The aim of the project is to replace the existing open channel system with a current generation pressurised and piped stock and domestic system (including pump stations, water storages and new supply points). It is expected this project will save 10,000ML of water annually.⁸²

Lake Wyangan

The Lake Wyangan project involves the planning, design and implementation of a new water supply to the Lake Wyangan catchment that will provide for the planned transition of the southern section of the catchment to urban development. This will also allow other areas with higher agronomic potential to be irrigated in the future. Murrumbidgee Irrigation expect that the project could save 6,000 ML of water annually.⁸³

5.99 The Committee considers further investment in environmental works and measures an important means to help 'bridge the gap' providing

80 Murrumbidgee Irrigation, *Submission 419*, p. 16. See also: Leslie Worland, *Submission 167*, p. 4; Warren Muirhead, *Submission 357*, p. 3.

81 Murrumbidgee Irrigation, *Submission 419*, p. 12.

82 Murrumbidgee Irrigation, *Submission 419*, p. 12.

83 Murrumbidgee Irrigation, *Submission 419*, p. 12.

environmental objectives are met for the given site. Investment in viable projects of this sort should be an integral part any transition to a future Basin Plan.

5.100 Already, significant environmental water has been purchased. In its submission, SEWPAC states that:

To date the Australian Government has purchased sufficient entitlements to yield on average some 657 GL of water each year. This means that the government has already recovered around 20% of the 3,500GL reduction scenario in the Guide.⁸⁴

5.101 Further, the Murray Darling Basin Authority reports that 47 GL has been recovered through state-based programs. Together with the water recovered by SEWPAC, there is a total of 704 GL that will be available to offset any reductions with the final Basin Plan.⁸⁵

5.102 The Queensland Government informed the Committee of projects and initiatives, some of which are already in progress, that could be further developed and expanded to assist in achieving water recovery. One such initiative is the Healthy Headwaters Water Use Efficiency Programme that aims to recover and share water savings from implementing on-farm water saving technologies. The Queensland Government anticipate that the first round of the programme will recover 15,300 ML of water, half of which (7,650 ML) will be made available to the Commonwealth Environmental Water Holder.⁸⁶

5.103 In its submission to this inquiry, the Queensland Government also lists examples of potential engineering works and measures for consideration that could generate water savings and enhance environmental outcomes for the Basin.⁸⁷

5.104 These are the types of projects that need to be explored prior to reducing consumptive water entitlements.

84 SEWPAC, *Submission 532*, p. 7.

85 SEWPAC, *Submission 532*, p. 7.

86 Queensland Government, *Submission 624*, p. 6.

87 Queensland Government, *Submission 624, Appendix B*, p. 16.

Case study 5.6 Menindee Lakes

The Menindee Lakes are a group of shallow lakes located on the lower section of the Darling River in far western New South Wales and approximately 110 kilometres east of Broken Hill. The principal lakes in the Menindee Lakes system are: Cawndilla, Menindee, Pamamaroo and Wetherell, comprising the main river channel, floodplain and a number of smaller lakes.

The current lake system covers an area of 463 km² and has a total combined storage capacity of approximately 1750 GL, which can be surcharged to 2050 GL under certain flow conditions. Water is extracted from the lakes for town water supply, irrigated agriculture, stock and domestic users, and to provide for environmental flow purposes.⁸⁸ The Lakes also form an important part of the social and cultural life of Broken Hill.

Throughout the inquiry the Committee heard a lot of evidence with regard to the Menindee Lakes and how the lakes should be treated within the Basin Plan. Following is an example of some of the arguments that were presented to the Committee, which included:

- Removal of man-made barriers which could lead to the return of 1,400 GL/y to the river system.⁸⁹
- Building a regulator between Menindee and Cawndilla.⁹⁰
- Work at Cawndilla to access residual pool of 200 GL which is water unavailable for use in the Darling River below Menindee.⁹¹
- Deepening of the lakes to increase their capacity as a cost effective alternative to building another dam or water storage facility.⁹²
- Engineering solutions to minimise evaporation losses with potential savings of up to 400 GL/y.⁹³
- Possible project to restore the original flooding and drying patterns in Menindee Lakes to increase water efficiency.⁹⁴
- Sinclair Knight Mertz in their paper; Darling River Water Saving Project Part B found that at best 248GL could be saved annually for \$2.7 million.⁹⁵
- The Committee also heard evidence that both supported the possible decommissioning of part of the Menindee Lakes, and equally opposed the decommissioning.⁹⁶
- A call for better management, and in some cases modification or re-engineering, of the system at the Lakes.⁹⁷

88 Maunsell Australia, Report for NSW Department of Natural Resources and the National Water Commission: Darling River Savings Project Part A, April 2007, p. 7.

89 Robert Warren, *Submission 104*, p. 9.

90 See for example: Murray Valley Water Diverters Advisory Association (NSW), *Submission 109*, p. 4; Darling River Action Group, *Submission 297*, p. 3, Stan Dineen, *Submission 351*, p. 4; Murray Darling Association, *Submission 402*, p. 7.

91 Tandou Ltd, *Submission 415*, p. 6.

92 See for example: Leslie Worland, *Submission 167*, p. 5; Shire of Brewarrina, *Submission 222*, p.3; Robert Caldwell, *Supplementary Submission 516.1*, p. 7.

93 See for example: Leeton Shire Council, *Submission 195*, p.13; Riverina and Murray Regional Organisation of Councils, *Submission 259*, p. 6; Mungindi-Menindee Advisory Council, *Submission 581*, p. 8; Pechelba Trust, *Submission 89*, p. 2.

94 Australian Wetlands and Rivers Centre, *Submission 364*, p. 4.

95 Auscott, *Submission 301*, p. 6.

96 Mr Kahl, Namoi Water, *Transcript of Evidence*, Gunnedah, 14 February 2011, p. 23; Sunraysia Citrus Growers, *Submission 446*, p. 3; Regional Development Australia, *Submission 493*, p. 5.

97 See for example: Russell Fisher, *Supplementary Submission 150.1*, p. 2; Bill Murray, *Submission 157*, p. 1; Carrathool Shire Council, *Submission 161*, p. 4; Jim Small, *Submission 212*, p. 2; Bourke Shire Council, *Submission 247*, p. 9; Goondiwindi Regional Council, *Submission 265*, p. 4; Gwydir Valley Irrigators Association, *Submission 417*, p. 12; Wentworth Shire Council,

What this evidence reveals is that whilst there is much conjecture over what should occur with regard to the Menindee Lakes in the Basin Plan, there is a general consensus that Menindee Lakes cannot be overlooked and require significant attention for the benefit of the Basin and its communities.

- 5.105 Appendix E contains a table of the potential return of water in a number of Basin regions. The initiatives and projects included are examples of the sorts of ideas that were presented to the Committee throughout the inquiry. Projects varied from individual irrigator on-farm efficiency and the closing down of local channel systems to community and government cooperative projects. Whilst the precise water savings and costings were not specifically analysed, the Committee wishes to highlight the value of local input into possible water efficiencies.
- 5.106 These projects represent not only the willingness of communities to participate in improving the health and prosperity of the Basin, but also the opportunity for government to further engage local Basin communities to find cost effective projects that may deliver on-farm efficiency or recover water that could ultimately contribute in offsetting any future SDLs.
- 5.107 The viability of the projects identified in Appendix E and in the case studies throughout this report, as well as any other identified community initiatives need to be assessed, as a matter of urgency. However, in the case of the Menindee Lakes, where a number of studies have already been completed, action needs to be taken.

Recommendation 10

The Committee recommends that the Commonwealth Government:

- **identify and assess the viability of environmental works and measures as identified throughout this report and by the community; and**
- **implement any viable measures as quickly as possible.**

Monitoring, compliance and enforcement

- 5.108 The Committee considers it imperative that all use of water in the Basin be accurately monitored and with appropriate compliance measures in place. There are potential water savings to be found through better measuring and measurement as well as monitoring water use, both from improved management efficiency and tighter compliance with entitlements.
- 5.109 The Water Act places new responsibilities upon the Bureau of Meteorology to manage information on the water resources of the Basin and the establishment of a water accounting system.⁹⁸ Responsibilities also exist under state and territory legislation for monitoring to be undertaken by the respective governments, who in turn are required to provide information to the Bureau of Meteorology.
- 5.110 The Water Act also gives a range of enforcement powers to the MDBA, ACCC and the Commonwealth Minister in relation to compliance, including with requirements of the Basin Plan.⁹⁹ While, in general, these powers may be applicable to individuals, corporations or state and territory governments, it is likely that compliance and enforcement provisions that exist under state legislation would apply in the first instance.
- 5.111 The extent of metering of water diversions varies significantly across the Basin. It is generally better in areas of high irrigation development and river regulation. However, even where there has been investment in metering, the Committee heard of reliability problems and lack of enforcement by state agencies. The Mungindi-Menindee Advisory Council submitted the following concerns on metering:

Water metering is a huge issue in the whole debate. On the Barwon-Darling we introduced time & event meters on all pumps by 1992 and then were required to install (at our own cost) ultrasonic MACE meters between 1998 and 2004. The problem is that these meters is that they have not been reliable and, in recent times, have not been properly managed & maintained by State Water and the NSW Office of Water.

Due to metering issues and disputes, the NSW authorities have not been able to provide water usage results to Barwon-Darling irrigators for the 2009/10 water year and there are still question marks and disputes over the 2007/08 water year. We are now well

98 Part 7, Division 2, *Water Act 2007*, p. 148.

99 Part 8, *Water Act 2007*, p. 156.

through the 2010/11 water year without knowing what our usage has been and how much carry-over water we have in accounts.

These problems mean that we need to introduce improved metering technology so that we can properly measure and manage river diversions.¹⁰⁰

- 5.112 It will not be possible to manage Basin water resources to the required level of efficiency without efficient and accurate monitoring of water use, including metering. It is incumbent on state and territory governments to fulfil their responsibilities in regard to compliance and enforcement.
- 5.113 In the interests of finding water savings and furthering water reform, the Commonwealth should be doing all it can to assist the state and territory governments to meet their responsibilities.
- 5.114 Clarity is required on what the respective compliance and enforcement roles and responsibilities are at the different levels of government in regard to the Basin Plan. As such, it is imperative that the Commonwealth, state and territory governments work cooperatively to develop a comprehensive compliance framework to form part of the Basin Plan implementation strategy recommended in this report.

Recommendation 11

The Committee recommends that the Commonwealth Government, in partnership with the Basin states and the Australian Capital Territory, develop a framework addressing the monitoring, compliance and enforcement of Basin water resource use.

Addressing taxation issues

- 5.115 The Committee is concerned that taxation issues relating to irrigation efficiency projects funded through the Water for the Future initiative are a critical factor impeding irrigator investment. In one case, the Committee was told of a \$50 million investment project that could not proceed because of a potential tax liability of \$14 million.¹⁰¹ Mr Rel Heckendorf from Murrumbidgee Private Irrigators Inc. put it this way:

¹⁰⁰ Mungindi-Menindee Advisory Council, *Submission 581*, p. 9.

¹⁰¹ Mr Brett Tucker, Managing Director, Murrumbidgee Irrigation Ltd, *Transcript of Evidence*, Griffith, 25 January 2011, p. 15.

The on-farm infrastructure program is one that the irrigation industry has embraced, but it has one major flaw: the taxation system. I do not think too many are going to take it up simply because if they get the money they get taxed on it, so the amount of money they get for the amount of water they give back to the government gets devalued. Until you fix the taxation system, some of those things just will not happen.¹⁰²

5.116 Given the importance of taxation issues in the implementation of programs as far-reaching and large as the Basin Plan and Water for the Future, it has been suggested to the Committee that the Australian Tax Office should be involved early so that tax issues can be dealt with rapidly and transparently.¹⁰³

5.117 It was also suggested that the tax system could be used to provide incentives to encourage investment in efficiency improvements that provide environmental benefits or transfer of water to the CEWH.¹⁰⁴

5.118 This issue is of such concern to the Committee that it raised it with the Ministers in its interim findings made on 9 February 2011 (see Appendix F). The Minister's responded that:

On 18 February 2011, we issued a joint announcement that the Government would move to change current taxation arrangements for irrigators who take up water efficiency investment grants to allow more strategic infrastructure investment. The tax changes will be backdated to 1 April 2010.

This taxation announcement in turn unlocked the announcement of Round 2 of the Private Irrigation Infrastructure Operators Program. This program will assist irrigation authorities to lead strategic infrastructure investments and manage concerns about stranded assets.¹⁰⁵

102 Mr Rel Heckendorf, Executive Member, Murrumbidgee Private Irrigators Inc., *Transcript of Evidence*, Griffith, 25 January 2011, p. 6.

103 Murrumbidgee Irrigation, *Submission 419*, p. 18.

104 Murrumbidgee Irrigation, *Submission 419*, p. 18; Mr Vince DeMaria, Chairman, Sunraysia Citrus Growers Inc., *Transcript of Evidence*, Mildura, 19 January 2011, p. 32; Mainland Finance, *Submission 523.1*, p. 2.

105 Minister for Regional Australia, Regional Development and Local Government and the Minister for Sustainability, Environment, Water, Population and Communities, Correspondence received 15 March 2011, see Appendix F.

- 5.119 The Committee welcomes these changes. However, the Committee is of the opinion that any further impediments to irrigation investment within the tax system should be removed and the use of tax based incentives should be explored.

Recommendation 12

The Committee recommends that the Commonwealth Government identify and rectify all impediments to irrigation investment in the taxation system.

Recommendation 13

The Committee recommends that the Commonwealth Government develop and implement options for tax based incentives for efficient irrigation investment as part of the implementation of the Basin Plan.

Investing in research and development

- 5.120 An essential component to supporting irrigators adaptation to a future with less water is to provide the technologies to ensure that Australian irrigators are at the cutting edge of global irrigation practice.
- 5.121 The National Program for Sustainable Irrigation, 'a collaboration of thirteen government, irrigation authority and primary producer bodies, and ... one of the longest-running national cross-commodity research and development collaborations',¹⁰⁶ has identified five essential components to a successful irrigation business:
- business planning – aligning business capacity with market opportunities;
 - irrigation planning – site selection and system design;
 - irrigation management – optimal production and water use efficiency;
 - agronomy and soil management – productive soils and optimal plant growth;
 - monitoring – continual evaluation and improvement.¹⁰⁷

¹⁰⁶ DAFF, *Submission 473*, p. 20.

¹⁰⁷ National Program for Sustainable Irrigation (NSPI), *Irrigation essentials: research and innovation for Australian irrigators*, Narrabri: December 2009, p. 7.

- 5.122 Rural research and development (R&D) is critically important to assisting the agricultural sector adjust to the challenges it faces as well as driving productivity growth. The Department of Agriculture, Fisheries and Forestry (DAFF) stated that:

ABARES has found that the decline in public investment in agricultural research is likely to have contributed to the slowdown in productivity growth that occurred from the mid 1990's. Continued investment in irrigation research, development and extension will be essential in helping irrigated agriculture to maintain and increase productivity as the basin plan is rolled out.¹⁰⁸

- 5.123 Many stakeholders called on improving the efficiency of irrigation water use as a measure to reduce the impact on irrigators of returning water to the environment. Concerns were raised in relation to the reduction in public funding for agricultural research, noting how improvements in irrigation practice and agronomy makes sound business sense:

We have very hard setting, non-subbing soils prone to compaction. Yield potential was always limited because of poor water holding capacity. Through a change in management regime to stubble retention, direct drilling and controlled traffic, the soils are now better able to capture and store any available moisture. The soils infiltration rates have improved from 30 mm to 70 mm. Not only has this dramatically lifted yield but has also increased the flexibility within the cropping program. We now grow high yielding crops using a system of integrated pest management, weed control, fertiliser management, rotations stubble management and inter-row sowing. In 1990 we would aim for 3.5T/ha wheat yield we now aim for 7 T/ha and have achieved 8.5 T/ha.¹⁰⁹

- 5.124 Significant water savings have already been achieved by effective R&D. For example, consumptive water for rice production has dropped by 60 percent¹¹⁰ and consumptive use for cotton now 'far exceeds the water use efficiency of all other major cotton producing countries.'¹¹¹

108 Department of Agriculture, Fisheries and Forestry (DAFF), *Submission 473*, p. 19.

109 Craig and Helen Reynolds, *Submission 570*.

110 Griffith City Council, *Submission 416*, p. 7.

111 CSIRO, *Submission 476*, p. 9.

5.125 Localised R&D was also presented as one avenue to create economic activity within the most severely affected communities.¹¹²

5.126 The Committee heard widespread calls for a renewed focus on and coordination of Basin-based R&D:

Commodity groups have been quite strong in delivering research and promoting new technology and irrigators will tend to focus on maximising their crop and want specific research. Localised approaches by credible individuals and organisations will always have the best results.

Having said that WMI still believes there is an opportunity to combine the currently fragmented irrigation efficiency research into a centre for irrigation excellence in the Murray Darling Basin.¹¹³

5.127 Aside from focusing on improved farming practices, it was put to the Committee that:

There are potential water savings to be gained through improved river operations that reduce delivery losses. These improvements can be in the form of better measurement, real-time remotely sensed information or in the installation (and in some cases removal or modernisation) of infrastructure.¹¹⁴

5.128 Public and private investment in appropriate, targeted, R&D is essential and how government investment should take place is discussed below.

Recommendation 14

The Committee recommends that the Commonwealth Government focus greater investment into research and development to improve irrigation efficiency.

112 Laurence Lewin, *Submission 396*.

113 Western Murray Irrigation, *Submission 242*, p. 8.

114 Namoi Councils, *Submission 517*, p. 17.

Committee comment

5.129 More can and should be done to address strategic water purchase and infrastructure investment as part of implementing the Basin Plan. In the words of one submitter:

Put simply, we must integrate State and Commonwealth programs that include modernisation, measurement, water purchase and structural works with the co-ordinated management of environmental entitlement. Only then will we deliver a future for the Murray-Darling Basin that provides harmony between the social, economic and environmental aspirations of the Basin community and the wider Australian populace.¹¹⁵

5.130 As discussed throughout this report, a strategy is needed that clearly sets out how Basin communities can move to a more sustainable future under the Basin Plan. Alongside this, a strategic, coordinated approach to water purchase and Government investment is necessary. Such an approach needs to be backed by dedicated resources that will be used to achieve real and tangible results on the ground.

5.131 There is also a need to deliver current government programs, such as the water purchase program in a way that is more strategic, more flexible and more open to innovative proposals in a far timelier manner than they are currently delivered.

5.132 To this end, the Committee is recommending that a national water fund be established that can be used to:

- invest in on-farm and off-farm water saving projects to provide water entitlements for the CEWH;
- invest in environmental works and measures to increase the SDLs;
- invest in research and development to improve irrigation efficiency and resilience.

115 Richard Bull, David Anthony and Gerry Lawson, *Submission 538*, p. 12.

- 5.133 The fund must be established in such a way that is flexible and responsive ensure that innovative solutions can be identified, assessed and progressed in a timely manner. It should provide the means to draw upon local knowledge and expertise and deliver outcomes that help communities adapt and build confidence in their future.

Recommendation 15

The Committee recommends that the Commonwealth Government establish a national water fund to:

- **invest in on- and off-farm water saving projects;**
- **invest in environmental works and measures; and**
- **invest in research and development to improve irrigation efficiency.**

- 5.134 Water purchase and infrastructure investment also needs to become more coordinated and innovative through:

- a strategic water purchase process;
- a more flexible use of the water market; and
- a flexible approach to identifying and managing infrastructure projects.

- 5.135 This can be achieved in part through components of the proposed national water fund being delivered through a government owned venture modelled on the successful, dynamic and inclusive approach demonstrated by the Water for Rivers initiative. This model offers a localised approach that harnesses the knowledge of, and consequently invests in, communities and has the capacity to be more timely, flexible and responsive than a government agency.

- 5.136 To this end, the Committee is recommending that a government owned corporation, based on the Water for Rivers model, be established through a cooperative arrangement with the Commonwealth and relevant state and territory governments as shareholders.

