The Senate

Rural and Regional Affairs and Transport References Committee

Implications for long-term sustainable management of the Murray Darling Basin system.

Final report

June 2009

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Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ACCC	Australian Competition and Consumer Commission
AHRC	Australian Human Rights Commission
the Authority	Murray-Darling Basin Authority
Basin	Murray-Darling Basin
COAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DEWHA	Department of the Environment, Water, Heritage and the Arts
ECD	Ecological Character Description
GL	gigalitre
IGA	Intergovernmental Agreement on Murray-Darling Basin Reform
Infrastructure Program	*Sustainable Rural Water Use and Infrastructure Program*
IRN	Inland Rivers Network
MDB	Murray-Darling Basin
MDBC	Murray-Darling Basin Commission
MoU	Memorandum of Understanding on Murray-Darling Basin Reform
NFF	National Farmers' Federation
NPA	National Parks Association of NSW
NRM	natural resource management
NSW	New South Wales
NWI	*National Water Initiative*
Ramsar Convention	Ramsar Convention on Wetlands of International Importance

Ramsar List	List of Wetlands of International Importance under the Ramsar Convention
ROPs	resource operation plans
TIA	Torrumbarry Irrigation Area
TRAMS	Torrumbarry Reconfiguration and Asset Modernisation Strategy
Water Act	*Water Act 2007*
Water Entitlement Buyback	*Restoring the Balance in the Murray-Darling Basin*
Wentworth Group	Wentworth Group of Concerned Scientists
WRPs	Water Resource Plans.

Recommendations

Recommendation 1

2.37 The committee recommends that the Commonwealth work towards a full and unconditional referral of powers relevant to the management of the MDB and, in the absence of such full referral, consider pursuing other options to provide for complete federal management.

Recommendation 2

3.37 The committee recommends that the Basin Plan be implemented as set out in the Water Act, and made available by early 2011, as provided for in the IGA but also pursue all options with states to expedite the end of transitional arrangements and application of the Basin Plan at the earliest opportunity possible.

Recommendation 3

4.41 The committee recommends that the work identified in the Ramsar Snapshot Study as key information gaps and priority work be undertaken by the Department of the Environment, Water, Heritage and the Arts.

Recommendation 4

5.54 The committee recommends that the implementation of an Environmental Watering Plan, or any measures to acquire and provide for environmental water, should not be considered in isolation of the potential socio-economic impacts of these plans.

Recommendation 5

5.83 The committee recommends that the Commonwealth work towards achieving a nationally uniform system of water trading and licensing arrangements that ensures fair treatment across all regions and states.

Recommendation 6

5.97 The committee recommends that there be no compulsory acquisition of water entitlements.

Recommendation 7

5.115 The committee recommends that careful consideration is given to the impact of the acceleration of the water buybacks when infrastructure projects are yet to be commenced or completed for example, the impact of a modern delivery system on on-farm infrastructure that has not been upgraded.

Recommendation 8

5.116 The committee recommends that a higher priority be placed on the re-plumbing of rural Australia through the urgent implementation of both on-farm and off-farm infrastructure projects.

Recommendation 9

5.121 The committee recommends that if the Commonwealth Environmental Water Holder has not already implemented any plans for the delivering environmental water to key environmental assets to date, this process should be immediately undertaken.

Recommendation 10

6.37 The committee recommends that any policies derived as a result of the *Sustainable Yields Project* be carefully examined and reviewed in light of the assessed impact on water availability, with particular consideration given to policy impacts on groundwater extractions.

Recommendation 11

6.39 The committee recommends that a study be conducted on the impact of decreased water availability, as a result of government policy, on food production areas along the MDB. The study should take into account other studies and results completed in this area.

Recommendation 12

7.41 The committee recommends that priority should be given to upgrading and modernising monitoring of water usage from the MDB.

Recommendation 13

7.42 The committee recommends urgent identification of unregulated water interception activities across the MDB. The relevant data should be used to inform the development of state policies regarding the regulation of usage of these activities.

Recommendation 14

7.43 The committee recommends a study to be undertaken to better understand how the states monitor and manage the harvesting of overland flows and to provide policy development guidelines in this area for the relevant states.

Chapter 1

Introduction

Terms of reference

1.1 On 27 August 2008, the Senate referred the following matters to the Standing Committee on Rural and Regional Affairs and Transport for inquiry and report by 4 December 2008.

> The implications for the long-term sustainable management of the Murray-Darling Basin system, with particular reference to:
>
> a) the adequacy of current whole-of -basin governance arrangements under the Intergovernmental Agreement;
>
> b) the adequacy of current arrangements in relation to the implementation of the Basin Plan and water sharing arrangements;
>
> c) long-term prospects for the management of Ramsar wetlands including the supply of adequate environmental flows;
>
> d) the risks to the basin posed by unregulated water interception activities and water theft;
>
> e) the ability of the Commonwealth to bind state and territory governments to meet their obligations under the National Water Initiative;
>
> f) the adequacy of existing state and territory water and natural resource management legislation and enforcement arrangements; and
>
> g) the impacts of climate change on the likely future availability of water.

1.2 The Senate extended the reporting date to 25 June 2009 to enable the committee to take further evidence in relation to the terms of reference.

1.3 This inquiry is the second part of an inquiry. The first part of the inquiry was into water management in the Coorong and Lower Lakes. The committee tabled a report for the first part of the inquiry on 10 October 2008.[1] The committee notes that a number of submissions and witnesses to Part 1 of the inquiry also addressed the terms of reference for Part 2 of the inquiry. In so far as submissions and evidence from Part 1 of the inquiry are relevant to the committee's deliberations for Part 2 of the inquiry, the committee has considered those submissions and evidence.

Conduct of inquiry

1.4 The inquiry was advertised in *The Australian* newspaper on 10 and 24 September, 8 and 22 October and 5 November 2008, and on the internet. In addition to

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1 Senate Standing Committee on Rural and Regional Affairs and Transport, *Water management in the Coorong and Lower Lakes (including consideration of the Emergency Water (Murray-Darling Basin Rescue) Bill 2008*, October 2008.

relevant government agencies and departments, the committee invited a number of key stakeholder groups and individuals to provide a submission. The committee continued to accept submissions throughout the inquiry.

1.5 The committee received 19 submissions to this part of the inquiry, listed in Appendix 1. Submissions to Part 1 of the inquiry are also listed in Appendix 1. The committee held public hearings in Canberra on 10, 13 and 16 March 2009. For a full list of witness please refer to Appendix 2.

1.6 All relevant submissions for the inquiry and the Hansard transcripts of the committee's hearings are available on the Australian Parliament's homepage at http://www.aph.gov.au.

Structure of the committee's report

1.7 Chapter 2 of the report discusses the adequacy of the governance arrangements under the Intergovernmental Agreement on Murray-Darling Basin Reform. Chapter 3 discusses the adequacy of the implementation of the Basin Plan and water sharing agreements.

1.8 Chapter 4 of the report considers the long-term sustainable management of Ramsar wetlands in the Murray-Darling Basin.

1.9 Chapter 5 discusses the supply of adequate water to environmental assets in the Murray-Darling Basin.

1.10 Chapter 6 outlines the likely impacts of climate change on water availability in the Murray-Darling Basin.

1.11 Chapter 7 considers the risks to the Murray-Darling Basin posed by unregulated water interception activities.

1.12 Chapter 8 of the report summarises other issues raised in the inquiry, namely: the progress in implementation of the *National Water Initiative* reforms and the appropriateness of these reforms to the situation in the Murray-Darling Basin; and the adequacy of state and territory water and natural resource management legislation and enforcement arrangements.

Acknowledgements

1.13 The committee appreciates the time and work of all those who provided oral and written submissions to the inquiry. Their work has assisted the committee considerably in its inquiry.

A note on references

1.14 References in this report are to individual submissions as received by the committee, not to a bound volume. References to the committee Hansard are to the

proof Hansard: page numbers may vary between the proof and the official Hansard transcript.

Chapter 2

Governance arrangements under the Intergovernmental Agreement on Murray-Darling Basin Reform

Introduction

2.1 This chapter discusses the adequacy of the current whole of basin governance arrangements under the Intergovernmental Agreement on Murray-Darling Basin Reform.