Recommendation 16

The Committee recommends that the Commonwealth Government consider establishing a national water fund manager that may:

- **take a strategic, localised approach to water purchase;**
- **in special circumstances, sell surplus environmental water as well as purchasing additional water when needed;**
- **identify and invest in irrigation and environmental infrastructure projects.**

5.137 In the establishment of the national water fund manager, consideration should be given to it:

- being established with an initial investment from the national water fund;
- be responsible for purchasing water for the Commonwealth Environmental Water Holder (CEWH), removing this responsibility from SEWPAC;
- establishing a portfolio of water entitlements from across the Basin to allowing it to sell as well as to strategically buy environmental water, given the CEWH's limited capacity under the Water Act to undertake such activity. This means that when the CEWH has excess water (for example, following wet years or when watering events are not required), this water may be returned to productive use in the temporary market;
- be given the capacity to invest in:
 - ⇒ research and development activities;
 - ⇒ irrigation efficiency projects; and
 - ⇒ environmental works and measures.

5.138 The Water for Rivers company and the NSW RiverBank company¹¹⁶, both which operate in the water market as government owned corporations, offer ongoing funding models including self funding which should be explored as part of the establishment of the water fund manager.

116 NSW Government, *New South Wales RiverBank Business Plan: Part A: Program Plan 2006-2011: Buying and managing water for the environment*, 2010 Update, p. 21.

- 5.139 The MDBA and SEWPAC must be subjected to high levels of scrutiny to provide a level of transparency and accountability that is apparent and accessible to all stakeholders.
- 5.140 How this should occur is addressed in Chapter 6.

Delivering the Basin Plan

- 6.1 Part of the challenge for the Murray-Darling Basin Authority (MDBA) in delivering the Basin Plan is to articulate clearly to the community how it will be implemented. Much of the implementation relies on the development of future state and territory water resource plans.
- 6.2 As already discussed in this report, future uncertainty is a key concern for communities and having a significant impact on business confidence. The MDBA on its own cannot address all of these issues, there needs to be stronger cooperative arrangements between Commonwealth and state and territory governments in order to deliver certainty to Basin communities.
- 6.3 There are also differences in timeframes between the states in the expected delivery of water resource plans, and therefore the expected implementation of the Basin Plan. These differences need to be resolved if any future intergovernmental cooperation is to be successful.
- 6.4 Communities expressed concern about what was happening to the water once it was purchased or returned to the environment. Communities are concerned about what form environmental water planning will take. Many stakeholders expressed a view that a double standard is being applied when the accountability required of irrigators is contrasted with the lesser accountability required of environmental water managers.
- 6.5 This chapter focuses on each of these issues and how the Basin Plan may be more cooperatively implemented to achieve more accountable outcomes that include local input and expertise.

Alignment of timeframes for implementation

- 6.6 In practical terms, the Basin Plan will be implemented through actions taken under water resource plans. Each Basin state and the ACT is required to develop a plan for each water resource area.
- 6.7 Arguments were presented both for and against extending the timeframes for the implementation of the Basin Plan. The reasons for extending the timeframes include:
- providing communities with more time to adjust;
 - providing more time to engage industry and community;
 - achieving equity between the states;
 - giving existing state water resource plans time to work;
 - allowing more time for infrastructure projects to be implemented and savings quantified;
 - time to better understand the socio-economic impacts; and
 - time to better develop the environmental watering plan and understanding the effect of utilising the Commonwealth environmental water holdings.¹
- 6.8 The environmental benefits of the 2010-2011 flooding events across the Basin relieves some of the pressure on the Basin planning processes and provides a positive starting point for the development of the environmental watering plan.
- 6.9 It has been suggested that by allowing a greater amount of time to adjust to water resource plans, communities can be better prepared, through strategic investments and planning. This also links to concerns about SDLs coming so soon after a period of devastating drought. This may, however, prolong the current sense of uncertainty that exists within Basin communities.

1 Mr Adrian Drury, Vice-President, Australian Dairy Industry Council, *Transcript of Evidence*, Canberra, 2 March 2011. p. 16; NSW Government, *Submission 585*, p. 4; Namoi Councils, *Submission 517*, p. 1; Deniliquin Council, *Submission 571*, p. 4; Mr Terence John Korn, Australian Floodplain Association, *Transcript of Evidence*, Dubbo, 16 February 2011, p. 14; Cockburn Valley Water Users, *Submission 140*, p. 2; Mildura's Future Water Group, *Submission 394*, p. 4.

- 6.10 Professor Chris Miller stated that delay could further exacerbate adverse socio-economic impacts:

...extending in some areas the implementation process by up to five years is just as likely to have the opposite effect of what is desired by creating a situation in which communities go in slow and gradual decline as people begin to exit in anticipation of the impact of the full Plan.²

- 6.11 Other arguments for not delaying the implementation are based on the need for certainty.³ Without this certainty communities do not have a realistic base to plan and invest for the future.⁴ Mrs Marilyn Danieli from Shepparton described a sentiment that was echoed throughout the inquiry:

We do not know where we are going because we do not know if we have a future. You cannot expect people to expand their businesses. You cannot have us trading water. You have to make a decision. We must know where we sit. And I do not believe it is acceptable to leave us swinging in limbo.⁵

- 6.12 The Committee is of the opinion that, overwhelmingly, the community wants a final but good plan delivered as soon as possible. This is supported in survey by an independent consulting firm undertaken in June and October 2010. Of those surveyed, it was found that 75 percent believe change is necessary to ensure that enough water is made available to the environment, the majority believe change needs to occur quickly:

Alongside this general agreement that change is needed to water management, there is also a sense of urgency amongst the population for that change to occur.⁶

- 6.13 The Committee is of the opinion that indefinitely delaying implementation of the Basin Plan will drive a further decline in investor confidence as outlined in Chapter 3. However, there is a case to delay the implementation of some state water resource plans.

- 6.14 While states have had a form of water resource plans for many years, these take on new meaning under the Water Act. Under s53 of the Act, each water resource area is to have an accredited water resource plan to be

2 Professor Chris Miller, Flinders University, *Submission 266*, p. 2.

3 Mr Peter Mogg, Murray Irrigators Support Group, *Transcript of Evidence*, Shepparton, 21 January 2011, p. 36.

4 South Australian Council of Social Service, *Submission 312*, p. 7.

5 Mrs Marilyn Danieli, *Transcript of Evidence*, Shepparton, 21 January 2011, p. 30.

6 Inovact Consulting, *Submission 400*, p. 7.

developed by the relevant state and accredited by the Commonwealth Water Minister. These plans are, in effect, the implementation of the Basin Plan and define how SDLs will be met.

- 6.15 Where operational water planning is in place, current plans are due to be replaced by water resource plans in compliance with the Act on their expiration. The Act also requires that state water resource plans be consistent with the version of the Basin Plan that existed two years prior to the state plans being made.⁷
- 6.16 The bulk of existing water plans in the Basin are due to expire in 2014 with the main exception being Victorian plans which are due to expire in 2019.
- 6.17 Many stakeholders suggested that the operability of current water resource plans should be aligned by extending the expiration of all plans to align with the Victorian plans in 2019. The Inland Rivers Network expressed concern about proposal to extend current arrangements, instead suggesting that Victorian plans should be brought forward to meet the 2014 date of the other Basin states:
- The argument for delaying NSW plans until 2019 takes the lowest common denominator approach and ignores the generous transition period already contained within Basin Plan processes.⁸
- 6.18 However, proposals to shorten the commencement date to 2014 raise the question of whether there this provides sufficient time for states to prepare water resource plans, given that the Basin Plan is unlikely to be finalised until 2012. The NSW Government noted that any 'delays in finalising the Basin Plan will have a material impact on the available timeframe for Basin States to prepare compliant Water Resource Plans'.⁹
- 6.19 The NSW Farmers Association submitted that the inequity in the implementation dates is the primary economic threat of the Basin Plan, arguing that this arrangement creates a significant competitive advantage with impacts occurring on the NSW side of the Murray River but not on the Victorian side for another five years.¹⁰
- 6.20 Under s49A of the Act, the MDBA is required to assess the impact of the Basin Plan after the first five years. If the Plan is made in 2012, this first review will be due in 2017.

7 *Water Act 2007*, section 56.

8 Inland Rivers Network, *Submission 409: Attachment 1*, p. 17.

9 NSW Government, *Submission 585*, p. 4.

10 NSW Farmers Association, *Submission 485*, p. 21.

- 6.21 With the Environmental Watering Plan coming into effect with the Basin Plan in 2012, by 2017 the CEWH, MDBA and state and territory water agencies would have five years experience with environmental watering. It is reasonable to expect that over this time they would gain a much better understanding, through monitoring and research of both successes and failures, of the amount of water that is needed.
- 6.22 The Committee is pleased to note the Murray Darling Basin Ministerial Council Communiqué of 27 May 2011 seeking that commencement dates be aligned to 2019.¹¹

Intergovernmental collaboration

- 6.23 As discussed in Chapter 4, it is clear that there was limited collaboration between the MDBA and state and territory agencies in the preparation of the Guide. The lack of engagement with the states by the MDBA in the preparation of the Guide was a consistent complaint from state and territory governments in their criticism of the Guide.¹²
- 6.24 The NSW Government recommends that:
- ...the Commonwealth Government initiates consultation with Basin States regarding the development of a multilateral implementation plan to support the agreed Commonwealth funded Murray-Darling Basin reforms via a cooperative Commonwealth/State approach (consistent with the IGA on Federal Financial Relations).¹³
- 6.25 The then NSW Minister for Water, the Hon. Phillip Costa MP referred to a desire for a coordinated approach in terms of timing, actions and expectation:
- This is a complex task ahead of us. We see that it is important that there is harmonisation between the states in terms of timing and expectations over a period. There is some differential, for example, between New South Wales and Victoria which has caused some

11 Murray-Darling Basin Ministerial Council, *Communiqué*, 27 May 2011.

12 The Hon. Paul Caica, Minister for the River Murray, South Australia, *Transcript of Evidence*, Canberra, 25 February 2011, pp. 25-26; The Hon. Kate Jones, Minister for Environment and Resource Management, Queensland Government, *Transcript of Evidence*, Brisbane, 17 March 2011, p. 5-6; The Hon. Phillip Costa, Minister for Water, New South Wales Government, *Transcript of Evidence*, Canberra, 9 February 2011, pp. 21-22; The Hon. Simon Corbell, Minister for the Environment, Climate Change, Energy and Water, Australian Capital Territory Government, *Transcript of Evidence*, Canberra, 23 February 2011, pp. 2-3; Private meeting with the Hon Peter Walsh, Minister for Water, Victorian Government, 30 March 2011.

13 NSW Government, *Submission 585*, p. 36.

angst in our community. We need to ensure that there is an engagement process and an implementation process that harmonises what we do in each of the states at the same time.¹⁴

6.26 It is apparent to the Committee that a constructive and cooperative approach to the development, transition and implementation of the Basin Plan is needed in order to achieve the outcomes most agree are necessary. All governments involved need to work cooperatively together if the Basin Plan is to succeed in finding a sustainable balance between human use of water and the health of the river systems.

6.27 This will be an ongoing process. As Mr David Harriss, Deputy Director-General and Commissioner of the NSW Office of Water, pointed out, the Basin Plan, like any resource planning will involve reiteration and regular review:

In the development of our water-sharing plan process, we said, 'The water-sharing plan is not the be all and end all for all time; at the end of 10 years we're going to have another iteration of water-sharing plans, and we want to then work out if we need to recover any more water for the environment should there be limits on that sort of recovery.'¹⁵

6.28 Achieving the successful involvement of communities and collaboration with state and territory agencies in the implementation of the Basin Plan and state water resource planning will help to build strong relationships and respect that will be beneficial in future water planning processes.

6.29 The responsibility for implementing the Basin Plan does not fall entirely to the MDBA and the Commonwealth Government. The states and the ACT have a significant role to play. However, because of the complex partnerships involved, there is a critical need for a clear implementation plan to be developed.

Recommendation 17

The Committee recommends that the Commonwealth Government fund the development of a plan, in partnership with the States and Australian Capital Territory, for the implementation of the Basin Plan.

14 The Hon. Phillip Costa, Minister for Water, New South Wales Government, *Transcript of Evidence*, Canberra, 9 February 2011, p. 36.

15 Mr David Harriss, Deputy Director-General and Commissioner, New South Wales Office of Water, *Transcript of Evidence*, Canberra, 9 February 2011, p. 18.

- 6.30 The Basin Plan is essentially implemented through state and territory water resource plans which should be developed in close consultation with Basin communities. As such, the Basin Plan will succeed or fail on the strength of its implementation and the ability of governments to work together and with Basin communities.
- 6.31 It is also clear that water resource plans need to be developed in a cooperative model that incorporates the views of regional stakeholders.

Recommendation 18

The Commonwealth Government, through the Council of Australian Governments, seek agreement with Basin states on a cooperative model for developing water resource plans in which the Murray-Darling Basin Authority, the Commonwealth Environmental Water Holder and state and territory water agencies sit together with regional stakeholders to develop each water resource plan.

Environmental water planning

- 6.32 Under s28 of the Act an Environmental Watering Plan must be developed. This plan is to articulate how environmental water will be sourced and used to benefit the biodiversity of the Basin.
- 6.33 The development and implementation of the Environmental Watering Plan was yet another cause for concern raised throughout the inquiry. These concerns arise from a lack of detail provided in the Guide on the environmental watering plan and how and where the water would be used. As Murray Irrigation stated:
- ...the Basin Plan needs to be built on trust and that, along with an Environmental Watering Plan, is the main ingredient lacking in the process to date.¹⁶
- 6.34 The Victorian Farmers Federation articulated some of the frustration about a lack of clarity on the environmental watering plan:
- The Guide has not provided a detailed watering plan nor provided sufficient clarity around the environmental outcomes to be achieved. The premise that returning 60 to 80 percent of pre-

¹⁶ Murray Irrigation, *Supplementary Submission 440.1*, p. 2.

development flows to the system is needed to achieve the required environmental outcomes does not allow a considered and rational discussion on treating key environmental assets and key environmental functions to occur with the managers of the systems; the States.

The first step in addressing this is to reset the plan and start an iterative process where environmental watering needs and efficiency gains are examined and tested to develop an environmental watering plan that meets the environmental needs as effectively as possible and balanced with the socio-economic impacts of less water for rural communities.¹⁷

- 6.35 Ms Sally Dye from Deniliquin expressed similar frustration with the lack of detail on the use of water once it has been transferred out of productive use:

Key Environmental assets need to be determined and justified prior to any suggested purchase of consumptive water for an environment that may not need it. It is idiocy to announce proposed SDL's without having any clear and transparent validation of watering requirements of the identified assets by an Environmental Water Management Plan. This should have been done to allow cross examination of the environmental watering requirements and provide a robust environmental watering account encompassing engineering solutions for the environmental sites with state of the art works and measures to ensure every gigalitre is in fact required.¹⁸

- 6.36 Ms Kirsty Bartrop from Griffith expressed her hope that in justifying the amount of water needed for the environment, the Guide would have provided detail on how environmental water would be used:

I read the plan in eagerness to understand how the MDBA proposes that the 3 000 – 7 600 GL of water would be utilised for the environment. I am keen to understand what flow rate is required to water the environment, what volumes are to be delivered to where and when would this be conducted. I am interested in how the water will be delivered to the sites that are deemed as in need of this additional water. I was terribly let down when I read that none of this detail is included as the MDBA write

17 Victorian Farmers Federation, *Submission 395*, p. 25.

18 Ms Sally Dye, *Submission 319*, p. 1.

on page 163 that the states within the Murray-Darling Basin will determine the priorities of the watering plan.¹⁹

- 6.37 The lack of a detailed and prescriptive environmental watering plan in the Guide was not an oversight. As Mr Rob Freeman, former Chief Executive of the MDBA, explained, such a plan would not be practical given the need for flexibility and respect for the role of state and territory governments in the management of environmental sites:

People are looking for a lot of detail in the environmental water plan, yet it must be principles based. We cannot put out a prescriptive environmental water plan. It must provide flexibility to allow, for instance, the Commonwealth Environmental Water Holder to trade water out of a catchment that is well watered because it has rained in that catchment, and acquire water in a dry catchment. So it has to be principles based, but there was almost universal feedback that people are looking for something with more detail than the principles we outlined.²⁰

- 6.38 Mr Freeman conceded that the MDBA could have set out some indicative case studies showing how an Environmental Watering Plan might operate using an actual scenario over five year period or so to help people understand what was being proposed:

That has driven the authority to consider: is there a communication document that sits below a principles based environmental watering plan that would describe how it might have been done, looking back? So, say, 'For this five-year or 10-year period, this would have been an appropriate environmental water plan.' It is an application of the principles. We are working through that issue, but it is a big challenge. People are looking for detail.²¹

- 6.39 From the evidence put to the Committee, it is apparent that the failure of the MDBA to provide more detail on how environmental water would be used, left communities wondering how the environmental water requirements were determined and how the water is going to be used. As Murrumbidgee Irrigation suggested that:

The Guide does not sufficiently specify targets for individual environmental assets to enable stakeholders to understand the

19 Ms Kirsty Bartrop, *Submission 238*, p.2

20 Mr Rob Freeman, Chief Executive, Murray Darling Basin Authority, *Transcript of Evidence*, Canberra, 25 March 2011, p. 80.

21 Mr Freeman, *Transcript of Evidence*, 25 March 2011, Canberra, p. 80.

vision or to make an environmental manager accountable for performance. There is no pathway for targets to meet objectives.²²

- 6.40 The question of how the MDBA determined the environmental water requirements and therefore the proposed SDLs demonstrates a lack of clarity around the methodology used and the nature of the environmental watering plan. The Committee also heard dissatisfaction with the apparent lack of sophistication with the methodology. These concerns, along with questions about the science used, undermined confidence in the Guide and the proposed SDLs.²³ Significantly, this was a particular concern for the states and the ACT.
- 6.41 A prescriptive environmental watering plan would be an enormous document that would be inflexible and difficult to implement. However, in order to gain support needed for a future Basin Plan, further detail must be provided on what, where, when and why water is needed for the environment and how it would be delivered.
- 6.42 While the Committee understands the complex nature of the processes and responsibilities around environmental water planning and use, Basin communities deserve more information if they are to be part of the implementation of the Basin Plan.
- 6.43 The community does not need a prescriptive environmental watering plan in the first instance, but it does need assurance that environmental water is to be managed in an efficient and accountable way. This may be through a set of examples provided to each catchment about how an environmental watering plan may be implemented.

Recommendation 19

The Committee recommends that the Commonwealth Government clearly communicate to Basin communities the purpose of the Environmental Watering Plan and how it would be implemented at a regional level.

22 Murrumbidgee Irrigation Ltd, *Submission 419*, p. 5.

23 Risorsa Group, *Submission 429*, p. 2; National Irrigators' Council, *Submission 189*, pp. 24-25; United Dairy Farmers of Victoria District Council 3, *Supplementary Submission 530*, p. 15; Mr Stewart Ellis, Chairman, Murray Irrigation Ltd, *Transcript of Evidence*, Deniliquin, 24 January 2011, p. 17.

Commonwealth Environmental Water Holder

- 6.44 The Committee heard concerns about the Commonwealth Environmental Water Holder (CEWH) and the use of environmental water more generally. These concerns focussed on two points:
- a perceived lack of transparency and accountability; and
 - a lack of experience and technical capacity to deliver on the environmental objectives.
- 6.45 The CEWH was established in 2008 under the Water Act with responsibility to actively manage water as efficiently as possible in accordance with the environmental watering plan when it is finalised.²⁴
- 6.46 In a 2010 report on the Government's use of the market to recover water for the environment, the Productivity Commission found that current arrangements are desirable in providing a closer focus on a transition to a Basin Plan, including efficiency advantages in having the CEWH in the same organisation as the buyback and infrastructure efficiency programs.²⁵
- 6.47 However, the Productivity Commission also found problems with the current arrangements due to the lack of transparency and capability and this is consistent with concerns held in Basin communities.

Accountability and transparency of the Commonwealth Environmental Water Holder

- 6.48 The Committee heard widespread concerns that the operation of the CEWH, and the management of environmental water, is not as accountable as the management of irrigation water. As Harold Clapham of Mainland Finance explained:

Why do we have a system where, if you are a commercial producer of water, you have to pay for it, you have to be accountable for it, you have to meet a standard, but then on the other side we send hundreds and hundreds of thousands of megalitres back to the environment with no form of commercial accountability, with no money available to improve the

24 Robinson, Mr Ian, Commonwealth Environmental Water Holder, SEWPAC, *Transcript of Evidence*, Canberra, 9 February 2011, p. 15.

25 Productivity Commission 2010, *Market Mechanisms for Recovering Water in the Murray-Darling Basin*, pp. 211-12.

infrastructure and with no accountability to those communities that are most affected by those environmental flows? If you were sensible about it, you would make the users of environmental water as accountable as the users of commercial water.²⁶

6.49 On agreeing to the National Water Initiative, states and territories committed to the establishment of effective and efficient management and institutional arrangements to ensure the achievement of the environmental and other public benefit outcomes. This included ensuring that environmental water managers are accountable for the management of environmental water and the achievement of environmental outcomes tested by:

...periodic independent audit, review and public reporting of the achievement of environmental and other public benefit outcomes and the adequacy of the water provision and management arrangements in achieving those outcomes.²⁷

6.50 In a COAG agreement on water reform in the Murray-Darling Basin, Commonwealth, state and territory governments, agreed on a set of requirements for the use and management of environmental water including:

- transparent and independent decision making in the management of environmental water holdings;
- transparent accounting of environmental water use; and
- environmental water managers to be clearly accountable for operational decisions and outcomes.²⁸

6.51 Given that the Commonwealth is now the largest holder of environmental water, it is reasonable to apply these same standards of accountability and transparency on the CEWH.

6.52 Under current governance arrangements the CEWH sits as an independent statutory position within the Commonwealth Department of Sustainability, Environment, Population and Communities (SEWPAC) and is accountable to the public through parliamentary estimates processes, annual reporting and potential audit by the Australian National Audit Office. However, under current arrangements, the CEWH is also a

26 Mr Harold Clapham, Mainland Finance, *Transcript of Evidence*, Deniliquin, 24 January 2011, pp. 32-33.

27 National Water Initiative 2004, paragraph 79, p. 17.

28 Council of Australian Governments: *Intergovernmental Agreement on Murray-Darling Basin Reform*, July 2008.

senior executive overseeing a division within the Department. In his or her capacity as a member of the senior executive, the CEWH is responsible to the Minister through the departmental secretary.

6.53 Indeed when invited to appear before this Committee's inquiry, the CEWH chose to appear with SEWPAC.²⁹ The Committee regards this as an unacceptable blurring of these dual roles.

6.54 Mr Ian Wiskin, of Fifth Estate Consulting, also raised concerns about this dual role:

... I think that is where you have some management problems. You have SEWPAC on the one side and they actually sit on the same floor in John Gorton House. You have the Commonwealth water holder on one side of the floor and there is supposed to be this Chinese Wall between the water purchasing people on the other side of the floor. To me, once the water is acquired for an environmental purpose, why is SEWPAC the agency responsible for determining where that water goes? I would have thought that is the role of an authority or a delivery agency.³⁰

6.55 Industry stakeholders suggested that this arrangement has resulted in a lack of visibility of the CEWH to communities. The Deputy Chairman of the Australian Dairy Industry Council, Mr Robert Poole, stated:

We need a lot more detail about how the Environmental Water Holder is going to operate because irrigators really understand their market and their allocation system and they will want detail to have confidence in how this big unit holder is going to operate in the marketplace.³¹

6.56 It is clear that the current arrangements do not adequately address the commitments made by the Government in the 2008 inter-governmental agreement as:

- while accountability does exist, the arrangement is not transparent as the outcomes of such processes are not readily apparent to many outside of government;
- regardless of who holds the position, placing dual responsibilities on a single officer potentially compromises the independence of the position, and at very least, contributes a perception of a conflict of interest; and

29 *Transcript of Evidence*, Canberra, 9 February 2011

30 Mr Ian Wiskin, Fifth Estate, *Transcript of Evidence*, Canberra, 25 March 2011, p. 14.

31 Mr Robert Poole, Deputy Chairman, Australian Dairy Industry Council, *Transcript of Evidence*, Canberra, 2 March 2011, p. 5.

- with the inevitable increase in the complexity of the role of the CEWH with the implementation of the Basin Plan, the demands on the office will similarly increase.
- 6.57 Based on the need for greater transparency and the inevitable evolution of the role of the CEWH, it is apparent to the Committee that the way this office is currently constituted is inappropriate.

Capability of the Commonwealth Environmental Water Holder

- 6.58 Since its establishment, the environmental watering activities of the CEWH have been limited due to its small environmental water holdings (relative to its intended holdings) and low allocations during the recent drought. It is apparent from its annual reports that the CEWH has focussed on establishing the portfolio, internal processes and building relationships with state counterparts.³²
- 6.59 The Committee heard concerns about the ability of the CEWH as an institution to deliver on environmental objectives given the complexity and scale of the task.
- 6.60 For instance, Kirsty Bartrop from Griffith referred to the need for assurance that, if water is to be given up, that it will be used in accordance with the best possible science and to efficiently achieve real environmental benefits:
- ...we are seeing significant changes in water use efficiency through breeding programs and farming techniques being improved. This advancement in skill and technology needs to be continued and applied to the environmental watering plans where possible to maximise on our asset...³³
- 6.61 The role of the CEWH will be critical in the successful implementation of the Basin Plan and realising environmental objectives. Community confidence in the capability and governance of the CEWH as an institution is essential to its success and the acceptance of the delivery of environmental water in the Basin.
- 6.62 In his capacity as the CEWH, Mr Ian Robinson stated that holding environmental water is in its early days:

32 SEWPAC, *Commonwealth Environmental Water: 2009-10 Outcomes Report*; SEWPAC, *Annual Report of the Commonwealth Environmental Water Holder 2009-10*.

33 Ms Kirsty Bartrop, *Submission 238*, p. 4.

...we are in our third year of use of water and in terms of managing held environmental water it is a new business for everyone. The Living Murray program was a few years ahead of that, so it would be right for me to say that managing held environmental water is a new field...³⁴

- 6.63 The current arrangements include the establishment of the Environmental Water Scientific Advisory Committee. This is a panel of scientific experts appointed to advise the CEWH and the Department on the use of water purchased. This committee comprises prominent scientists and experts in fields such as hydrology, limnology, river operations management, river and floodplain ecology and the management of aquatic ecosystems.
- 6.64 However, while such an expert panel is highly valuable, the CEWH needs a level of technical expertise to exist within its own staff. As an institution, the CEWH needs to have a strong scientific and engineering underpinning with a reputation of excellence in order to achieve its objectives. The Committee is also concerned that, once the CEWH has a full allocation of environmental water and is developing and delivering the environmental watering plan, that this be undertaken by a scientific agency, not a policy department.
- 6.65 Commonwealth departments are generally policy based organisations with a professional workforce enjoying a high level of mobility within the Australian Public Service. While this is well suited to the work of the public service in developing and delivering government policies it is not conducive to building a culture of technical expertise and excellence that would attract the right people with the necessary skills to deliver on the responsibilities that the CEWH will have in the near future.
- 6.66 The Committee is of the opinion that, as a matter of priority, that a dedicated agency, led by the Commonwealth Environmental Water Holder should be established. This agency should develop the capacity to attract and develop scientific and engineering expertise and is transparent and accountable.

34 Mr Ian Robinson, Commonwealth Environmental Water Holder, Department of Sustainability, Environment, Water, Population and Communities, *Transcript of Evidence*, Canberra, 9 February 2011, p. 12.

Recommendation 20

The Committee recommends that the Commonwealth Government establish a dedicated agency to be led by the Commonwealth Environmental Water Holder with a focus on:

- **developing the scientific and engineering expertise to deliver an efficient environmental watering plan;**
- **improving knowledge of the water needs of environmental assets and how best to manage them; and**
- **transparency and accountability to its key stakeholders, including the community.**

Improving the accountability of water reform

6.67 As discussed above, one of the key concerns about the management of environmental water once it is transferred from productive use is the accountability of the agencies managing its use:

I am yet to see any evidence of any accountability as to how that water will be used. How will that water be managed in the most efficient and most effective way possible?³⁵

6.68 The Water Act provides for accountability for the implementation of the Basin Plan by the MDBA and state and territory governments through an audit function fulfilled by the National Water Commission. This function is limited to a five yearly audit of the effectiveness of the implementation of the Basin Plan and the water resource plans.³⁶ Mr James Cameron, acting Chief Executive of the NWC provided the following explanation of the audit role of the NWC:

The audit process will require us to look at the full breadth of activities or matters covered by the plan both the obligations that are placed on state authorities in the development of their water resource plans and at the environmental water plan and the salinity plans under the Murray-Darling Basin Plan itself. It is our expectation that for a five-year program of audits we will undertake a series of rolling audits that will look at different

35 Mr Peter Corish, *Transcript of Evidence*, Goondiwindi, 16 March 2011, p. 28.

36 *Water Act 2007*, ss. 87-90.

aspects. Certainly, in the early audit processes one would expect that the focus of the audit would be very much on whether there are mechanisms and frameworks in place for the implementation of activities. We will have less experience of the operation of the plan to make significant comment about effectiveness issues.³⁷

6.69 In relation to the CEWH, Mr Cameron explained that the NWC will audit their performance in regards to the implementation of the Basin Plan:

We will be auditing relevant agencies to the extent that they are giving effect to commitments or mechanisms under the basin plan. So to the extent that the Commonwealth Environmental Water Holder is acting in effect to implement the basin plan or to implement water sharing plans that have been developed under the basin plan then they would be a party that we would certainly be looking at.³⁸

6.70 The Committee heard a need for greater clarity on what the NWC's role is and a desire for more accountability, not just on the implementation of the Plan, but on the transitional arrangements. Mr Daniel O'Brien, Chief Executive Officer of the National Irrigators Council stated:

I guess there is a question at the moment as to what the NWC's role is. They are facing a sunset clause shortly. I would have thought that it could play a role in keeping governments and people like the MDBA honest in what they are doing and whether they are meeting their commitments.³⁹

6.71 It is apparent that a higher level of accountability and transparency is needed across all aspects of the implementation of the Basin Plan and related activities of relevant governments. The extent to which the NWC's new remit will achieve this is unclear, but it is likely that it will not cover the full breadth to include associated activities of government such as the buyback and irrigation efficiency programs.

6.72 The Committee acknowledges that there is a level of accountability built into water reform processes through the existing government accountability and reporting mechanisms and the new functions for the NWC under the Water Act. However, these mechanisms may not adequately deliver the transparency expected by the community.

37 Mr James Cameron, Acting Chief Executive Officer, National Water Commission (NWC), *Transcript of Evidence*, Canberra, 2 March 2011, p. 14.

38 Mr Cameron, NWC, *Transcript of Evidence*, Canberra, 2 March 2011, p. 14.

39 Mr Daniel O'Brien, Chief Executive Officer, National Irrigators Council, *Transcript of Evidence*, Canberra, 25 March 2011, p. 55.

- 6.73 The accountability processes need to be formalised and consolidated into one process that is clearly accessible by people living and working in the areas most affected by the reform process.
- 6.74 As this report notes, the reform process that is occurring in the Basin is about more than just the Basin Plan. At the core, the reform is a process that has been occurring for several decades to bring about major change in the way we manage our natural resources, build sustainable communities and care for the environment. It is also about how governments, industries and communities travel together with minimal cost to the communities of the Basin. A comprehensive accountability framework should reflect this totality.
- 6.75 The water reform process will ultimately see several billions of dollars of taxpayers' money transferring billions of litres of water from irrigation use to the environment. There is an obligation on government to account for how both the money and water holdings are being used. Whether its money or water, the community has a right see that it is being used as efficiently and effectively as possible and objectives are being met.
- 6.76 The Committee considers that this role should be undertaken by a statutory authority responsible for auditing the progress of the Basin Plan, the activities of the Commonwealth Environmental Water Holder and the national water fund, proposed in Chapter 5.
- 6.77 The Committee considers that the National Water Commission should be charged with this responsibility. The agency should be responsible for auditing and reporting on:
- the management and use of environmental water by the Commonwealth Environmental Water Holder and the manager of the proposed national water fund on an annual basis, including:
 - ⇒ the volume of water recovered for the environment;
 - ⇒ use of the proposed national water fund, including investment in irrigation efficiency and environmental works and measures;
 - ⇒ the use of environmental water including volume, location, timing and outcomes achieved; and
 - ⇒ entitlements and allocations purchased or sold, including location, timing, products (security and reliability), average long term volume and average value per megalitre; and

- the transition to and implementation of the Basin Plan, on a five-yearly basis, including:
 - ⇒ the efficacy of state water resource planning;
 - ⇒ Commonwealth investment in irrigation and environmental infrastructure projects;
 - ⇒ the accumulation of environmental water, including any water purchase programs;
 - ⇒ the impacts of government reform activities on the socio-economic wellbeing of communities;
 - ⇒ influence of government activities in the water market; and
 - ⇒ the use of environmental water and the achievement of environmental objectives.
- 6.78 It may be that it is appropriate to expand the role of the National Water Commission to take on these responsibilities, however, this agency must have a clear focus on reporting in a transparent and accessible way to stakeholders.
- 6.79 The Government should also consider proposing to Basin state and territory governments that this agency take on the role of auditing the operation of the Murray-Darling Basin Agreement.

Recommendation 21

The Committee recommends that the Commonwealth Government charge the National Water Commission with responsibility for auditing and reporting on:

- the management and use of environmental water by the Commonwealth Environmental Water Holder and the manager of the proposed national water fund on an annual basis, including:
 - ⇒ the volume of water recovered for the environment;
 - ⇒ use of the proposed national water fund, including investment in irrigation efficiency and environmental works and measures;
 - ⇒ the use of environmental water including volume, location, timing and outcomes achieved; and
 - ⇒ entitlements and allocations strategically purchased or sold, including location, timing, products (security and reliability), average long term volume and average value per megalitre.
- the transition to and implementation of the Basin Plan, on a five-yearly basis, including:
 - ⇒ the efficacy of state water resource planning;
 - ⇒ Commonwealth investment in irrigation and environmental infrastructure projects;
 - ⇒ the accumulation of environmental water, including any water purchase programs;
 - ⇒ the impacts of government reform activities on the socio-economic well being of communities;
 - ⇒ the influence of government purchasing activity on the water market; and
 - ⇒ the use of environmental water and the achievement of environmental objectives.

6.80 The interrelationship of the CEWH and the new agencies recommended in this report are discussed in the following Chapter.

Bringing it all together

- 7.1 The management of the Murray-Darling Basin and its productive regions has been a challenge since federation because of the multijurisdictional responsibilities and competing interests involved in sharing a resource and managing what is one of the most productive regions in Australia.
- 7.2 The Committee spent many months meeting with individuals, organisations, government departments and state, territory and federal ministers throughout the Basin.
- 7.3 In contrast to the hostile response received by the MDBA, the Committee was treated with a genuine level of respect and were welcomed by communities who were most willing to engage with, and make a positive contribution to, the issues facing the Basin. The Committee hopes this report meets their expectations in making an equally positive contribution to the future of the Basin.
- 7.4 The report makes a number of recommendations aimed at reforming the governance structures involved in Basin water management; it also recommends that the timeframes for water sharing plans be aligned to 2019, giving more time to ensure that this reform does not fail.
- 7.5 While the Committee can make no recommendations aimed at state governments, it respectfully suggests in the strongest terms that the states and territory waste no time and they work in partnership with each other, the Commonwealth and local communities to ensure that this plan is successful.

A focus on the community

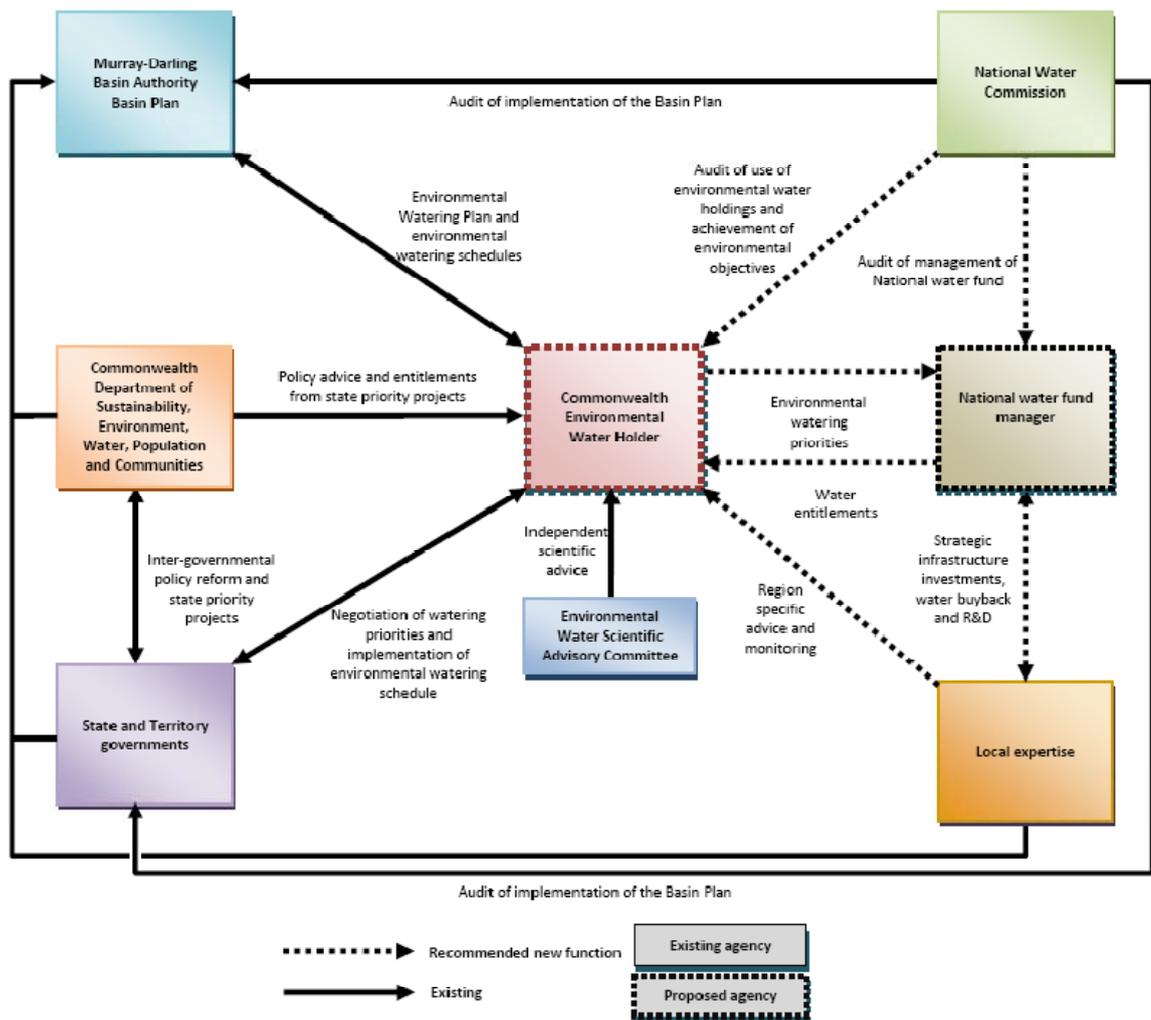
- 7.6 The report acknowledges that the release of the Guide has had a significant impact on Basin communities. It has caused stress and distress in communities that have been dealing with, amongst the many pressures inherent in small farming, a decade of drought and devastating floods.
- 7.7 The presentation of the Guide contained many failures and yet the Committee still found communities willing to engage, be consulted with and contribute to a Basin Plan. Communities want a Basin Plan, but they want a Plan that acknowledges them as a critical part of the Basin.
- 7.8 The report makes a series of recommendations aimed at improving engagement with Basin communities. It also recommends that Basin community plans be developed that provides a structural adjustment package, where required, to support communities or individuals to adjusting to new ways of managing water.