2.2 The independence of the Murray-Darling Basin Authority, and the continuing role that the Basin States play in the management of the Murray-Darling Basin, were the focus of the committee's consideration in relation to the governance arrangements. Other issues addressed were: the extent to which the Intergovernmental Agreement on Murray-Darling Basin Reform covered the 'whole-of-basin'; and the role of Indigenous Australians in the management of the Murray-Darling Basin.

Adequacy of current whole-of-Basin governance arrangements under the Intergovernmental Agreement

2.3 On 3 July 2008 the Intergovernmental Agreement on Murray-Darling Basin Reform (IGA) was signed by the Commonwealth and Basin States – Queensland, New South Wales, Victoria, South Australia and the Australian Capital Territory.[1]

2.4 The IGA implements the Memorandum of Understanding on Murray Darling Basin Reform (MoU), which was signed at the Council of Australian Governments meeting on 26 March 2008. Under the MoU the Commonwealth and Basin States agreed to merge the Murray-Darling Basin Commission (MDBC) and the Murray-Darling Basin Authority to create a single institution, to be known as the Murray-Darling Basin Authority (the Authority) which is responsible for developing, implementing and monitoring the Basin Plan. The Basin Plan will include a sustainable cap on surface and groundwater diversions and provide for the critical human needs of communities that use water from the Murray.[2]

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1 Intergovernmental Agreement on Murray-Darling Basin Reform (IGA), 3 July 2008. Available at http://www.coag.gov.au/coag_meeting_outcomes/2008-07-03/docs/Murray_Darling_IGA.pdf.

2 Murray-Darling Basin Reform, Memorandum of Understanding, 26 March 2008, p. 1. Available at http://www.coag.gov.au/coag_meeting_outcomes/2008-03-26/docs/attachment_a.pdf. The Basin Plan is discussed in detail in Chapter 3.

Governance arrangements

2.5 The IGA seeks to establish 'a new culture and practice of Basin wide management and planning, through new structures and partnerships'.[3] The governance arrangements for the Basin are set out in Schedules B and C of the IGA. Those arrangements are:[4]

- The Commonwealth Water Minister is responsible for the Authority and is responsible for approving the Basin Plan. The Minister can choose not to adopt the Basin Plan and refer it back to the Authority with suggestions for consideration by the Authority.
- The Ministerial Council, comprising one Minister from each Basin Government (with the Commonwealth Minister being the Council chair) advises the Commonwealth Water Minister on the Basin Plan. The Ministerial Council can refer the Basin Plan back to the Authority for reappraisal, if necessary. The Ministerial Council also has a role in considering and determining outcomes and objectives on major policy issues not addressed in the Basin Plan.
- The Authority, in addition to the preparation, implementation, monitoring and enforcement of the Basin Plan, will implement decisions made by the Ministerial Council and the Basin Officials Committee;
- The Basin Officials Committee, comprising officials from the six Basin Governments, has an advisory role to the Authority on the Basin Plan. The Basin Officials Committee role also includes:
    - providing advice to the Ministerial Council on issues not addressed in the Basin Plan;
    - giving effect to policies and decisions which the Ministerial Council delegates;
    - setting objectives and outcomes in relation to River Murray operation by the Authority;
    - responsibility for resolving operational management and delivery inconsistencies arising from the application of the Basin Plan the States' management and delivery of water entitlements and allocations;
    - responsibility for high level decision making in relation to the operation of the River Murray System; and
    - responsibility for monitoring the asset management plan.
- A Basin Community Committee, consisting of a chair and 16 other members, including one member of the Authority. Members of the Basin Community

3 IGA, Preamble, paragraph 17.

4 See IGA, 3 July 2008, pp 10-19, and Schedules B and C.

Committee are appointed by the Ministerial Council. The Basin Community Committee will provide advice to the Authority, through the Authority member of the Committee, and provide advice to the Ministerial Council on matters for which it seeks the Committee's advice.