Institutional reform

- 7.9 In order to ensure that this reform is effective and community-focussed, there is a need to significantly overhaul how environmental water is sourced, managed and accounted for, then monitored.
- 7.10 This report includes a series of recommendations proposing governance and institutional arrangements relating to the transition and implementation of the Basin Plan, including:
- the establishment of a national water fund;
 - the establishment of a public company to manage the national water fund to acquire water for the Commonwealth environmental water holdings through investment in irrigation efficiency projects and strategic water purchases;
 - establishment of an independent agency, led by the Commonwealth Environmental Water Holder;
 - charge the National Water Commission to audit the progress and annual activities associated with national water reform.
- 7.11 These offices and agencies need to work together to achieve water reform outcomes in a coordinated and integrated manner. Figure 7.1 sets out the proposed new governance and institutional arrangements in the light of

the recommendations made in this report. The current and proposed governance models are also included in Appendix G.

Figure 7.1 Proposed new governance and institutional arrangements



Roles and relationships of each agency

Murray-Darling Basin Authority

7.12 This report does not recommend any substantial change to the MDBA, though, in order to rebuild community confidence in this organisation, emphasis should be placed on its strong technical background and science and engineering foundations. The best role for the MDBA is in research, management of river operations, the provision of robust technical advice

to other Commonwealth, state and territory agencies involved in the management of the water resources of the Murray-Darling Basin.

- 7.13 As provided for in the Water Act, the MDBA should continue to play a key role in the development and implementation of the Environmental Watering Plan in cooperation with state and territory water agencies and the reformed Commonwealth Environmental Water Holder (CEWH).

National Water Fund Manager

- 7.14 Chapter 5 recommends the establishment of a national water fund managed by government owned corporation similar to the Water for Rivers model. This organisation should be a partnership with the Commonwealth, state and territory governments as shareholders.
- 7.15 The water fund manager would be responsible for meeting the needs of its singular client, the CEWH, and delivering on other objectives as determined by its shareholders. These may include:
- acquiring water for the Commonwealth environmental water holdings through, for example:
 - ⇒ identifying and implementing water saving projects;
 - ⇒ identifying and implementing environmental works and measures;
 - ⇒ strategic purchase of water entitlements; and
 - ⇒ purchase of annual water allocations to complement the Commonwealth environmental water holdings when needed.
 - selling water entitlements on behalf of the CEWH as required to optimise its water holdings;
 - selling annual water allocations determined by the CEWH to be surplus to its needs; and
 - investing in research and development to improve irrigation efficiency.
- 7.16 The acquisition of water for the CEWH would fulfil the purpose of the current investments under the Government's Water for the Future programs, that is: assisting with the transition from the current level of diversion to the SDLs while recovering water for the environment. However, delivering it through a government owned corporation provides for a much more flexible approach that can better identify and enable win-win solutions.

- 7.17 The Water for Rivers model as outlined in Chapter 5 has demonstrated a capacity to find solutions through partnerships with individual irrigators, infrastructure providers and trusts, state water corporations and state and territory governments alike.
- 7.18 It may be appropriate for the proposed corporation to hold a modest portfolio of water entitlements from around the Basin. The annual allocations derived from these entitlements may be:
- provided to the CEWH to complement its holdings to assist in meeting the requirements of the Environmental Watering Plan in a given year and particular part of the Basin; or
 - sold on the allocations market for use in irrigation if determined by the CEWH to be surplus to its needs in a given year or particular part of the Basin.
- 7.19 If this model is adopted, the Government should consider the potential for the operating costs of the corporation to be sourced through the above activities in the water market. While a cost recovery model is attractive, the Committee has some reservations concerning how such an arrangement may be implemented to avoid market distortions. As such, negative impacts on the market should be managed through limits on the way the fund manager operates in the water market, for example limits in a given region or catchment on: the size of trades; volume of water traded in a season; or frequency of activity in the market.
- 7.20 The Committee is also concerned that the fund manager trading in times of drought may create a perception that the Government is profiteering at the expense of irrigators suffering drought conditions. To avoid such perceptions, in addition to the above suggested limits, the corporation should not deliver financial dividends to its shareholders.
- 7.21 For this organisation to be successful it would need to build strong working relationships with the regional agencies (for example, catchment management authorities, Regional Development Australia bodies), Commonwealth, state and territory water agencies, state and territory water corporations, irrigation trusts and relevant science communities. Its activities would be subject to scrutiny by the national water audit agency proposed in this report.

National Water Commission

- 7.22 The report recommends that the Government charge the National Water Commission (NWC) with auditing and reporting to government on the progress of water reform, including the transition and implementation of the Basin Plan.
- 7.23 The agency would have responsibility for auditing the relevant activities of the MDBA, the reformed CEWH and the proposed manager of the national water fund.
- 7.24 The NWC would be responsible for providing a high level of accountability and transparency through an annual report on the use of the national water fund and Commonwealth environmental water holdings and a five-yearly report on the progress of water reform and the implementation of the Basin Plan.
- 7.25 The Government should consider proposing to Basin state and territory governments that the NWC take on the role of auditing the operation of the Murray-Darling Basin Agreement.

Commonwealth Environmental Water Holder

- 7.26 This report recommends that the existing statutory position of the Commonwealth Environmental Water Holder (CEWH) be moved out of SEWPAC and supported by a dedicated, expert agency. This organisation should have a strong scientific basis, including the fields of hydrology, modelling and ecology.
- 7.27 The proposed CEWH would receive water entitlements acquired through the national water fund. It should build strong working relationships with the MDBA, proposed national water fund manager, state and territory water agencies, SEWPAC, relevant science communities and regional expertise based organisations.
- 7.28 The activities of the CEWH would be subject to annual review by the proposed national audit agency.

Commonwealth Department of Sustainability, Environment, Water, Population and Communities

- 7.29 The Commonwealth Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) would no longer be responsible for the 'Restoring the Balance' water purchase program. This program would be delivered by the newly established national water fund manager.

- 7.30 SEWPAC should continue to develop policy and advice for government, liaise with state agencies on progressing the shared water reform agenda and other policy related activities that it currently undertakes. The department would continue to be responsible for government programs that are not assumed by the proposed CEWH agency and the manager of the national water fund, however the bulk of its program delivery functions in relation to water would move to the national water fund.
- 7.31 The department should continue to implement the Government's involvement in the delivery of state and territory priority projects funded under the Sustainable Rural Water Use and Infrastructure Program as discussed in Chapter 5. However, the national water fund manager should be given the capacity to tender for funding under this program to deliver infrastructure works that it identifies will result in savings for the environment.

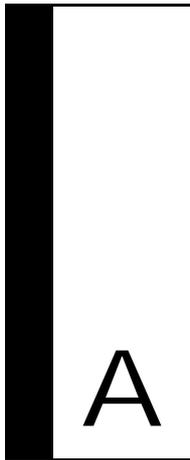
What happens next

- 7.32 Now that this report has been presented in Parliament, the Commonwealth Government is required to respond to the recommendations within six months.¹ Given the currency and magnitude of this issue, the Committee expects that the Government will respond to at least the key recommendations more promptly.
- 7.33 To create the draft Basin Plan, the MDBA must:
- develop a draft and put it out for a 16 week public consultation period;
 - present the draft to the Murray-Darling Basin Ministerial Council (comprising all the Basin states and the ACT). The Ministerial Council can request changes, but the MDBA is not obliged to incorporate these into the draft Plan;
 - present the draft Plan to the Commonwealth Minister responsible for water.
- 7.34 After the Minister receives the draft Plan from the MDBA, he or she must:
- consider the draft Plan and:
 - ⇒ adopt the draft, or;
 - ⇒ return the draft to the MDBA with directions for amendment.

¹ For further information on what happens following a committee inquiry see <aph.gov.au/house/info/infosheets/is04.pdf>.

- 7.35 Once the Minister has adopted the draft Plan, and before a Basin Plan can be finalised, it must be presented to the Parliament under the *Legislative Instruments Act 2003*.
- 7.36 It then becomes what is known as a 'disallowable instrument'. This means that for 15 sitting days of each house of the Parliament, the Basin Plan will be open to scrutiny and debate by Senators and Members. At the conclusion of this period, the Parliament has the power to refuse to allow the Basin Plan to come into force.
- 7.37 Every Senator and Member of Parliament has a responsibility to inform themselves about the issues facing the Murray-Darling Basin as they will collectively be responsible for the final Basin Plan. It is hoped that this report and its findings will assist in this task.

Tony Windsor MP
Chair
31 May 2011



Appendix A – List of submissions

- 1 Mr Sev Clarke
- 2 Mr Robert Lemon
- 2.1 Mr Robert Lemon
- 3 Mr Terry O'Brien
- 4 Mr John Laing
- 5 Mr Patrick Conrick
- 6 Clarence Environment Centre
- 7 Mr Walter Oechsle
- 8 Mr Neil Pilloni
- 9 Mr Roger Cooke
- 10 Mr Glenn Osboldstone
- 11 Ms Margaret Star
- 12 Cr William Wheeldon
- 13 Mr Geoff Baker
- 14 Mr Raymond Mathiesen
- 15 Mr Louis Smalley
- 16 Mr Ian Chalmers
- 17 Ms Juel Briggs
- 18 Kerry Barlow and Lorraine Barlow
- 19 Valley Watch Inc

- 20 Mr Geoff Tuckett
- 20.1 Mr Geoff Tuckett
- 21 Mr Colman Cohan
- 22 Ms Michelle Yates
- 23 Mr Michael Burke
- 23.1 Mr Michael Burke
- 24 Morris Lawton and Bev Lawton
- 25 Ms Pam Wettenhall
- 26 Kerry Hawker and William Royle
- 27 Ms Laurel Dunmore
- 28 Mrs Iris Everingham
- 29 Ms Anita Stanfield
- 30 Mr James Harris
- 31 Mr Geoff Moran
- 32 Ms Patricia Leeper
- 33 Mr Kevin Garland
- 34 Mr Leo Maher
- 35 Mr Steve Phillips
- 36 Mr James Dodd
- 37 Mr Andrew Keith
- 38 Mr Miles Harvey
- 39 Mr John Hancock
- 40 Mr Ralph Schneider
- 41 Mr John Moran
- 42 Mr Dick Hopley
- 43 Mr Warren Wood
- 44 Mr Ron Deacon
- 45 Mr James Woods

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- 46 Mr Matthew Brown
- 47 Mr Rennie Cacciola
- 48 Mr Dennis Inggs
- 49 Mr Greg Louttit
- 50 Mr Ronald Wilde
- 50.1 Mr Ronald P Wilde
- 51 Mr Ron Haack
- 52 Ms Jeanette Cunial
- 53 Mr Warwick Felton
- 54 Dr Diane Vance
- 55 Ms Jenni van Rooyen
- 56 Mr John Ranken and Norah Killip OAM
- 57 Mr Murray Lumley
- 58 Dr Catherine Pye and Dr Clive Carlyle
- 59 Ms Cheryl Stott
- 60 Ms Margot Marshall
- 61 Mr John Bisetto
- 62 CONFIDENTIAL
- 63 Mr John Pritchard
- 64 Dr David Leaman
- 65 Mr Roy Currie
- 65.1 Mr Roy Currie
- 66 Bruce McCollum and Sue McCollum
- 67 Mr Michael Hay
- 68 Ms Sharon Holmes
- 69 Ms Jan Illingworth
- 70 Mr Jon Ward
- 71 Mr Greg Went

- 72 Mrs Marilyn Danieli
- 73 Mr Rob Muir
- 74 Ms Aileen Bradley
- 75 Mr Jim Galletly
- 76 Mrs S Hamson
- 77 Mr Michael O'Leary
- 78 Mr Tony Cullenward
- 79 Professor George Williams and Jay Williams
- 80 Ms Shirley Taylor
- 81 Dr Clive Carlyle
- 82 Country Women's Association of NSW
- 83 Mr George Gordon
- 83.1 Mr George Gordon
- 84 Cottam Engineering
- 85 Finley Chamber of Commerce, Industry & Agriculture Inc
- 86 Ms Judith Murray
- 87 Mr Geoff Dunsdon
- 88 Mr John Dunmore
- 89 Pechelba Trust
- 90 Mr Craig Ashton
- 91 Mr Terry Bowring
- 91.1 Mr Terry Bowring
- 92 Mid-Western Regional Council and the Cudgegong Valley Water Users Group
- 92.1 Mid-Western Regional Council and the Cudgegong Valley Water Users Group
- 93 Mr Vin Byrnes
- 94 Mr David Milburn and Mrs Christine Milburn
- 95 NSW Irrigators Council

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- 96 Mr Allan Amos
 - 97 Prof Ian Falconer
 - 98 G Brown
 - 99 Mr Donald Ward
 - 100 Mr Peter Stenner and Mrs Rose Stenner
 - 101 Mr Peter Oataway
 - 101.1 Mr Peter Oataway
 - 101.2 Mr Peter Oataway
 - 102 South West Anglers Association Inc
 - 103 Michael Hawkins and Kate Hawkins
 - 104 Mr Robert Warren
 - 105 Mr Geoffrey Kiefel
 - 106 D&M Stockfeeds
 - 106.1 D&M Stockfeeds
 - 107 Paroo River Association Inc
 - 108 Mr Peter Millington
 - 109 Murray Valley Water Diverters Advisory Association (NSW) Inc
 - 110 Mr Simon Maynard
 - 111 Mr Eric Heidecker
 - 111.1 Mr Eric Heidecker
 - 112 Mr Don McCleary
 - 112.1 Mr Don McCleary
 - 113 Mr Michael Tonner
 - 114 Mrs Noela Golding
 - 115 Mr Gordon Smith
 - 116 Mr W Carr
 - 117 Mr Murray Williams
 - 118 Mr Donald Nixon

- 119 Miss Frances Corry
- 120 Mr Tom Loffler
- 121 The Nationals, Wentworth Carlwaa
- 122 Mrs B.M. Steward
- 123 Mrs Joan Pickersgill
- 123.1 Mrs Joan Pickersgill
- 124 Mrs Anne Muscat
- 125 Mr Ian Bowditch
- 126 Mr Gordon Fox and Mrs Barbara Fox
- 127 Mr Ron Cross
- 128 Mrs Elizabeth Cross
- 129 Mr John Evans
- 130 Mr David Read
- 131 Mr Ernie Tropeano and Mrs Virginia Tropeano
- 132 Mr Tim Lukins
- 133 Mr Michael Reid
- 134 One Oak Pty Ltd
- 135 Mr Tony Kennedy
- 136 Ms Sarah Dobney
- 137 Mr Roger Hall
- 138 Mr Peter Ravenscroft
- 139 Mr Henry Schneebeili
- 140 Peel Valley Water Users Association
- 141 Murray Shire Council
- 142 Mrs P J Hudson
- 143 Mr Ray Pugh
- 144 Mr Doug Fraser
- 145 Mr Vinoli Thampapilla

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- 146 Peel Valley Water Users Association
 - 146.1 Peel Valley Water Users Association
 - 146.2 Peel Valley Water Users Association
 - 147 Solartran Pty Ltd
 - 148 Ms Lorraine Edwards
 - 149 Mr Kel Robertson
 - 150 Mr Russell Fisher
 - 150.1 Mr Russell Fisher
 - 151 Mr Bill Bailey
 - 152 Mrs Frances Hutton
 - 153 Mr Barrie Dexter and Mr Donald J Macleod
 - 153.1 Mr Barrie Dexter and Mr Donald J Macleod
 - 154 Mr Win Hawkins
 - 155 Mr Gregory Ryan
 - 156 South Australia River Communities
 - 157 Mr Bill Murray
 - 158 Mr John Ibbotson
 - 159 Mr Michael Harris
 - 160 Soroptimist International
 - 161 Carrathool Shire Council
 - 162 Mrs Annette Commins
 - 163 Mr David May
 - 163.1 Mr David May
 - 164 Ms Megan Martin
 - 165 CapeAbility Consultants Pty Ltd
 - 166 Country Women's Association of NSW
 - 167 Mr Leslie Worland
 - 168 Robert Reid and Thelma Reid

- 169 Mr Lewis Wilson
- 170 Professional Fishermen's Association
- 171 Mr Donald J Macleod
- 172 Mr Adam Wettenhall
- 173 Australian Environmental Foundation
- 174 Mr John Williams MP
- 175 Wimmera Irrigators Association Inc.
- 175.1 Wimmera Irrigators Association Inc.
- 176 The Sandy Wallace Trust
- 177 Ms Judith Melville
- 178 Mrs Sophie Mirabella MP
- 179 Mr Garry Pagden
- 180 Dr Hania Lada
- 181 InterAg Services
- 182 Mr Andrew Parkes
- 183 Ms Deanne Vanderstok
- 184 Ms Lauren Picone
- 185 Ms Emma O'Brien
- 186 Ms Felicity Hennessy
- 187 Crichton Maxwell Pty Ltd
- 188 Wakool Shire Council
- 189 National Irrigators' Council
- 189.1 National Irrigators' Council
- 190 Stanislaw Pelczynski and Barbara Pelczynska
- 191 Ms Meredith Whykes-Tasker
- 192 Grampians Regional Development Australia
- 193 A3P
- 194 Ms Valerie Yule

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- 194.1 Ms Valerie Yule
 - 195 Leeton Shire Council
 - 196 Australian Dairy Industry Council Inc
 - 196.1 Australian Dairy Industry Council Inc
 - 197 Mr Craig Isherwood
 - 198 Loddon Shire Council
 - 199 Mr Leo Stevenson
 - 200 Cheryl Lonergan and Bernard Lonergan
 - 201 Mr Robin Dohnt
 - 201.1 Mr Robin Dohnt
 - 202 Campbell Partnership
 - 203 Mr Peter Flanagan
 - 204 RW Hamilton and GG Hamilton
 - 204.1 RW Hamilton and GG Hamilton
 - 205 Mr Stuart Le Lievre
 - 206 Mr Patrick Hayes
 - 207 Mr T F Robinson
 - 208 Walcha Council
 - 209 Mr John Brian
 - 210 Larry Williams and Narelle Williams
 - 211 Tumut River Conservation and Rehabilitation Inc
 - 212 Mr Jim Small AM
 - 213 Mr Harry Johnson
 - 213.1 Mr Harry Johnson
 - 213.2 Mr Harry Johnson
 - 214 Mr Chris Wharton
 - 215 Mr John Fenson
 - 216 Upper Catchment Water Committee

- 217 Mr Eugene Harris
- 218 Ms Gwen Laughlin
- 219 Ms Joy Cunningham
- 220 Mr Knox Durrant
- 221 Mr Trevor Randall
- 222 Brewarrina Shire Council
- 223 Mrs Dorothy Hargrave
- 224 Murray-Darling Basin Authority
- 225 Manuka Chaff Pty Ltd
- 226 Mr Alec English
- 227 Urban Taskforce Australia
- 228 Mr Bob Culhane
- 229 Mr Walter Grahame
- 230 Mr Peter Gately
- 231 Mr Bruce Lang
- 232 Mr Terence Dwyer
- 232.1 Mr Terence Dwyer
- 233 Mr Max Talbot
- 233.1 Mr Max Talbot
- 233.2 Mr Max Talbot
- 234 Mr Hector McDonald
- 235 Ms Jessica Stanford
- 236 Alexandrina Council
- 237 Mildura Development Corporation
- 238 Mrs Kristy Bartrop
- 239 Mr John Chant and Mrs Brenda Chant
- 240 Uniting Church of Australia, NSW and ACT Synod
- 240.1 Uniting Church of Australia, NSW and ACT Synod

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- 241 B&W Rural
- 242 Western Murray Irrigation Limited (WMI)
- 243 Victorian Farmers Federation, Corryong Branch
- 244 Mr Allan Haggarty
- 245 Mr Jason Richardson
- 246 Mr Peter Calabria
- 247 Bourke Shire Council
- 248 Environmental Defenders Office (Victoria)
- 248.1 Environmental Defenders Office (Victoria)
- 249 The Hon. Tony Catanzariti MLC
- 250 Ian Holloway and Alice Holloway
- 251 Mr David Holloway and Mrs Margaret Holloway
- 252 Mr Chris Beale
- 253 Mr Roderic Anderson
- 254 NSW Murray Darling Basin Catchment Management Authorities
- 255 Murrumbidgee Valley Food and Fibre Association
- 255.1 Murrumbidgee Valley Food and Fibre Association
- 256 Ms Kitty Schiansky
- 257 Mr Mark Coulton MP
- 258 The Jackson Group
- 259 Riverina and Murray Regional Organisation of Councils (RAMROC)
- 260 Mr Peter Davidson
- 261 Holbrook Seeds Pty Ltd
- 262 Des Morgan and H Morgan
- 263 Barossa Infrastructure Ltd
- 264 Australian Floodplain Association
- 265 Goondiwindi Regional Council
- 266 Professor Chris Miller

- 267 Mr Chris & Belinda Stillard
- 268 Mrs Lesley Fischer
- 269 Dr Paul Recher
- 270 Mallee Family Care
- 270.1 Mallee Family Care
- 271 Mr Geoff Croker
- 272 Mr Allan Lieschke
- 273 Mr Glen Andreazza
- 274 Clarence Valley Council
- 275 West Corurgan Private Irrigation District
- 275.1 West Corurgan Private Irrigation District
- 276 Ms Meredith Landale
- 277 CONFIDENTIAL
- 278 Costa Exchange Pty Ltd
- 279 Ms Kathleen McIntosh
- 280 Border Rivers Food and Fibre
- 280.1 Border Rivers Food and Fibre
- 281 Murrumbidgee Private Irrigators Inc
- 282 Mr Colin Bull
- 283 Quambone Pastoral Co. Pty Ltd
- 284 Dr Stephen Tynan
- 284.1 Dr Stephen Tynan
- 285 John Waters and Esther Waters
- 286 Wakool River Association
- 287 Mr Peter Randall
- 288 Wakool Landholders Association
- 289 FutureFlow
- 290 Mr William Henshall

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- 291 Berrigan Shire Council
- 292 Mr Peter Gill
- 293 Griffith Business Chamber
- 293.1 Griffith Business Chamber
- 294 Miss Laura Andrezza
- 295 The Rural City of Wangaratta
- 296 Mr John Jamison
- 297 Darling River Action Group Inc (DRAG)
- 298 Mrs Sue Ryder
- 299 Mrs Lorraine Elgar
- 300 Cr Norm Brennan
- 301 Auscott Limited
- 302 Mr John Groutsch
- 303 Mr Roger Shemilt
- 304 Namoi Water
- 304.1 Namoi Water
- 305 Mr Richard Lawson
- 306 Mr Keith Norman
- 307 Mr Peter Redfern
- 308 Renmark Paringa Council
- 309 High Security Irrigators Murrumbidgee
- 310 Ms Josephine Kelly
- 311 Mr Peter Serpell and Mrs Rhonda Serpell
- 312 South Australian Council of Social Service (SACOSS)
- 313 Mr Anthony Roddy
- 314 The Hon Bruce Scott MP
- 315 The Centre for Rural and Remote Mental Health
- 316 Lindsay Jarvis and Ann Jarvis

- 317 Environment Victoria
- 318 Mr Peter Cremasco
- 319 Ms Sally Dye
- 320 The National Climate Change Adaptation Research Facility - Water Governance Research Initiative
- 320.1 The National Climate Change Adaptation Research Facility - Water Governance Research Initiative
- 321 Mr Bill Hetherington
- 322 Sandor von Kontz
- 323 Professor Lin Crase
- 324 Riverina Wine Grapes Marketing Board
- 325 Hume Regional Development Australia Committee, Loddon Mallee Regional Development Australia Committee and Grampians Regional Development Australia Committee
- 326 Regional Development Australia - Mid North Coast NSW
- 327 Mr Ian Boyle
- 328 Goulburn Broken Catchment Management Authority
- 329 Woolloondool Farms
- 330 Mr Dudley Marrows
- 331 Ms Suzanne Robertson
- 332 Mr Wayde Bartlett
- 333 Michael Ryan and Susanne Ryan
- 334 Booth Associates
- 335 Gerry Vio and Giulia Vio
- 336 Mr Josip Dekanic
- 337 Mr Brian Walker
- 338 Mr J.C. Wiltjer
- 339 Mr Noel Hicks
- 340 Ms Berenice Murrie
- 341 Kevin Shield and June Shield

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- 342 Mr Richard Hazelton
- 342.1 Mr Richard Hazelton
- 343 Mr John McGrath
- 344 Ms Jean Gall
- 345 Mr David Gall
- 346 Ms Louise Gall
- 347 Mr Bruce Brill and Mrs Bruce Brill
- 348 Mr Alan McPhate
- 349 Victorian Farmers Federation, Kiewa Branch
- 350 Murray River Action Group Incorporated
- 350.1 Murray River Action Group Incorporated
- 351 Mr Stan Dineen
- 351.1 Mr Stan Dineen
- 352 Mrs Carol Oataway
- 353 Greater Shepparton City Council
- 354 Gordon Ball and Phyllis Ball
- 355 Paul Trevethan and JC Trevethan
- 356 Dr Barry Hancock
- 357 Mr Warren Muirhead
- 358 Mr Col Shephard
- 359 Raymond Zanatta and Karen Zanatta
- 360 Dr Michael Stewardson and Professor Edward Maltby
- 361 Mr Greg Northover
- 362 CONFIDENTIAL
- 363 Tom Mackerras and Wendy Mackerras
- 364 Australian Wetlands and Rivers Centre, The University of NSW
- 365 Colleambally Irrigation Co-operative Ltd
- 366 The councils of Albury City, Corowa, Greater Hume & Urana Shires

- 367 Mr Malcolm W Hill
- 368 Environmental Farmers Network
- 369 National Water Commission
- 369.1 National Water Commission
- 370 Citrus Australia Ltd
- 371 Hay Shire Council
- 371.1 Hay Shire Council
- 372 Regional Development Australia, Riverina NSW
- 373 JohnTregenza and Elizabeth Tregenza
- 374 Birds Australia and Birds Observation & Conservation Australia
- 375 Murrumbidge Shire Council
- 376 Broken Hill City Council
- 377 National Program for Sustainable Irrigation
- 378 CONFIDENTIAL
- 379 North East Catchment Management Authority
- 380 Mr Gilbert Silby
- 381 Municipal Association of Victoria
- 382 Mr John Burge
- 383 Lower Murray Water
- 384 Sunraysia Rural Counselling Service Inc
- 385 Ngarrindjeri Regional Authority Inc
- 386 Caroon Coal Action Group
- 387 Australian Conservation Foundation
- 388 National Parks Association of NSW, Armidale Branch
- 389 Ms Ruth Trigg
- 390 Ricegrowers' Association of Australia Inc
- 391 Gender Leadership and Social Sustainability Research Unit (GLASS),
Monash University
- 392 Mr Barrie MacMillan

-
- 392.1 Mr Barrie MacMillan
 - 393 Get Set Inc
 - 394 Mildura Future Water Group
 - 395 Victorian Farmers Federation
 - 396 Mr Laurence Lewin
 - 397 Mildura Rural City Council
 - 398 Murray Irrigators Support Group
 - 399 Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)
 - 399.1 Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)
 - 399.2 Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)
 - 400 Inovact Consulting
 - 401 Murray River Group of Councils and Greater Shepparton City Council
 - 401.1 Murray River Group of Councils and Greater Shepparton City Council
 - 402 Murray Darling Association Inc
 - 402.1 Murray Darling Association Inc
 - 403 AgForce Queensland
 - 404 Ms Meredith Landale
 - 404.1 Ms Meredith Landale
 - 405 Braithwaite and Co.
 - 406 Australian Centre for Cultural Environmental Research
 - 407 Local Government Association of NSW & Shires Association of NSW
 - 408 Water for Rivers
 - 408.1 Water for Rivers
 - 409 Inland Rivers Network
 - 410 Mr Denis Tinkler
 - 411 Albury City

- 411.1 Albury City
- 412 World Wildlife Fund (WWF) Australia
- 413 Balonne Shire Council
- 414 Clarence Valley Conservation Coalition Inc
- 415 Tandou Limited
- 416 Griffith City Council
- 417 Gwydir Valley Irrigators Association
- 418 Rubicon Water and University of Melbourne
- 418.1 Rubicon Water and University of Melbourne
- 419 Murrumbidgee Irrigation Ltd
- 419.1 Murrumbidgee Irrigation Ltd
- 420 NSW Business Chamber
- 421 South Australian Murray Irrigators Inc
- 422 CONFIDENTIAL
- 423 Mr Darryn Clifton
- 424 Mr Ian Mott
- 425 AgriFood Skills Australia
- 426 The Australian Workers' Union
- 427 Hume Regional Development Australia Committee
- 428 Split Rock Water Users Association
- 429 The Risorsa Group
- 430 Wentworth Group of Concerned Scientists
- 431 Mr Frank Conway
- 432 Indigo Shire Council
- 433 Seven Fields Pty Ltd
- 434 The Renmark Irrigation Trust
- 435 Condamine Alliance
- 436 Irrigation Australia Limited

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- 437 The Environment Institute
- 438 Mr George McGregor
- 439 Ms Sandra Williams
- 440 Murray Irrigation Ltd
- 440.1 Murray Irrigation Ltd
- 440.2 Murray Irrigation Ltd
- 441 Mr Rick Pickering
- 442 Water Resource Committee Benalla VFF Branch
- 443 World of Trees
- 444 Mr Leslie Earl
- 445 Goulburn Valley Environment Group
- 446 Sunraysia Citrus Growers Inc
- 447 Mr Terry Court
- 448 Mrs Rosemary Burn, Mr James Burn and Mr Phillip Burn
- 449 Australian Dried Fruits Association, Merbein Branch
- 450 Associate Professor Andrew Western
- 451 Mr Michael McCormack MP
- 452 Southern Riverina Irrigators
- 452.1 Southern Riverina Irrigators
- 453 Ms Ros Pragnell
- 454 Mr Peter Raffaele and Mr Michael Raffaele
- 455 Mr John Mills
- 456 Macquarie River Food and Fibre
- 456.1 Macquarie River Food and Fibre
- 457 Dr Guy Roth
- 458 Ray Haigh and Belinda Haigh
- 459 South Australian Murray Irrigators Inc
- 460 CONFIDENTIAL

- 461 Wentworth Shire Council
- 461.1 Wentworth Shire Council
- 462 Every Voice
- 463 Bogan Shire Council Nyngan
- 464 Murrumbidgee Groundwater Inc
- 465 Finnis Catchment Group
- 466 Mr Bruce Simpson
- 467 Conservation Council of SA
- 468 Riverina Eastern Regional Organisation of Councils
- 469 Lachlan Valley Water
- 469.1 Lachlan Valley Water
- 470 Tumbarumba Shire Council
- 471 Mr Bart Brighenti
- 472 Caroon Coal Action Group
- 473 Department of Agriculture Fisheries and Forestry
- 474 Murray Group of Concerned Communities
- 474.1 Murray Group of Concerned Communities
- 474.2 Murray Group of Concerned Communities
- 475 Mr Anthony McAlary
- 475.1 Mr Anthony McAlary
- 476 CSIRO
- 477 Mr Leon Hopwood
- 478 Swan Hill Rural City Council
- 479 Gannawarra Shire Council
- 480 River, Lakes and Coorong Action Group Inc (RLCAG)
- 481 Mr Don Woods
- 481.1 Mr Don Woods
- 481.2 Mr Don Woods

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- 482 Queensland Farmers' Federation
 - 483 South Australian Citrus Industry Development Board
 - 484 Robinvale & District Table Grape Growers Association
 - 485 NSW Farmers' Association
 - 486 Government of South Australia
 - 486.1 Government of South Australia
 - 487 Fifth Estate Consultancy Pty Ltd
 - 488 Business SA
 - 489 Hon Dean Brown AO
 - 490 National Farmers' Federation
 - 490.1 National Farmers' Federation
 - 491 Smart Rivers
 - 492 Riverina Citrus
 - 493 Regional Development Australia - Far West NSW
 - 494 Mr Gordon Nicholas
 - 495 Holm Trading
 - 496 Ms Louise Burge
 - 497 Mr Tim Whetstone MP
 - 498 Department of Regional Australia, Regional Development and Local Government
 - 499 G T Backhouse
 - 500 Mr Brendan Andreatza
 - 501 Miss Teneeka Andreatza
 - 502 Mr Peter Hanson
 - 503 CONFIDENTIAL
 - 504 Greater Hume Shire Council
 - 505 City of Wagga Wagga
 - 506 Mr Mark Gooden
 - 507 Jean Stimson

- 508 A Graham
- 509 Caromar Pty Ltd
- 510 Mr John Girdwood
- 511 Conargo Shire Council
- 512 Mr Ashley Thomson
- 513 Russell Henderson and Noelene Henderson
- 514 Macquarie Marshes Environmental Landholders Association
- 515 Mr Paul Kahl AM MBE
- 516 Mr Robert Caldwell
- 516.1 Mr Robert Caldwell
- 517 Namoi Councils
- 517.1 Namoi Councils
- 518 Mrs Julie Andreatza
- 519 Mr Kevin Banbury
- 520 Colleambally Central School
- 521 Victorian Farmers Federation, Sunraysia Branch
- 522 St Peter's Primary School
- 523 Mainland Finance
- 523.1 Mainland Finance
- 524 Palinyewah Producers
- 525 Sustainable Population Australia
- 526 ACT Government
- 527 Gilbert + Tobin Centre of Public Law
- 528 CONFIDENTIAL
- 529 Dr Bill Johnston
- 530 United Dairy Famers of Victoria
- 530.1 United Dairy Famers of Victoria
- 530.2 United Dairy Famers of Victoria

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- 531 Mr Graham McDonald
- 532 Department of Sustainability, Environment, Water, Population and
Communities
- 533 Mr Frank Malcolm
- 534 Mr Austin Evans
- 535 Ms Maria Riedl
- 536 Mr RG McComb
- 537 Familycare
- 538 Mr Richard Bull, Mr David Anthony and Mr Gerry Lawson
- 539 Mrs Liz Yelland
- 540 Mr Theodorus Bollen
- 541 Ms Jeanine McRae
- 542 Moira Private Irrigation District
- 543 Mr Paul McCormack
- 544 The Rotary Club of Yenda
- 545 NSW Regional Communities Consultative Council
- 546 Mr Bill Robertson
- 547 Winemakers' Federation of Australia
- 548 Shire of Campaspe
- 548.1 Shire of Campaspe
- 549 Point Sturt and Districts Landcare Group Inc
- 550 Australia Institute of Agricultural Science and Technology
- 551 Murray Goulburn Co-operative Co Ltd
- 552 Boating Industry Association of South Australia Inc
- 553 Regional Development Australia, Murraylands & Riverland Inc. &
Murraylands Tourism Partnership
- 554 National Association of Forest Industries
- 555 Northern Victoria Irrigators Inc
- 556 Dr Bruce Taylor

- 557 Mr Henry Jones
- 558 Managing the Murray Darling Basin from Lock Zero Advisory Group
- 559 Murray Valley Winegrowers' Inc
- 560 Mr Lloyd Thomson
- 561 Mr Barry Smith
- 562 Netafim Australia
- 563 Mr Jim McGann
- 564 Mr Brian Mills
- 565 Mr Jack Bennett
- 566 Ms Jennifer Hippisley
- 567 Mr Keith McRae
- 568 Ms Rachel Strachan
- 569 Ms Ruth Turpin
- 570 Craig Reynolds and Helen Reynolds
- 571 Deniliquin Council
- 572 Mrs Chris Sobey
- 573 Stewart Broome and Thelma Broome
- 574 Mr David Lindsay
- 574.1 Mr David Lindsay
- 575 Ms Betty Brady
- 576 Mr Brian Sainty
- 577 Youth Irrigation Network Inc - Murrumbidgee Branch
- 578 Mrs Frances Pietroboni
- 579 Ms Mary Quarisa
- 580 Ms Lisa Taliano
- 581 Mungindi - Menindee Advisory Council Inc
- 581.1 Mungindi - Menindee Advisory Council Inc
- 582 Orana Regional Organisation of Councils

-
- 583 Ms Katrina Hodgkinson MP
- 584 Mr John Fensom
- 585 NSW Government
- 586 Eastern Australia Agriculture
- 587 CONFIDENTIAL
- 588 Mr John Thompson
- 589 Australian Rain Technologies
- 589.1 Australian Rain Technologies
- 590 Mr Alistair Low
- 591 Ms Mary Chandler
- 591.1 Ms Mary Chandler
- 592 Mr Allan Jones
- 593 John Beer and Loraine Beer
- 594 Ms Jan Beer
- 595 CIT Water Exchange
- 595.1 CIT Water Exchange
- 596 Water Action Coalition
- 597 Franks Final Grade
- 597.1 Franks Final Grade
- 597.2 Franks Final Grade
- 598 Ms Acacia Rose
- 599 Mr Keith Molyneux
- 600 Mr John Bentley
- 601 Australian Bankers' Association Inc
- 602 Ms Jane Judd
- 603 Dr Rebecca Lester and Professor Peter Fairweather
- 604 NSW Aboriginal Land Council
- 605 Dubbo City Council

- 606 NSW Inland Forum
- 607 Mr Peter Bubb
- 608 Mr Peter Langley
- 609 Mr Bill Weakley
- 610 Ms Shirley Booth
- 611 Western Catchment Management Authority
- 612 Benerembah Warrawidgee Water Users Association (BWWUA)
- 613 Cooina Cotton Co
- 614 Queensland Conservation Council
- 615 City of Greater Bendigo
- 616 Mr Keith Dunlop
- 617 Mr Rob Foster
- 617.1 Mr Rob Foster
- 617.2 Mr Rob Foster
- 618 National Australia Bank
- 619 Lower Macquarie Community and Farmers Group Inc
- 620 IHD Pty Ltd
- 621 Ms Julie Washington
- 622 Riversands Vineyards Pty Ltd
- 623 CONFIDENTIAL
- 624 Queensland Department of Environment & Resource Management
- 625 Mr John Storer
- 626 CONFIDENTIAL
- 627 CONFIDENTIAL
- 628 Professor Snow Barlow, Dr Bob Farquharson and Professor John Langford
- 629 NSW Council of Freshwater Anglers Inc.
- 629.1 NSW Council of Freshwater Anglers Inc.
- 630 Mr Jim Crowe

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- 631 Murray Malee Local Learning and Employment Network
 - 631.1 Murray Malee Local Learning and Employment Network
 - 632 National Aglime Association Incorporated
 - 633 Victorian Limestone Producers Association
 - 634 Mr Timothy Miles
 - 635 Mr Rohan Collins-Roe
 - 636 Mr Peter Croft
 - 637 The Institute for Applied Ecology and The National Centre for Social and Economic Modelling - University of Canberra
 - 638 Mr Jeremy Morton
 - 639 Dr Jamie Pittock
 - 640 Central Downs Irrigators Limited
 - 641 DH Consulting
 - 642 Mr John Condon
 - 643 Dr John Cox



Appendix B – List of exhibits

- 1 Mr Ronald Wilde, *Information pack*, (related to Submission 50)
- 2 Mr Peter Ravenscroft, *Various items*
- 3 SAFE Committee
- 4 Mr Chris Wharton
- 5 Namoi Councils, *An Applied Example of a Irrigation Water Use Efficiency Project*, (related to Submission 517)
- 6 Namoi Councils, *National Sustaining Rural Communities Conference Paper (Section 3), 19-21 April 2010*, (related to Submission 517)
- 7 Professor Quentin Grafton, *Economic Costs and Benefits of the Proposed Basin Plan*
- 8 Auscott Limited, *Auscott Limited key points on MDBA Guide* (related to Submission 301)
- 9 Murray Irrigation Ltd, *Murray Irrigation Limited information pack*, (related to Submission 440)
- 10 Murray Darling Basin Authority, *Murray Darling Basin Authority information pack*
- 11 Berrigan Shire Council, *Strengthening Irrigation Communities - Synthesis Report - Stage 1: Where are we at now?* (related to Submission 291)
- 12 Finley Chamber of Commerce, Industry & Agriculture Inc, *Central Murray Cluster Group of Councils - Synthesis Report - Stage 1: Where are we at now?* (related to Submission 85)