2.6 Under the IGA the Basin States also agreed to pass legislation providing for a referral of certain powers to the Commonwealth in accordance with paragraph 51(xxxvii) of the Constitution. The matters covered include:

- transferring the current powers and functions of the MDBC to the Authority;
- strengthening the role of the Australian Competition and Consumer Commission (ACCC); and
- enabling the Basin Plan to provide arrangements for meeting critical human needs.[5]

Adequacy of governance arrangements

2.7 Submissions to the inquiry made a number of criticisms of the whole-of-Basin governance arrangements set out in the IGA, including:

- the decision making role of the States and the purported independence of the Authority;
- the IGA arrangements are not, in fact, 'whole-of-Basin', because it excludes key water sources in the Murray-Darling Basin (MDB or Basin); and
- the arrangements do not adequately provide for consultation and representation of Indigenous people.

Role of the States and independence of the Murray-Darling Basin Authority

2.8 Responsibility for management of the MDB has historically been a difficult issue in Commonwealth-State relations. Associate Professor John Williams, of the University of Adelaide Law School, explained to the committee the negotiations which took place between the drafters of the Constitution in relation to the MDB, which resulted in States being assigned the authority for management of rivers. Associate Professor Williams described the MDB as 'not so much a national river system; it is the rivers of four states and one territory'.[6]

2.9 It is this fragmented management arrangement that some submitters believe is to blame for the current state of the Murray-Darling Basin. For example, the submission from Dr Kerrie Muller stated:

> Current Governance structures are too clumsy and ill-co-ordinated to be effective at managing a system as complex as the Murray-Darling Basin.

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5 Department of the Environment, Water, Heritage and the Arts (DEWHA), *Submission 1A*, Part 1 of the inquiry, pp 3-4.

6 *Committee Hansard*, 10 September 2008, pp 46-7.

> Tensions exist between community and Statutory Groups, Agencies within each State as well as between the States and the Commonwealth Agencies that prevent cohesive action. State borders as well as 'policy borders' such as the constrained scope of the *Living Murray* program also impede cohesive and timely action and key activities are falling between the gaps.[7]

2.10 The predominant criticism of the IGA governance arrangements is that, because of the continuing decision-making role that the Basin States have in the Ministerial Council, the Authority lacks the independence it needs to manage the Basin for the benefit of all. For example, the Coorong, Lakes and Murray Waterkeeper said:

> The Intergovernmental Agreement is inadequate [and] promoted in a way that deceives the Australian public. Much has been made of the independence of the new Murray-Darling Basin Authority but it is not truly independent. It is subject to direction by the Ministerial Council and the Basin Officials Committee.
>
> What we have is a system that establishes the same partisan and parochial capacity of the old system which is responsible for so much of the impact we are now confronting.[8]

2.11 Mr Mitch Williams, MP, the South Australian Shadow Minister for Water Security made the following observation:

> We believe that the Governance arrangements under the Intergovernmental agreement fail to change the status quo leaving powers with individual states to at least frustrate if not prevent necessary changes.[9]

2.12 Professor Diane Bell expressed her disappointment at the scope of powers of the Authority:

> I, along with a number of others concerned about over-allocation and mismanagement of water in the eco-system, had hoped that the referral of powers and the new IGA would make it possible for the new administrative body to address the needs of the eco-system as a whole. However, it appears that what we have is another layer of bureaucracy and no political will to exercise what powers exist or to explore creative possibilities that might extend existing powers.[10]

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7 *Submission 40*, Part 1 of the inquiry, p. 7. See also: MainStream Environmental Consulting and RiverSmart Australia, *Submission 12*, Part 1 of the inquiry, p. 4; Southern Alexandrina Business Association, *Submission 13*, Part 1 of the inquiry, p. 3; Ms Sarah Moles, *Submission 1*, p.1; Ms Liz Yelland, *Submission 8*, p. 2; Mr David Tipping, *Submission 16*, p. 13.

8 *Submission 57*, Part 1 of the inquiry, p. 8.

9 *Submission 24*, Part 1 of the inquiry, p. 5.

10 *Submission 46*, Part 1 of the inquiry, p. 4.