- 13 Citizens Electoral Council of Australia, *What Australia Must Do to Survive the Depression (Book)*
- 14 NSW National Parks & Wildlife Service, *NSW threatened species*
- 15 Leeton Shire Council, *Information pack + DVD, (related to Submission 195)*
- 16 Murrumbidgee Private Irrigators Inc, *Balancing the protection of the Yanco-Colombo & Billabong Creeks' Riparian needs with the Community, (related to Submission 281)*
- 17 Mr Jim McGann, *Water of the Murrumbidgee Valley.... (related to Submission 563)*
- 18 Mildura Development Corporation, *Mildura Regional Economic Profile, (related to Submission 237)*
- 19 South Australian Murray Irrigators Inc, *Report to the Natural Resources Committee (Amendment to the 2002 River Murray Water Allocation Plan), (related to Submission 421)*
- 20 Mildura Rural City Council, *Mildura Social and Economic Impact of Drought - Final Report, September 2009, (related to Submission 397)*
- 21 Judith Stubbs & Associates, *Appendix 6: Mildura Rural City Case Study*
- 22 Marsden Jacob Associates, *Nyah to Border community profile (including Sunraysia, Victoria and NSW)*
- 23 Western Murray Irrigation Limited (WMI), *Information pack, (related to Submission 242)*
- 24 Murray Irrigators SA, *Photos*
- 25 Mallee Catchment Management Authority, *Mallee Irrigated Horticulture 1997-2009*
- 26 Mallee Catchment Management Authority, *Lindsay Island Stage 1 & 2 information sheet*
- 27 Lower Murray Water, *Sunraysia Modernisation Project Info Sheet, (related to Submission 383)*
- 28 Northern Victoria Irrigation Renewal Project, *Draft Guide to the Basin Plan*
- 29 Coliban Water, *Coliban Water info pack*
- 30 Australian Conservation Foundation, *Creating Jobs - Cutting Pollution (The Roadmap for a Cleaner, Stronger Economy)*
- 31 Australian Conservation Foundation, *Drowning in a hothouse - article*

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- 32 Mr Adrian Rizza, *Report to the MDBA*
- 33 Northern Victoria Irrigation Renewal Project, *Changing land use in the GMID 2006-2010*
- 34 Northern Victoria Irrigation Renewal Project, *Connections Program - information for farmers*
- 35 Goulburn Broken Catchment Management Authority, *Environmental Watering in Victoria 2008/09*
- 36 Goulburn Broken Catchment Management Authority, *Northern Region Sustainable Water Strategy*
- 37 Goulburn Murray Water, *Irrigation Modernisation Project 2008 - 2009*
- 38 Goulburn Broken Catchment Management Authority, *Environmental Watering in Victoria 2007/08*
- 39 Lachlan Valley Water, *Hilston Lower Lachlan Groundwater Community*
- 40 Greater Shepparton City Council, *Presentation*
- 41 Goulburn Broken Catchment Management Authority, *Information pack*
- 42 Mr Peter Walsh, *Photos*
- 43 National Water Commission, *Australian Water Markets Report 2009-10*, (related to Submission 369)
- 44 Darling River Action Group Inc (DRAG), *Problems & Solutions info book* (related to Submission 297)
- 45 PSI Delta, *Information brochure*
- 49 Mungindi - Menindee Advisory Council Inc, *Letter/emails*, (related to Submission 581)
- 50 Mr Wayne O'Mally, *Photos*
- 51 Mr Daniel Knapman, *Info sheets - paddockwise*
- 52 State Water Corporation, *Public hearing schedule*
- 53 Orana Regional Organisation of Councils, *Letter to MDBA* (related to Submission 582)
- 54 Lower Macquarie Community & Farmers Group Inc, *Response to MDBA issues paper, 27 March 2010*
- 55 Dubbo City Council, *Submission to MDBA*, (related to Submission 605)

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- 56 Judith Stubbs & Associates, *Supplementary material - discussion of ABS data for Murray-Darling Basin*
- 57 Government of South Australia, *Angas Bremer Irrigation Management Zone - 2009-2010 Annual Report*, (related to Submission 486)
- 58 Wyatt & Associates, *Presentation*
- 59 Tatura Milk Industries Ltd, *Submission to MDBA*
- 60 Mildura Rural City Council, *Mildura Social Indicators Report 2008*, (related to Submission 397)
- 61 Triple Helix Consulting, *Rethinking the Basin Plan*
- 62 Mr Walter Grahame, *Newspaper articles*, (related to Submission 229)
- 63 Bourke Shire Council, *Community Profile*, (related to Submission 247)
- 64 Bourke Shire Council, *2006 Census Data*, (related to Submission 247)
- 65 Border Rivers Food and Fibre, *Issue paper on the Mungindi End of System Flow Figure*, (related to Submission 280)
- 66 Mr Kim Bremner, *Information paper*
- 67 National Association of Forest Industries, *Socioeconomic impacts of plantation forestry in the South West Slopes region (NSW)*, (related to Submission 554)
- 68 National Association of Forest Industries, *Comparative research on water use by forests and other dryland crops*, (related to Submission 554)
- 69 National Association of Forest Industries, *Research Project Proposal: Water use by dryland crops, including forest plantations in the Murray Darling Basin*, (related to Submission 554)
- 70 Murrumbidgee Lachlan Group, Country Women's Association of NSW
- 71 Unknown, *Murray River at Albury Compiled by correlation to Doctors Point Table T110 February 1993*
- 72 National Irrigators' Council, *John Briscoe's submission to the Standing Committee on Legal and Constitutional Affairs of the Senate re: inquiry into provisions of the Water Act 07*, (related to Submission 189)
- 73 Professional Fishermen's Association, *A socio – economic evaluation of the commercial fishing industry in the Ballina, Clarence and Coffs Harbour regions*, (related to Submission 170)

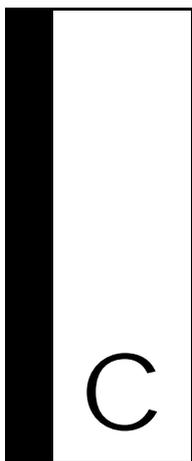
- 74 Wimmera Irrigators Association Inc., *Department of Sustainability, Environment, Water, Population & Communities response letter*, (related to Submission 175)
- 75 A3P, *Australian plantation industry National Water Policy*, (related to Submission 193)
- 76 The Hon. Tony Catanzariti MLC, *Adjournment speeches- Hansard extracts on Murray Darling Basin - Victorian Legislative Council*, (related to Submission 249)
- 77 CONFIDENTIAL
- 78 CONFIDENTIAL
- 79 Mallee Family Care, *Chances dare to dream - Making a difference in the Mallee DVD*, (related to Submission 270)
- 80 Ms Josephine Kelly, *Article titled "The river's needs are the only consideration" from The Australian Financial Review 16/11/2010*, (related to Submission 310)
- 81 The National Climate Change Adaptation Research Facility - Water Governance Research Initiative, L. Gooden & R. Ison, *'From water supply to water governance'*, in *More Than Luck: Ideas Australia Needs Now*, (related to Submission 320)
- 82 The National Climate Change Adaptation Research Facility - Water Governance Research Initiative, R. Ison & P. Wallis, *'Planning as performance: the Murray-Darling Basin Plan'*, in *Dialogue on the Murray-Darling Basin Plan*, (related to Submission 320)
- 83 The National Climate Change Adaptation Research Facility - Water Governance Research Initiative, *Water Governance Research Initiative, 'Strengthening Water Governance in Australia'*, *Water Policy Briefing No.1*, (related to Submission 320)
- 84 The National Climate Change Adaptation Research Facility - Water Governance Research Initiative, *Water Governance Research Priorities*, (related to Submission 320)
- 85 The National Climate Change Adaptation Research Facility - Water Governance Research Initiative, R. Ison, D. Russell & P. Wallis, *'Adaptive water governance and systemic thinking for future NRM Action research to build MDBA capability'*, (related to Submission 320)
- 86 The Councils of Albury City, Corowa, Greater Hume & Urana Shires, David W Hicks & Associates, *Strengthening Basin Communities Stage 1 & 2 Synthesis Report*, (related to Submission 366)

- 87 Victorian Farmers Federation, *Submission to the Murray-Darling Basin Authority on Guide to the proposed Basin Plan*, (related to Submission 395)
- 88 Inland Rivers Network, *Submission to the Murray-Darling Basin Authority in response to the Guide to the proposed Basin Plan*, (related to Submission 409)
- 89 AgriFood Skills Australia, *2010 Environmental Scan of the Agrifood Industries*, (related to Submission 425)
- 90 Murray Irrigation Ltd, Marsden Jacob Associates, *Benefit cost analysis of farm level investment in water saving - February 2009*, (related to Submission 440)
- 91 Macquarie River Food and Fibre, *Macquarie Marshes Pilot Project "Burrima" 3 Year Report 2005-2008*, (related to Submission 456)
- 92 ACT Government, Centre for International Economics, *Cost to the ACT of Proposed SDLs*, (related to Submission 526)
- 93 Queensland Department of Environment & Resource Management, *Letter to Minister Burke from Minister Robertson*, (related to Submission 624)
- 94 Mr Walter Morrison, *Submission to the Murray-Darling Basin Authority in response to the Guide to the proposed Basin Plan*
- 95 Mr Robert Lemon, *Coalition of the Willing: Reclaiming Australia's Sovereignty* (related to Submission 2)
- 96 Mr Walter Morrison, *1. Climate change and Emission trading schemes*
- 97 Murray Malee Local Learning and Employment Network, *MMLLEN submission to RMCG into the social and economic impact of the MDBA Guidelines*
- 98 Mr Tim Crawford, *Letter providing further information in regards to the Murray Darling Basin*
- 99 TAFCO Rural Supplies, *TAFCO submission to the M.D.B. Guide to the Proposed Plan*
- 100 TAFCO Rural Supplies, *The Myrtleford Chamber of Commerce and Industry Inc submission to the MDBA Guide to the Proposed Plan.*
- 101 Mr David Reid, *A submission to the Guide to the proposed Basin Plan-Volume 1*
- 102 Peel Valley Water Users Association, *Peel Valley SDL Proposal Murray Darling Basin Plan - March 2011*
- 103 Peel Valley Water Users Association, *A supplementary submission to the MDBA*, (related to Submission 146)

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- 104 Torrumbarry Reconfiguration and Asset Modernisation Strategy Committee, *A submission that has been prepared for the Murray Darling Basin Authority Guide to the Basin Plan*
- 105 Donald Crosthwaite and Pamela Crosthwaite OAM, *A submission to the MDBA Guide to the Proposed Plan*
- 106 Unknown, *The levees that could cost millions*
- 107 Lachlan Valley Water, *Hillston Lower Lachlan Groundwater Community*
- 108 Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), *The economic and social effects of the Murray-Darling Basin Plan: recent research and next steps*
- 109 Mr Harry Johnson, ASPLEY Special School, Kingfisher Recycling Centre, *Brochure*, (related to Submission 213.1)
- 110 Mr Terence Dwyer, *What should clean safe water cost?* (related to Submission 232.1)
- 111 Bourke Shire Council, *Seven solutions to address Darling River system management*, (related to Submission 247)
- 112 Bourke Shire Council, *Structural Adjustments for the Bourke Community to deliver social, economic and cultural offsets to address land use change at Toorale*, (related to Submission 247)
- 113 Bourke Shire Council, *Local community social and economic adjustment program to offset Environmental water buyback across the Murray Darling Basin*, (related to Submission 247)
- 114 John Waters and Esther Waters, *Letter to Hon Sussan Ley MP titled "My concern for the future of rural communities under the Guide to the Proposed Basin Plan"*, (related to Submission 285)
- 115 John Waters and Esther Waters, *Letter to Hon Sussan Ley MP*, (related to Submission 285)
- 116 Mr John & Elizabeth Tregenza, *Applying a localised Water Balance approach to estimate losses from Lake Alexandrina and Lake Albert for the years 1970 to 2006 - Discussion Paper*, (related to Submission 373)
- 117 Australian Conservation Foundation, *Priority works to increase the effectiveness and efficiency of environmental water delivery in northern Victoria*, (related to Submission 387)
- 118 CONFIDENTIAL

- 119 Australian Rain Technologies, *Request for trial funding of Atlant technology December 2010*, (related to Submission 589)
- 120 Ms Mary Chandler, *Submission to Murray-Darling Basin Authority 2010, Guide to the proposed Basin Plan: Overview, Murray-Darling Basin Authority, Canberra*, (related to Submission 591)
- 121 Ms Mary Chandler, *Email with two attachments*, (related to Submission 591)
- 122 Ms Mary Chandler, *Email with six attachments*, (related to Submission 591)
- 123 Ms Mary Chandler, *Email with four attachments*, (related to Submission 591)
- 124 Ms Mary Chandler, *Email with four attachments*, (related to Submission 591)
- 125 Ms Mary Chandler, *Email with single attachment*, (related to Submission 591)
- 126 South Australian Murray Irrigators Inc, *Submission to the Guide Proposed Basin Plan December 17 2010*,
- 127 South Australian Murray Irrigators Inc, *Submission to the Senate Standing Committee on Rural Affairs and Transport. The management of the Murray Darling Basin. December 14 2010*
- 128 NSW Council of Freshwater Anglers Inc., *NSW Draft Murray-Darling Basin Native Fish Strategy Action Plan 2011-2021*, (related to Submission 629)
- 129 John Beer and Loraine Beer, *Milk Processes- Murray Dairy Region Value Statement - Murray Dairy Milk Processors - Final Report - Submission to the Guide to the proposed Basin Plan*, (related to Submission 593)
- 130 Murray Darling Basin Authority, *Observed diversion data for the ACT*
- 131 CONFIDENTIAL
- 132 Ms Ruth Turpin, *Murray-Plains Division of General Practice annual report 2009-10*, (related to Submission 569)
- 133 Ms Ruth Turpin, *Murray-Plains Division of General Practice annual report 2008-09*, (related to Submission 569)
- 134 CONFIDENTIAL
- 135 CONFIDENTIAL
- 136 Goulburn Murray Water, *Email with five attachments*
- 137 NSW Government, *NSW Government response to the Guide to the proposed Basin Plan December 2010*, (related to Submission 585)
- 138 Mr Robert Vincin, *What if there was no river system - A Millennium Project*

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- 139 Western Catchment Management Authority, *Draft Report titled "Determining ecological meaningful water quality standards for rivers in the Western Catchment Area"*
- 140 Western Catchment Management Authority, *Draft Report titled "Establishing benchmarks and trajectories of change in inland wetland ecosystems"*
- 141 National Association of Forest Industries, *Email with four attachments*
- 142 Mr Michael Spinks, *Briefing paper from the Nimmie-Caira Landholders*



Appendix C – List of witnesses, hearings and inspections

This Appendix lists witnesses at public hearings and inspections that the Committee undertook between December 2010 and March 2011.

The Committee met with many more individuals and groups in its visits throughout the Basin than it is able to name. Sincere thanks is offered to all those who met with and hosted it throughout the inquiry.

Thursday, 16 December 2010 – Menindee Lakes

Inspection

- Lake Menindee
- Lake Pamamaroo
- Lake Cawndilla
- Tandou Ltd
- Packer's Crossing

With thanks to:

Staff of the Lower Darling Catchment Management Authority

Stan Dineen

Staff of Tandou Ltd

Friday, 17 December 2010 – Broken Hill

Inspection

- Mulga Creek Catchment Wetlands Project
- Stephen's Reservoir

Community meeting hosted by Broken Hill City Council

With representatives from:

Broken Hill City Council

Darling River Action Group

Far West Regional Development Australia

Country Energy

Monday, 17 January 2011 – Lower Lakes and the Coorong

Inspection

- Langhorne Ck
- Clayton
- Murray Mouth
- Hindmarsh Island
- Narrung, Lake Alexandrina and Albert
- The Coorong
- Camp Coorong
- Meningie

With thanks to:

Andrew Beal (SA Water)

Michael Cutting (SA Murray Darling Basin Natural Resource Management Board),

Cameron Welsh (SA Murray Darling Basin Natural Resource Management Board)

Bill Patterson

John Pargetter (Chair, Langhorne Creek Wine and Grapegrowers Association)

Henry Jones

Brenton Erdmann (SA Water Corporation)

Associate Professor David Paton (Adelaide University)

Tom Trevorror, Ngarrindjeri elder

Meningie community

Tuesday, 18 January 2011 – Murray Bridge

Public hearing

Individuals

Hon Dean Brown AO

Barossa Infrastructure Ltd

Mr Geoffrey Davis, Director/Company Secretary

Mr Paul Shanks, General Manager

Murray Darling Association Inc

Mr Ray Najar, General Manager

River Lakes and Coorong Action Group

Ms Elizabeth Tregenza, Secretary

Ms Ruth Trigg, Public Officer

Ms Corrie Vanderhoek, Member

Professor Diane Bell, Chair

South Australia River Communities

Mr Ben Haslett, Spokesman

Mr Gavin McMahon, Chairman

South Australian Council of Social Service (SACOSS)

Mr Ross Womersley

Dr Fiona Verity, Board of Management Member

The Environment Institute

Professor Mike Young, Executive Director

Wentworth Group

Professor Chris Miller

Community Statement Session

Anne Dunne, Every Voice

Allan Arbon, Mayor Murray Bridge City Council

Peter Smith

Bill Henshall, Chair, Meningie-Narrung Lakes Irrigators Association

Lesley Fisher, Meningie-Narrung Lakes Irrigators Association

Richard Reedy, Lower Murray Irrigators Association

Pamela Gillen

Des Wyatt

Tuesday, 18 January 2011 – Mildura**Inspection**

- Confluence of the Murray and Darling Rivers
- Pumping station

With thanks to:

Cr Margaret Thompson, Mayor, Wentworth Shire Council

Cheryl Rix, Western Murray Irrigation

Lower Darling irrigators

Wednesday, 19 January 2011 – Mildura**Public hearing****Citrus Australia Ltd**

Mrs Tania Chapman, Chair

Ms Judith Damiani, Chief Executive Officer

Lower Murray Water Murray Urban and Rural Water Corporation

Mrs Kay Martin, Deputy Chair

Mr Kevin Murphy, General Manager, Technical Services

Mr Michael Tilley, Chairman

Mildura Development Corporation

Mrs Anne Mansell, Chief Executive Officer

Mildura Future Water Group

Mr Mark McKenzie, Member

Mr Richard Mills, Chairperson

Mildura Rural City Council

Mayor John Arnold, Mayor

Mr Mark Henderson, Chief Executive Officer

Ms Toni Mottram, Project Officer

South Australian Murray Irrigators Inc

Mr David Ludas, Member

Mrs Caren Martin, Chairman

Sunraysia Citrus Growers Inc

Mr Matthew Cottrell, Director

Mr Vince DeMaria, Chairman

Mr David Stevens, Director

Sunraysia Rural Counselling Service Inc

Mr Andrew Forbes, Chairperson

Mr Graeme Loison, Executive Officer

Wentworth Shire Council

Mr Peter Kozlowski, General Manager

Cr Margaret Thomson, Mayor

Community Statement Session

Mary Chandler

Maria Reidel

Dudley Marrows

Danny Lee, Sunraysia Irrigators Council

Fiona Devalee, Chair, Chances for Children Program

Mark Mackenzie

Bill McClumpa

Jim Belbin

Ian Keens

Ron Mengler

Darren Calleson

Mike Early

Roger Drewitt

Inspection

- Sunbeam Dried Fruit Factory, Mildura
- Dried fruit property, Ilrymple

With thanks to:

Lower Murray Water

Mike Maynard, Manager and Chris Ellis, General Manager and staff,
Sunbeam Dried Fruit Factory

Ashley Johnson

Thursday, 20 January 2011 – Bendigo

Public hearings and inspections planned for this day in Swan Hill were cancelled due to floods in Northern Victoria. The Committee instead travelled to Bendigo and received briefings from:

John Wenske, Goulburn-Murray Water

Murray Smith, Northern Victorian Irrigation Renewal Project

Damien Wells, North-Central Catchment Management Authority

Melanie Tranter, North-Central Catchment Management Authority

Tim Shanahan, North-Central Catchment Management Authority

Matt Barden, Goulburn-Murray Water

From Coliban Water:

John Brooke, Chairman

Gavin Hamlin, Managing Director

Andrew Carns, Board Member

Andrew Skam, Board Member

Friday, 21 January 2011 – Bendigo

Public hearing

Australian Conservation Foundation

Dr Arlene Harriss-Buchan

Mr Simon O'Connor, Economic Adviser

Australian Network of Environmental Defenders Office

Mr Brendan Sydes, Chief Executive Officer

Ms Nicola Rivers

Environment Victoria

Ms Juliet Le Feuvre, Co-Manager, Healthy Rivers Campaign

Ms Kelly-Ann O'Shanassy, Chief Executive Officer

Environmental Farmers Network

Mr Ian Christoe

Mr John Pettigrew

Goulburn Valley Environment Group

Mr Terry Court, Vice President

Dr Peter Jerie, Committee Member

Victorian Farmers Federation

Mr Richard Anderson, Chair

Mr Andrew Broad, President

Ms Melanie Brown

Mr Graeme Ford, Executive Manager

Community Statement Session

Gordon Weller

Ken Pattison

Don Lawson

Jenny Dawson, Chair, Loddon-Mallee RDA

Peter Morrison

Friday, 21 January 2011 – Shepparton**Public hearing****D&M Stockfeeds**

Mr Robert Danieli, Director

Mrs Marilyn Danieli

Mr Wade Northausen, Employee

Mr Ken Pattison, Consultant

Greater Shepparton City Council

Mayor Geoff Dobson, Mayor

Mr Phil Pearce, Chief Executive Officer

Murray Irrigators Support Group

Mrs Wendy Buck, Facilitator

Mrs Susan Crowther, Guest Speaker

Mr Peter Mogg, Member

Mr John Padman, Member

Mr Kenneth Wood, Member

North East Victorian Catchments

Mayor Anthony Griffiths

Northern Victoria Irrigators Inc

Mr Barry Croke, Chairman

Rubicon Water

Mr David Aughton, Director

Mr Bruce Rodgers, Chief Executive Officer

The Rural City of Wangaratta

Mr Doug Sharp, Chief Executive Officer

United Dairy Farmers of Victoria

Mrs Natalie Akers, Secretary

Mr Daryl Hoey

Mr James McKeown, Committee Member

Mr Iwan Van Den Berg, Committee Member

Community statement session

Jan Beer

Sam Birrell

Paul Blackshaw

David Rush

Jeff Davy

Matthew Pryor

Ian Loddon

Frank Malcolm

Saturday, 22 January 2011 – Shepparton district

Inspection

- the Reynolds property
- the Bunbartha property
- the Craig property
- Barmah-Millewa Forest

With thanks to:

John Wenske, Manager Government Relations, Goulburn-Murray Water (GMW)

Carl Walters, Goulburn-Broken CMA

Matt Barden, Modernisation Manager GMW

Natalie Akers, United Dairyfarmers of Victoria

Peter Walsh, Futureflow

Craig and Helen Reynolds

Max Moore

Shepparton City Council

Sunday, 23 January 2011 – Deniliquin district

Inspection

- Murray Irrigation Ltd area of operations
- the Blenkiron property wetlands project
- Barham, briefing on the Koondrook-Perricoota forest
- Colligen Creek Station

With thanks to:

Murray Irrigation Ltd:

Stewart Ellis, Chair

Anthony Couroupis, General Manager

Jennifer McLeod, Executive Manager, Policy and stakeholders

Perin Davey, Government Relations

Neil Blenkiron

Murray Wetlands Working Group

Dennis Gleeson

Monday, 24 January 2011 – Deniliquin

Public hearing

Berrigan Shire Council

Ms Jo Ruffin, Community Planning Officer

Finley Chamber of Commerce, Industry & Agriculture Inc

Mr Rand Wilson, President

Mainland Finance

Mr Harold Clapham, Partner

Murray Group of Concerned Communities

Cr Norm Brennan

Cr John Bruce

Mr Bruce Simpson, Director, Agribusiness

Mr Lester Wheatley

Murray Irrigation Ltd

Mr Anthony Couroupis, General Manager

Mrs Jennifer McLeod

National Irrigators' Council

Mr Stewart Ellis, Chairman

Riverina and Murray Regional Organisation of Councils (RAMROC)

Cr Terry Hogan, Chairman

Mr Ray Stubbs, Executive Officer

Southern Riverina Irrigators

Ms Louise Burge, Member

Mr Ted Hatty, Chairman

Ms Monica Morona, Policy Officer

West Corugan Private Irrigation District

Mr Mike Duncan, General Manager

Community statement session

Brian Mitsch, Mayor, Deniliquin Shire

Peter Dwyer, Mayor, Hay Shire

Neil Pankhurst, Mayor, Campaspe Shire

Neil Eagle, Chair, Murray Valley Water Diverters

Allan Jones

Bill Hetherington

Chris Sobey

Ken Crossely

Malcolm Holm
Craig Ash
Gordon Ball
Peter Martin
Dennis Tinkler
Ian Boyle
Keith Rose, Moira Private Irrigation District

Tuesday, 25 January 2011 – Griffith

Public hearing

Individuals

Mr Jack Bennett

Colleambally Irrigation Co-operative Ltd

Mr John Culleton, Chief Executive

Mr Austin Evans, Senior Operations Engineer

Mr Henry Gardiner, Chair

Griffith Business Chamber

Mr Paul Pierotti

Mr Patrick Pittavino, Chairman

Griffith City Council

Mr Stephen Joyce, Economic Development Manager

Mr Michael Neville, Mayor

High Security Irrigators Murrumbidgee

Mr Brian Halse, Chief Executive Officer

Murrumbidge Valley Food & Fibre Association

Mrs Debbie Buller, President

Mr Thomas Marriott, Member

Mr Patrick Sergi, Member

Mrs Virginia Tropeano, Member

Murrumbidgee Groundwater Inc

Mr Richard Stott, Chairperson

Murrumbidgee Irrigation Ltd

Mrs Gillian Kirkup, Chairman

Mr Brett Tucker, Managing Director

Murrumbidgee Private Irrigators Inc

Mr Rel Heckendorf, Executive Member

Ms Jennifer Hehir, Chief Executive Officer

Mr Murray Shaw, Chairman

National Farmers' Federation

Mr Matt Linnegar, Chief Executive Officer

NSW Irrigators Council

Mr Andrew Gregson, Chief Executive Officer

Mr Mark Moore, Policy Analyst

Mr Colin Thomson, Chairman

NSW Regional Communities Consultative Council

Ms Lynda Summers, Chair

Riverina Citrus

Mr Frank Battister, Chairman

Mr Dominic Testoni, Chief Executive Officer

The Risorsa Group

Mrs Kaye Dalton, Managing Director

Wine Grapes Marketing Board

Mr Bruno Brombal, Chairman

Mr Brian Simpson, Chief Executive Officer

Community statement session

Brian Mills

Glen Isherwood, Citizens Electoral Council

Ron Pattison

Peter Ryrie

Tom Condon

Megan Martin, President, Leeton Chamber of Commerce

Teneeka Andrezza

Peter Knox

Ernest Kitta

Dr Stephen Tynan

Warren Muirhead

Kirsty Bartrap, Chair, Young Irrigation Network

Jim McGann

Jeanine McCrea

Wednesday, 9 February 2011 – Canberra**Public hearing****Department of Sustainability, Environment, Water, Population and Communities**

Dr Paul Grimes, Acting Secretary

Ms Mary Harwood, First Assistant Secretary, Water Efficiency Division

Mr Russell James, Assistant Secretary, Water Resources Branch

Mr Ian Robinson, Commonwealth Environmental Water Holder

Mr Tony Slatyer, Acting Deputy Secretary, Water Reform Division

NSW Government

Hon Phillip Costa, Minister for Water

Mr David Harriss, Deputy Director-General

Monday, 14 February 2011 – Gunnedah

Inspection

- 'Killarney' (cotton property)

With thanks to:

Ian Coxhead, Namoi Water

Daniel Knapman, Killarney

Errol Darley, Namoi Water

Mark Hamlin, irrigator, Boggabri

Andrew Watson, irrigator and member of Cotton Australia

Gail Watson, retired irrigator

Public hearing

Auscott Limited

Mr Bernard George, General Manager

Caroona Coal Action Group

Mr Timothy Duddy

Gwydir Valley Irrigators Association

Ms Zara Farrell, Executive Officer

Mr Harvey Gaynor, Vice-Chairman

Mr John Robinson, Chairman

Namoi Councils

Mr Bruce Brown, Chair, Namoi Councils Water Working Group

Namoi Water

Mrs Jon-Maree Baker, Executive Officer

Mr Errol Darley, Chairman

Mr James Kahl, Member

Mr Matt Norrie, Director

Mr Jonathon Phelps, Director

National Program for Sustainable Irrigation

Dr Guy Roth

Peel Valley Water Users Association

Mr Ian Coxhead, Member

Mr Allan 'Barry' John, Vice President

Mr Ildu Monticone, President

Mr Laurie Pengelly, Member

Split Rock Water Users Association

Mr Trevor Coombes, Member

Mr David Gee, President

Mr Bill Russell, Member

Community statement session

Bill Weakley

Richard Whitten, Citizens Electoral Council

Richard Stringer, Citizens Electoral Council

Don Woods

John Clements, Narrabri Shire Council

Rosemary Nankivell, Caroon Coal Action Council

David Walker, Liverpool Plains Land Management Committee, National Landcare Network

Tuesday, 15 February 2011 – Bourke**Site inspection**

- Darling Farms district property holdings

With thanks to:

Mr Geoff Wise, Western Catchment Management Authority (WCMA)

Mr Darryl Green, WCMA

Ian Cole, Managing Director, Darling Farms

Public hearing

Bourke Shire Council

Cr John Holmes

Cr Andrew Lewis, Mayor

Cr Walter Mitchell AM

Dr Geoff Wise, General Manager

Mungindi - Menindee Advisory Council Inc

Mr David Abbo, Secretary

Mr Stephen Buster

Mr Ian Cole

Mr Mervyn Gordon, Member

Mr Tony Thompson, Member

The Towers Drug Co Pharmacy

Mr Peter Crothers

Western Catchment Management Authority

Mr Daryl Green, General Manager

Wednesday, 16 February 2011 – Dubbo

Public hearing

Individuals

Dr Judith Stubbs

Australian Floodplain Association

Mr Mark Etheridge, President

Mr Terry Korn, Treasurer

Centre for Rural and Remote Mental Health, University of Newcastle

Mr Craig Hart, Coordinator

Cotton Australia

Mr Adam Kay, Chief Executive Officer

Cudgegong Valley Water Users Group

Mr Trevor Crosby, Chair

Gilgandra Shire Council/Orana Regional Organisation of Councils

Cr Doug Batten, Mayor/Chair

Macquarie Marshes Environmental Landholders Association

Mr Garry Hall, Chair

Mr Peter McLellan, Member

Ms Shannon McLellan, Secretary

Mr Robert McLellan, Member

Macquarie River Food and Fibre

Mr Chris Hogendyk

Miss Susan Madden, Executive Officer

Mr Tony Wass, Executive Committee Member

Mid-Western Regional Council and the Cudgegong Valley Water Users Group

Mr Russell Holden, Councillor

Mrs Linda Shreeve, Senior Environment Officer

NSW Farmers' Association

Mr Charles Armstrong, President

Mr John Ward

Mr Richard Widows, Senior Policy Advisor

Warren Shire Council/Orana Regional Organisation of Councils

Mr Ashley Wielinga, General Manager/Board Member

Cr Norman Wilson, Mayor/Deputy Chair

Wednesday, 23 February 2011 – Canberra

Public hearing

ACT Government

Mr Stewart Chapman, Water Policy Manager, Department of the Environment, Climate Change, Energy and Water

Hon Simon Corbell, Minister for the Environment, Climate Change, Energy and Water

Mr David Papps, Chief Executive, Department of the Environment, Climate Change, Energy and Water

Department of Regional Australia, Regional Development and Local Government

Mr Simon Atkinson, Acting First Assistant Secretary, Policy Coordination Branch

Ms Elizabeth Bennett, A/g Assistant Secretary, Local Engagement and Strategy Branch

Mr Ross Dalton, Director, Policy Coordination Branch

Mr Bruce Taloni, A/g Assistant Secretary, Policy Management Branch

Water for Rivers

Mr Richard Bull, Chairman

Mr Ross Davies, Business Manager

Mr Neville Smith, Chief Executive Officer

Friday, 25 February 2011 – Canberra

Public hearing

AgriFood Skills Australia

Mr Arthur Blewitt, Chief Executive Officer

Ms Di Dibley, Senior Policy Adviser

CSIRO

Dr Brian Keating, Director, Sustainable Agriculture Flagship

Dr Bill Young, Director, Water for a Healthy Country Flagship

SA Government

Hon Paul Caica MP, Minister for the River Murray

Ms Mandy Rossetto, Director, Murray-Darling Basin Policy and Reform,
Department for Water

Wednesday 2 March 2011 – Canberra

Public hearing

Australian Dairy Industry Council Inc

Mr Adrian Drury, Vice President

Dairy Australia

Ms Claire Miller, Water Policy Analyst

Monash Sustainability Institute - National Water Governance Research Initiative

Professor Raymond Ison, Professor, Systems for Sustainability

Dr Philip Wallis

Murray Goulburn Co-operative Co Ltd

Mr Robert Poole, General Manager

National Water Commission

Mr James Cameron, Acting Chief Executive Officer

Ms Kerry Olsson, A/g Deputy Chief Executive Officer

Wentworth Group

Mr Peter Cosier, Member

Professor Quentin Grafton, Member

Professor Chris Miller

Mr Tim Stubbs, Policy Analyst

Dr John Williams

Tuesday, 15 March 2011 – St George

Inspection

- the Rogan property
- the Moon property

With thanks to:

Glenn Rogan

staff of Moon Rocks

Gordon Delaney, SunWater

Ian Brimblecombe

Public hearing

Balonne Shire Council

Mr Scott Norman, Chief Executive Officer

Cr Andrew Sevil, Councillor

Cr Donna Stewart, Mayor

Condamine Alliance

Mr Dan Cloonan, Water Leader

Mr Phil McCullough, Chief Executive Officer

Eastern Australia Agriculture

Mr Hamish McIntyre, Manager

Mr Tony Reid, Chief Operating Officer

Northern Basin Aboriginal Nations

Mr Michael Eckford, Executive Director

Mr Frederick Hooper, Chairperson

Mr Robert Lacey, Executive Member

Queensland Farmers' Federation

Mr Ian Johnson, Water Policy Adviser

Smart Rivers

Mr Frank Deshon, Co Chair

Mr Ian Todd, Member

Community statement session

Rob Moore

Ed Willis, St George Cotton Growers Association

David Blacket, Queensland Fruit and Vegetable Growers Association

Dick Thies, Citizen's Electoral Council

Glen Rogan

Wednesday, 16 March 2011 – Dirranbandi**Inspection**

- Cubbie Station

With thanks to:

McGrath Nicols, Deed Administrators for Cubbie Group

Wednesday, 16 March 2011 – Goondiwindi**Public hearing****AgForce Queensland**

Mr Kim Bremner, Water Spokesman

Ms Genevieve Johnston, Policy Officer

Border Rivers Food and Fibre

Mr David Coulton, Chairman

Mr Tim Napier, Executive Officer

Queensland Conservation Council

Mr Nigel Parratt, Rivers Project Officer

Toowoomba & Region Environment Council

Mr John Armbruster, Member

Community statement session

Doug Scott

Ms Jan Pakullus

Mr Peter Corish

Thursday, 17 March 2011 – Brisbane**Public hearing****Queensland Government**

Mrs Debra-Lee Best, Deputy Director General, Department of Environment & Resource Management

Mr John Bradley, Director General, Department of Environment & Resource Management

Mr Gregory Claydon, Executive Director, Department of Environment & Resource Management

Hon Kate Jones, Minister for Environment and Resource Management

Mr Tim Watts, Policy Advisor, Office of the Minister for Environment and Resource Management

Wednesday, 23 March 2011 – Canberra**Public hearing****Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)**

Mr Peter Gooday, General Manager, Productivity, Water and Social Sciences Branch

Mr Paul Morris, Deputy Executive Director

Department of Agriculture Fisheries and Forestry

Mr Allen Grant, Executive Manager, Agricultural Productivity Division

Lachlan Valley Water

Ms Mary Ewing, Executive Officer

Mr Dennis Moxey, Chairman

Mr Timothy Watson, Board Member

National Association of Forest Industries

Mr Grant Johnson, Senior Policy Analyst

Mr Michael Stephens, Deputy Chief Executive Officer

Uniting Church of Australia, NSW and ACT Synod

Ms Julie Greig, Rural Chaplain

Reverend Kelvin Hodge, Rural Chaplain

Mr Ross Neville, Rural Consultant

University of New South Wales

Mr Paul Kildea, Director

Professor George Williams

Friday, 25 March 2011 – Canberra

Public hearing

Individuals

Mr Ian Mott

Australia Institute of Agricultural Science and Technology

Mr Geoff Thomas, National President

Australian Rain Technologies

Dr Stephen Beare

Mr Matt Handbury, CEO

Mr Scott Peak, Chief Scientific Officer

Irrigation Australia Limited

Mr Trevor Le Breton, A/g Chief Executive Officer

Mr Peter Toome, Chair

Judith Stubbs & Associates

Mr John Storer, Senior Research Associate

Dr Judith Stubbs, Principal

Murray-Darling Basin Authority

Mr Rob Freeman, Chief Executive

Mr Craig Knowles, Chair

Mr Fraser MacLeod, Executive Director

Mr Tony Webster, General Manager

National Farmers' Federation

Ms Deborah Kerr, NRM Manager

Mr Matt Linnegar, Chief Executive Officer

National Irrigators' Council

Mr Stewart Ellis, Chairman

Mr Danny O'Brien, Chief Executive Officer

Ricegrowers' Association of Australia Inc.

Mr Les Gordon, President

Mrs Ruth Wade, Executive Director

The Fifth Estate

Mr Ian Wiskin, Principal

Wednesday, 30 March 2011 – Swan Hill

Private meeting

The Hon. Peter Walsh, Minister for Water, Victorian Government

Public hearing

Gannawarra Shire Council

Ms Hodi Beauliv, Grants and Environment Manager

Cr Max Fehring, Mayor

Ms Rosanne Kava, Chief Executive Officer

Mallee Family Care

Ms Fiona Harley, Deputy Executive Director

Adj Prof Vernon Knight, Executive Director

Moira Shire Council - Murray River Group of Councils

Mr Gary Arnold, Chief Executive Officer

Cr Ed Cox, Mayor

NSW Farmers' Association - Balranald Branch

Mr James Harris, Chairman

Shire of Campaspe - Murray River Group of Councils

Mr Keith Baillie, Chief Executive Officer

Cr Neil Pankhurst, Mayor

Sunraysia Water Exchange (SWEX)

Mr Phillip Grahame, Manager

Swan Hill Rural City Council

Cr Greg Cruickshank, Mayor

Mr Dennis Hovenden, Chief Executive Officer

Wakool Landholders Association

Mr Mark Martin, Secretary

Mr David May, Chairperson

Wimmera Irrigators Association Inc.