2.13 The National Farmers' Federation (NFF) noted the criticism of the new governance arrangements. However, the NFF did see a positive side to the composition and role of the Ministerial Council:

> …where governments are [required] to provide financial support for decisions, and where all can agree, then the decisions are robust and enduring.[11]

2.14 Although the NFF believes that the IGA arrangements provide for a robust decision making process, the NFF also acknowledged that the Authority's autonomy is constrained by retention of States management control via the Ministerial Council and Basin Official's Committee and that 'the expectations of some individuals and organisations of an autonomous Authority are gone'.[12]

2.15 The submission of the Department of the Environment, Heritage, Water and the Arts (DEHWA) noted that the Basin States would retain a decision-making role through a new Ministerial Council. However, DEHWA described the process as more 'streamlined' because the new Ministerial Council will have only a single representative from each of the Basin States. In contrast, the previous body, the Murray-Darling Basin Ministerial Council had up to three Ministerial representatives from each of the Basin States. DEWHA's submission also describes the Authority as an 'independent, expert' body.[13]

2.16 The committee also notes the evidence of Mr Rob Freeman, Chief Executive of the Authority, who described the relationship between the Basin States and the Authority as follows:

> In undertaking this planning role [for the Basin Plan] the Murray-Darling Basin Authority is independent of basin states, but clearly the role has to be undertaken in partnership with states that will have responsibility for implementing consistent water resource plans.[14]

Alternative governance arrangements

2.17 The committee received a number of suggestions on how the Basin could be better managed. A number of submissions argue for a Commonwealth take-over of the management of the entire Basin. Some submissions support the establishment of an independent body with responsibility for management of the whole-of-Basin either in addition to, or as an alternative to, a Commonwealth take-over of the Basin. For example, the Southern Alexandrina Business Association suggests that whole of Basin

11 *Submission 13*, p. 7.

12 *Submission 13*, p. 7.

13 *Submission 1A*, Part 1 of the inquiry, p. 4.

14 *Committee Hansard*, 26 September 2008, p. 57.

control can only be attained if States referred all necessary powers to the Commonwealth, with States having no power of veto.[15]

2.18 The Conservation Council of South Australia recommends 'immediate and urgent unilateral Commonwealth action to place control of the governance arrangements of the entire basin under a single, unified, independent, science-based, environmentally-focussed body'.[16] Similarly, Ms Liz Yelland argued for a 'strong integrated single management body at arms length from Government in the manner of the Reserve Bank'.[17]

2.19 The committee also heard from a number of witnesses emphasising the importance of regional governance across the Basin. For example, Mr Bruce Brown of the Namoi Catchment Authority told the committee that, particularly in relation to the spending of government money on water infrastructure, a skills based regional governance structure would be better than 'some central entity…preaching to a regional community about how those dollars should be dissipated'.[18] When pressed by the committee, Mr Brown refused to be drawn on whether catchment management authorities should be retained under state government control:

> I think I am on the record that it would be better for the catchment management authorities in the Murray-Darling Basin to become in some way associated with the Murray-Darling Basin Authority and/or the Australian government. It is clear, simple management that I think would make everybody's job a hell of a lot easier … but whether you can actually politically achieve that is another question.
>
> …If the Murray-Darling Basin is under Commonwealth government control, and I am a catchment management entity that is in one of those catchments, does it make sense to be a statutory entity under a state government? I will not say any more.[19]

2.20 In contrast to many of the submissions that the committee received, Dr Willem Vervoot and Mr Floris van Ogtrop saw a role for all levels of government in

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15 *Submission 13*, Part 1 of the inquiry, p. 3. See also: Mr Mitch Williams, MP, South Australian Shadow Minister for Water Security, *Submission 24*, Part 1 of the inquiry, p. 5.

16 *Submission 14*, p. 1. See also: Mr Mitch Williams, MP, South Australian Shadow Minister for Water Security, *Submission 24*, Part 1 of the inquiry, p. 5; and Bruce and Annette Allnutt, *Submission 29*, Part 1 of the inquiry, p. 1.

17 *Submission 8*, p. 3. See also: Mr David Tipping, *Submission 16*, p. 14.