Mr Robert Atkin, Treasurer

Mr James Delahunty, Secretary

Mr Dale Frankel, Chairman

Community statement session

David Hackett

Geoff Scougall

Jeremy Morton

Glenn Stewart, Murray Mallee Local Learning and Employment Network

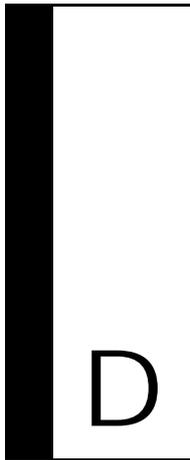
Rodger Schifferle

Doug Harris

Peta Thornton

Neil Macfarlane

Peter McCluskey, National Aglime Association and Victorian Limestone
Producer's Association



Appendix D – Extract from the *Water Act 2007*

20 Purpose of Basin Plan

The purpose of the Basin Plan is to provide for the integrated management of the Basin water resources in a way that promotes the objects of this Act, in particular by providing for:

- (a) giving effect to relevant international agreements (to the extent to which those agreements are relevant to the use and management of the Basin water resources); and
- (b) the establishment and enforcement of environmentally sustainable limits on the quantities of surface water and ground water that may be taken from the Basin water resources (including by interception activities); and
- (c) Basin-wide environmental objectives for water-dependent ecosystems of the Murray-Darling Basin and water quality and salinity objectives; and
- (d) the use and management of the Basin water resources in a way that optimises economic, social and environmental outcomes; and
- (e) water to reach its most productive use through the development of an efficient water trading regime across the Murray-Darling Basin; and
- (f) requirements that a water resource plan for a water resource plan area must meet if it is to be accredited or adopted under Division 2; and
- (g) improved water security for all uses of Basin water resources.

21 General basis on which Basin Plan to be developed

Basin Plan to implement international agreements

- (1) The Basin Plan (including any environmental watering plan or water quality and salinity management plan included in the Basin Plan) must be prepared so as to provide for giving effect to relevant international agreements (to the extent to which those agreements are relevant to the use and management of the Basin water resources).
- (2) Without limiting subsection (1), the Basin Plan must:
 - (a) be prepared having regard to:
 - (i) the fact that the use of the Basin water resources has had, and is likely to have, significant adverse impacts on the conservation and sustainable use of biodiversity; and
 - (ii) the fact that the Basin water resources require, as a result, special measures to manage their use to conserve biodiversity; and
 - (b) promote sustainable use of the Basin water resources to protect and restore the ecosystems, natural habitats and species that are reliant on the Basin water resources and to conserve biodiversity.

Note: See Articles 7 and 8 of the Biodiversity Convention.

- (3) Without limiting subsection (1), the Basin Plan must also:
 - (a) promote the wise use of all the Basin water resources; and
 - (b) promote the conservation of declared Ramsar wetlands in the Murray-Darling Basin.

Note: See Article 3 of the Ramsar Convention.

Basis on which Basin Plan to be developed

- (4) Subject to subsections (1), (2) and (3), the Authority and the Minister must, in exercising their powers and performing their functions under this Division:
 - (a) take into account the principles of ecologically sustainable development; and
 - (b) act on the basis of the best available scientific knowledge and socio-economic analysis; and
 - (c) have regard to the following:
 - (i) the National Water Initiative;

- (ii) the consumptive and other economic uses of Basin water resources;
- (iii) the diversity and variability of the Basin water resources and the need to adapt management approaches to that diversity and variability;
- (iv) the management objectives of the Basin States for particular water resources;
- (v) social, cultural, Indigenous and other public benefit issues;
- (vi) broader regional natural resource management planning processes;
- (vii) the effect, or potential effect, of the Basin Plan on the use and management of water resources that are not Basin water resources;
- (viii) the effect, or the potential effect, of the use and management of water resources that are not Basin water resources on the use and management of the Basin water resources; and
- (ix) the State water sharing arrangements.

Note 1: Paragraph (b): the best available scientific knowledge includes the best available systems for accounting for water resources.

Note 2: An example of a management objective referred to in subparagraph (c)(iv) might be preservation of the natural values of a river system through no development or minimal development.

Note 3: See also subsection 25(3) (which deals with the water quality and salinity management plan).

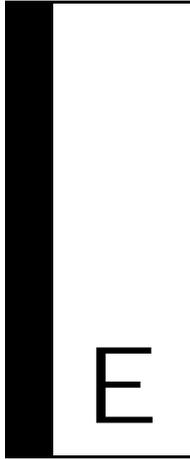
Basin Plan not to reduce protection of planned environmental water provided for under existing State water management laws

- (5) The Basin Plan must ensure that there is no net reduction in the protection of planned environmental water from the protection provided for under the State water management law of a Basin State immediately before the Basin Plan takes effect.

Basin Plan not to be inconsistent with Snowy Water Licence

- (6) The Basin Plan must not be inconsistent with the provisions of the licence issued under section 22 of the Snowy Hydro Corporatisation Act 1997 of New South Wales.

- (7) In applying subsection (6), a variation of the licence after the commencement of Part 2 of this Act is to be disregarded unless the variation is prescribed by the regulations for the purposes of this subsection.



Appendix E – Water saving proposals

The below table outlines some of the projects put to the Committee to return water to the environment prior to reducing the productive water available to irrigators. These projects have not been subject to a robust analysis by the Committee, but are listed here as an example of wealth of initiatives developed in communities across the Basin.

Table E.1 Water saving proposals

Region	Project	Potential Return (ML)
Goulburn-Broken	Water for Rivers Mokoan Project ¹	50,200
	Furtureflow Shepparton project. ²	25,000
	Five year on-farm irrigation efficiency project by a consortium led by the Goulburn Broken Catchment Management Authority. ³	100,000
Loddon	CSIRO pilot study in the Torumbarry Irrigation Area (TIA) to investigate the potential for targeted investment in reconfiguration and water purchases. ⁴	60,000
Lower Darling	Darling Anabranh Pipeline – construction of a stock and domestic water pipeline, the removal of instream structures from within the anabranh and the management of flows from Lake Cawndilla. ⁵	47,000
Murray	Structural and engineering works at Hattah Lakes. ⁶	371,300
	A group of 30 irrigators proposing to shut down their channel system.	40,000

1 New South Wales Farmers Association, *Submission 485*, p. 18.

2 Northern Victorian Irrigators, *Submission 555*, p. 3.

3 United Dairy Farmers of Victoria, *Supplementary Submission 530.2*, p. 10.

4 Environment Victoria, *Submission 317*, pp. 19-20.

5 New South Wales Government, *Submission 585*, p. 29.

6 Victorian Farmers Federation, *Submission 395*, p. 25.

Region	Project	Potential Return (ML)
	Project of strategic infrastructure and a focussed watering program of Lindsay Island. ⁸	277,500
	Structural and engineering works at Gunbower Forest. ⁹	185,000
	Sub-system retirement package including bulk water purchase and the retirement of infrastructure. ¹⁰	25,000
	Private Irrigation Infrastructure Operations Program (PIIOP) – combing strategic purchase and channel retirement. ¹¹	167,000
	On-Farm Irrigation Efficiency Program – 141 projects of on-farm irrigation. ¹²	30,000
Murrumbidgee	Water for Rivers are looking at recovering water from the better management of the Murrumbidgee, partly through on-farm efficiencies and the more efficient delivery of water to users. ¹³	40,000-70,000
	The development of Barren Box Swamp as water and wetland storage, for the purpose of balancing operational water demands. ¹⁴	20,000
	Proposal from a group of farming families to decommission 90 kilometres of channel that serviced 67,000 hectares. ¹⁵	43,000
	Reconstruction of channelised section of the Mirrool Creek. ¹⁶	6,000
	The establishment of a current generation pressurised and piped stock and domestic system (including pump stations, water storages and new supply points) at Wah Wah channel. ¹⁷	10,000
	The planning, design and implementation of a new water supply to the Lake Wyangan catchment. ¹⁸	6,000
	Sale and full control of 84,000 hectares within the Lower Murrumbidgee Icon Site (Nimmie-Caira), including full control of channel and floodplain infrastructure. ¹⁹	160,000-380,000

7 Mr May, Wakool Landholders Association, *Transcript of Evidence*, Swan Hill, pp. 24-25.

8 Mr Mills, Mildura's Future Water Group, *Transcript of Evidence*, Mildura, 19 January 2011, p. 6; and Victorian Farmers Federation, *Submission 395*, p. 25.

9 Victorian Farmers Federation, *Submission 395*, p. 25.

10 Murray Irrigation, *Submission 440*, p. 16.

11 Murray Irrigation, *Submission 440*, p. 16.

12 Murray Irrigation, *Submission 440*, p. 16.

13 Mr Richard Bull, Water for Rivers, *Transcript of Evidence*, Canberra, 23 February 2011, p. 18; Water for Rivers, *Submission 408*, p.5; and Murray Irrigation, *Submission 440*, p. 3.

14 Leslie Worland, *Submission 167*, p. 4.

15 Mr Morton, *Submission 638*.

16 Murrumbidgee Irrigation, *Submission 419*, p. 12.

17 Murrumbidgee Irrigation, *Submission 419*, p. 12.

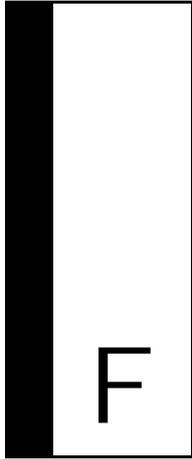
18 Murrumbidgee Irrigation, *Submission 419*, p. 12.

19 Mr Michael Spinks, *Exhibit 142*.

Region	Project	Potential Return (ML)
Wimmera-Avoca	Proposal to close the Wimmera Irrigation System in preference to modernisation or rationalisation of water systems in the area. ²⁰	28,000
	Northern Wimmera – Mallee Pipeline project. ²¹	75,000

20 Wimmera Irrigators Association, *Submission 175*, pp. 1-2.

21 Northern Victorian Irrigators, *Submission 555*, p. 3.



Appendix F – Interim findings

On Wednesday, 9 February 2011, the Committee resolved that it would write to the Minister for Sustainability, Environment, Water, Population and Communities and the Minister for Regional Australia, Regional Development and Local Government seeking that they urgently address a number of issues as a matter of priority.

Correspondence to the Ministers and the response from the Minister for Sustainability, Environment, Water, Population and Communities follows.



PARLIAMENT of AUSTRALIA
HOUSE of REPRESENTATIVES

STANDING COMMITTEE ON REGIONAL AUSTRALIA

PO Box 6021, Parliament House, Canberra ACT 2600 | Phone: (02) 6277 4162 | Fax: (02) 6277 4773 | Email: ra.reps@aph.gov.au | www.aph.gov.au/ra

09 February 2011

The Hon. Tony Burke MP
Minister for Sustainability, Environment, Water, Population and Communities
PO Box 6022
House of Representatives
Parliament House
Canberra ACT 2600

Dear Minister,

As you are aware, the Standing Committee on Regional Australia has been undertaking a significant series of hearings and inspections as part of its inquiry into the proposed guide to the Murray Darling Basin Plan.

A number of issues have arisen consistently across the Southern Basin and the Committee is concerned that these issues need to be addressed as a matter of priority. Namely, the Committee is seeking that you investigate:

- the impact of the so called 'Swiss cheese' effect of water buy backs on irrigation districts and that, with urgency, consider more strategic buy back arrangement that may be implemented;
- the impact of the current taxation arrangements on irrigators as a result of water reform such as grants for investments in water efficiency;
- the implications of the Murray Darling Basin Authority's consideration of overbank flows in their modelling of the water requirements of the environmental icon sites and, in consultation with stakeholders, opportunities for engineering alternatives.

The Committee is of a consensus view that these issues be brought to your attention prior to it tabling its report.

Yours sincerely

Tony Windsor
Chair



PARLIAMENT of AUSTRALIA
HOUSE of REPRESENTATIVES

STANDING COMMITTEE ON REGIONAL AUSTRALIA

PO Box 6021, Parliament House, Canberra ACT 2600 | Phone: (02) 6277 4162 | Fax: (02) 6277 4773 | Email: ra.reps@aph.gov.au | www.aph.gov.au/ra

09 February 2011

The Hon. Simon Crean MP
Minister for Regional Australia, Regional Development and Local Government
PO Box 6022
House of Representatives
Parliament House
Canberra ACT 2600

Dear Minister,

As you are aware, the Standing Committee on Regional Australia has been undertaking a significant series of hearings and inspections as part of its inquiry into the proposed guide to the Murray Darling Basin Plan.

A number of issues have arisen consistently across the Southern Basin and the Committee is concerned that these issues need to be addressed as a matter of priority. Namely, the Committee is seeking that you investigate:

- the impact of the so called 'Swiss cheese' effect of water buy backs on irrigation districts and that, with urgency, consider more strategic buy back arrangement that may be implemented;
- the impact of the current taxation arrangements on irrigators as a result of water reform such as grants for investments in water efficiency;
- the implications of the Murray Darling Basin Authority's consideration of overbank flows in their modelling of the water requirements of the environmental icon sites and, in consultation with stakeholders, opportunities for engineering alternatives.

The Committee is of a consensus view that these issues be brought to your attention prior to it tabling its report. I have also written to the Minister for Sustainability, Environment, Water, Population and Communities regarding this matter.

Yours sincerely

Tony Windsor
Chair



THE HON SIMON CREAN MP

**Minister for Regional Australia, Regional Development and Local Government
Minister for the Arts**

THE HON TONY BURKE MP

Minister for Sustainability, Environment, Water, Population and Communities

Reference: C11/226

Mr Tony Windsor MP
Chair
House of Representatives Standing Committee
on Regional Australia
Parliament House
CANBERRA ACT 2600

15 MAR 2011

Dear Mr Windsor

Thank you for your letter of 9 February 2011 concerning the initial findings of the House of Representatives Standing Committee on Regional Australia's inquiry into the impact of the Murray-Darling Basin Plan in regional Australia.

We note that you raise three particular issues: the desirability of more strategic water buybacks, the taxation arrangements applying to water infrastructure investment grants, and the need to consider engineering alternatives to overbank flows when modelling water requirements of icon sites. Thank you for raising these important issues in advance of tabling the Committee's report.

We, and Minister Ludwig, have visited regional communities throughout the Murray-Darling Basin and held discussions with community representatives, local government bodies and Regional Development Australia (RDA) committees. The same issues have been put to us as matters on which regional communities place a high priority, and these have been discussed within Government.

As you are aware, the Government has already responded to two of the issues. On 18 February 2011, we issued a joint announcement that the Government would move to change current taxation arrangements for irrigators who take up water efficiency investment grants to allow more strategic infrastructure investment. The tax changes will be backdated to 1 April 2010.

This taxation announcement in turn unlocked the announcement of Round 2 of the Private Irrigation Infrastructure Operators Program. This program will assist irrigation authorities to lead strategic infrastructure investments and manage concerns about stranded assets.

We also announced changes to arrangements for water buybacks. Future purchasing rounds will be smaller and more consistent, minimising the disruption to communities and managing distortion in water markets. Minister Burke is considering further options for prioritising strategic recovery of water and minimising 'Swiss cheese' effects.

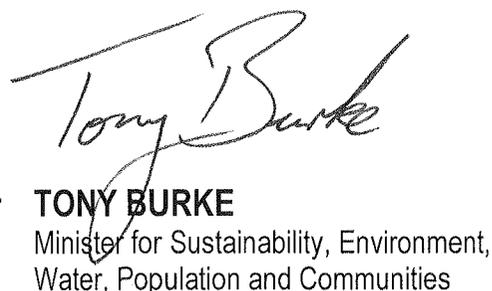
The third matter you raise in your correspondence relates to the modelling of watering needs of icon sites and the implications of overbank flows. These issues have been referred to the MDBA for further examination, and will be discussed by Minister Burke and state water Ministers in early April 2011. The Government will subsequently reconsider the matter.

To achieve the reform needed in the Murray-Darling Basin, we need a bipartisan approach. The report from your Committee is important in delivering such bipartisanship in the Parliament, and we look forward to the tabling of the Committee's report in the House.

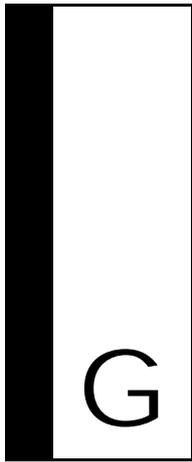
Yours sincerely



SIMON CREAN
Minister for Regional Australia, Regional
Development and Local Government



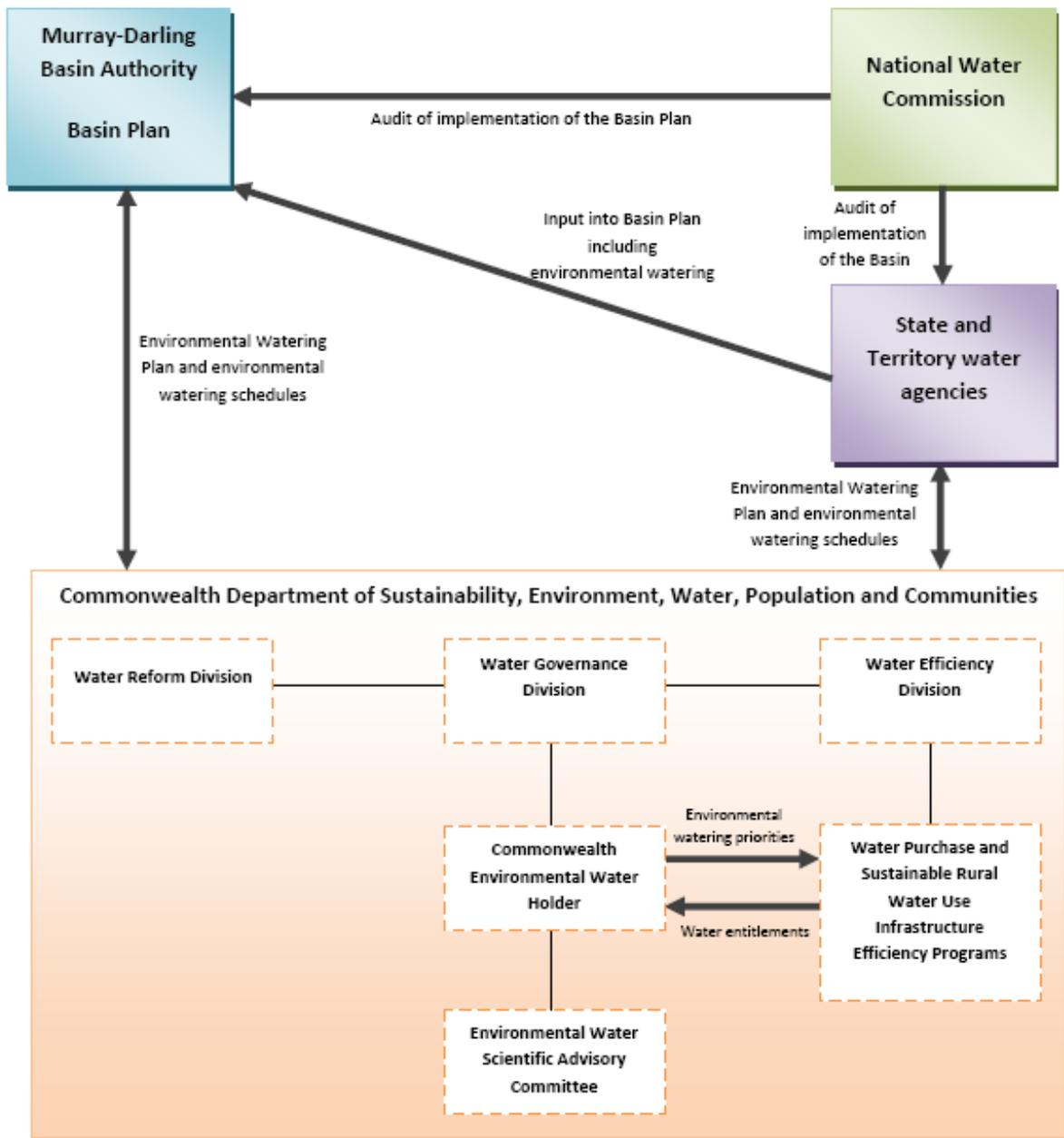
TONY BURKE
Minister for Sustainability, Environment,
Water, Population and Communities



Appendix G – Governance model

The following diagrams represent the current Basin governance model and that proposed under the recommendations of this report to assist readers in comparing the two arrangements.

Current governance model



Proposed new governance model