18 *Committee Hansard*, 10 March 2009, p. 20. See also: Mrs Deborah Kerr, National Farmers' Federation, *Committee Hansard*, 13 March 2009, pp 11-12; and Ms Beverly Smiles, Inland Rivers Network, *Committee Hansard*, 13 March 2009, p. 50. The focus of the discussion on this issue in the inquiry was in relation to the Australian Government's water entitlement buyback policy, *Restoring the Balance in the Murray-Darling Basin*, and infrastructure program, the *Sustainable Rural Water Use and Infrastructure Program*. This issue is discussed further in Chapter 5 of the report.

19 *Committee Hansard*, 10 March 2009, p. 26.

the management of the Basin. Dr Vervoot and Mr van Ogtrop described their vision of a 'holistic management approach' through a 'continuum of management decisions':

> Both State governments and Federal government are equally equipped to make management decisions in the Basin. We firmly believe in a holistic management approach that eliminates State borders but maintains local knowledge and management input. A continuum of management decisions from the federal to the local level, supported by University and government research, is the only solution.[20]

A Commonwealth take-over of the governance of the Murray-Darling Basin

2.21 Associate Professor Williams outlined the options open to the Commonwealth to take over management of the Basin:

> The first alternative is a negotiated incremental take-over. This in part is what has been achieved to date through the use of cooperative schemes such as the Murray-Darling Basin Act or references of power by section 51(xxxvii) of the Constitution…
>
> The second alternative, if we do not go down the referral of power approach, is the question of the Commonwealth wresting control over the rivers from the states by using its existing powers.[21]

2.22 In terms of the existing Constitutional powers which the Commonwealth might use to effect a take-over of the Basin, Associate Professor Williams identified section 51(i) of the Constitution (the trade and commerce power) as the primary source of power:

> …it is arguable that the Commonwealth, in the regulation of trade and commerce, could regulate the supply of interstate water, and invalidate those impediments to the movement of interstate water in trade and commerce. So, for instance, the Commonwealth could eliminate caps that state governments put up, or instrumentalities, in the trade from one state to another.[22]

2.23 However, Associate Professor Williams indicated that section 100 of the Constitution would provide grounds for a challenge to the use of the trade and commerce power in this way.[23]

2.24 Other Constitutional powers which Associate Professor Williams stated may be relied upon include: section 51(xx) (the corporations power); section 51(xxix) (the external affairs power); and section 51 (xxxi) (acquisition of property on just terms):

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20 *Submission 6*, pp 1-2.

21 *Committee Hansard*, 10 September 2008, p. 47.

22 *Committee Hansard*, 10 September 2008, pp 47-48.

23 Section 100 of the Constitution provides: The Commonwealth shall not, by any law or regulation of trade or commerce, abridge the right of a State or of the residents therein to the reasonable use of the waters of rivers for conservation or irrigation.

> …the Commonwealth parliament does have significant powers over the rivers, but in relation to things that are done to the rivers by corporations in trade and commerce and in terms of acquisition. It did not have that power in 1901. While it is not a perfect solution, and it would be subject to a High Court challenge by some states – I suspect not all states – and some users, I believe the Commonwealth parliament, having passed a law to deal with significant aspects of the river, would be on strong constitutional ground.[24]

2.25 The committee notes that Associate Professor Williams' preference would be for a single national authority and that could be achieved by a referral of powers from the States. However, the committee also notes the limitations of referrals of power:

> First of all, the Commonwealth stands in the shoes of the states, but only where the states have given them the authority.
>
> So, for instance, South Australia could refer today the whole of the river within its jurisdiction, but the Commonwealth would stand in exactly the same position as South Australia, an end user. It might have more money than South Australia, but it would be an end user. Referrals are usually partial and that is the thing. The incremental move up is the problem. The states give you a half a glass of water and you can play with what is left of it.
>
> Lastly, the states can end the referral. There is provision for the states to pull out of the deal, by gazettal of a governance proclamation.[25]

IGA arrangements are not 'whole-of-basin'

2.26 Another criticism of the IGA governance arrangements is that they do not provide for 'whole-of-basin' control:

> While the Intergovernmental agreement claims to [cover] the 'whole-of-basin', it leaves out of its control vast water resources in the Goulburn, Murrumbidgee and the northern reaches of the Darling. These are vital parts of the region drained by the Murray-Darling system.
>
> Groundwater is excluded from the agreement.[26]

2.27 Other submissions also emphasised that control of the entire MDB system meant including all the tributaries in all of the States under the IGA.[27] The Acheron Valley Watch Inc expressed concern at the exclusion of the Goulburn River and the Murrumbidgee River from the IGA:

> As major tributaries to the Murray River the Goulburn river and the Murrumbidgee river should not be excluded from the Intergovernmental Agreement on the Murray-Darling Basin Reform and in particular, from the

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24 *Committee Hansard*, 10 September 2008, p. 48.

25 *Committee Hansard*, 10 September 2008, p. 49.

26 Coorong, Lakes and Murray Waterkeeper, *Submission 57*, Part 1 of the inquiry, p. 9.

27 Bruce and Annette Allnutt, *Submission 29*, Part 1 of the inquiry, p. 1.

> operation of the 'River Murray System' as established in clause 3.2.9 of the agreement …
>
> This political decision to exclude major tributaries of the Murray from the operation of the River Murray System is *wrong in principle and creates a dangerous precedence*, because it enhances the 'prisoners dilemma' with drastic effects on the state of the environment. The 'prisoners dilemma' describes a perception bias in which many projects of individual actors appear to be relatively small on their own with seemingly negligible impact, but when added up they create a large cumulative negative impact on the River Murray System and the subcatchments of its tributaries.[28]

2.28 The committee notes the evidence of Mr Rob Freeman, Chief Executive of the Authority, that:

- water resources of the Murrumbidgee River and Goulburn River are not excluded from the Commonwealth Water Act, and will be subject to the Basin Plan; and
- water resource plans that apply to those tributaries will have to be consistent with the Basin Plan.[29]

2.29 A description of the area encompassed by the MDB is set out in section 18A of the *Water Act 2007*, and an indicative map of the MDB is set out in Schedule 1A of the *Water Act 2007*.

Role of Indigenous people in decision-making for the Basin

2.30 The Australian Human Rights Commission (AHRC) provided the committee with a detailed submission outlining the importance of the MDB to the Indigenous Owner groups (who identify as 'Indigenous Nations'):

> The Indigenous Nations of the Murray-Darling River Basin possess distinct cultural and customary rights and responsibilities including: a spiritual connection to the lands, waters and natural resources of the Basin; management of significant sites located along the river banks, on the river beds, and sites and stories associated with the water and natural resources located in the rivers and their tributaries; protection of Indigenous cultural heritage and knowledge; accessing cultural activities such as hunting and fishing, and ceremony.[30]

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28 Acheron Valley Watch Inc, *Submission 44*, Part 1 of the inquiry, p. 4 (emphasis in original). See also: Mr Kenneth Pattison, Plug the Pipe, *Committee Hansard*, 26 September 2008, pp 40-41. The committee's report into water management in the Coorong and Lower Lakes discusses the development of the pipeline from the Goulburn River to the Sugarloaf Reservoir to supply water to Melbourne. See: Senate Standing Committee on Rural and Regional Affairs and Transport, *Water management in the Coorong and Lower Lakes (including consideration of the Emergency Water (Murray-Darling Basin Rescue) Bill 2008*, October 2008, pp 47-48.

29 *Committee Hansard*, 26 September 2008, pp 58-59.

30 *Submission 15*, p. 6.

2.31 AHRC noted that historically Indigenous peoples have been excluded from water management and that Indigenous Australians have had little to no involvement in consultations processes, and the development of water policy, resulting in a limited capacity to negotiate enforceable water rights. The AHRC went on to state that governments must work collaboratively and develop policy that deals with Indigenous disadvantage from a holistic perspective, including participation and engagement in governance and water management reform processes in relation to the MDB.[31]

2.32 One of the key recommendations by the AHRC was that statutory provision should be made for mandatory Indigenous membership on the Authority and on the Basin Community Committee.[32]

Committee view

2.33 Given the history of disjointed management of the MDB, the committee understands the appeal of a Commonwealth take-over of the MDB and the establishment of an independent body responsible for the MDB.

2.34 However, the committee also recognises that in the absence of a referral of full powers from the Basin States, any Commonwealth take-over would rely on an omnibus of Constitutional powers. While perhaps welcomed by some Basin States, such a take-over would inevitably be challenged by other Basin States.

2.35 Given the situation in the MDB, what is required right now is cooperation between the Commonwealth and the Basin States, not divisive political manoeuvring. For this reason, the committee feels that the governance arrangements under the IGA represent a positive step for the management of the MDB.

2.36 The committee notes the submission of the AHRC that there should be a role for Indigenous people in decision-making in the Basin. However, the committee notes that the Authority is a governing body, not a representative body. For this reason, the committee's view is that the appropriate selection criteria for members of the Authority is already set out in the *Water Act 2007*, specifically, people with a high level of expertise in one or more of the fields relevant to the Authority's functions and not a member of the governing body of a relevant interest group. The committee notes that Indigenous representation on the Basin Community Committee is provided for in the *Water Act 2007*.

Recommendation 1

2.37 The committee recommends that the Commonwealth work towards a full and unconditional referral of powers relevant to the management of the MDB

31 *Submission 15*, pp 6-7, and 12. See also: Inland Rivers Network, *Submission 9*, p. 2; and National Parks Association of NSW, *Submission 10*, pp 10-11.

32 *Submission 15*, pp 4-5.

and, in the absence of such full referral, consider pursuing other options to provide for complete federal management.

Chapter 3

Implementation of the Basin Plan and water sharing arrangements

Introduction

3.1 This chapter discusses the adequacy of current arrangements in relation to the implementation of the Basin Plan and water sharing arrangements. The focus of the inquiry in this respect was on the timelines for the development and implementation of the Basin Plan and the transition arrangements from existing water resource plans.

Implementation of the Basin Plan

3.2 The Basin Plan is a strategic plan for the integrated and sustainable management of water resources in the Murray-Darling Basin (MDB or Basin).[1] The *Water Act 2007* (Water Act) sets out the mandatory content of the Basin Plan, including:

- limits on the amount of water that can be taken from Basin water resources on a sustainable basis – known as long-term average sustainable diversion limits. These limits will be set for Basin water resources as a whole and for individual water resources;
- identification of risks to Basin water resources, such as climate change, and strategies to manage those risks;
- an environmental watering plan to optimise environmental outcomes for the Basin;
- a water quality and salinity management plan;
- rules about trading of water rights in relation to Basin water resources; and
- the provision of conveyance water to enable the provision of critical human water needs.[2]

3.3 As noted previously, the Murray-Darling Basin Authority (the Authority) is responsible for the preparation, implementation and monitoring of the Basin Plan. In preparing the Basin Plan, the Authority must consult with the Basin States, the Basin Officials Committee and the Basin Community Committee. The Authority may also undertake such other consultation, and publish such information to facilitate consultation, as it considers appropriate.[3]

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1 Explanatory Memorandum, Water Bill 2007, p. 3.

2 *Water Act 2007*, s.22 and s.86B.

3 *Water Act 2007*, s.42.

3.4 Once the Authority has prepared a proposed Basin Plan it must provide a copy to the Basin States. The Basin States will have at least 16 weeks to make submissions to the Authority on the proposed Basin Plan. The Water Act also provides that there will be at least a 16 week period of public consultation on the proposed Basin Plan. The Authority must consider any submissions it receives as part of these consultations and may alter the Basin Plan as a result of its consideration of these consultations.[4]

3.5 The Authority must then provide a copy of the proposed Basin Plan (with any amendments resulting from the consultations) to the Ministerial Council. The Ministerial Council then has a period of six weeks to:

(a) make any comments on the proposed Basin Plan; or

(b) indicate that one or more of the Ministerial Council disagrees with the sustainable diversion limits in the proposed Basin Plan or other parts of the proposed plan.

3.6 Following the consultation with the Ministerial Council, the Authority must consider the matter raised by the Ministerial Council and undertake any further consultations in relation to the matters raised by the Ministerial Council that the Authority considers necessary or appropriate. The Authority must then either confirm the proposed Basin Plan or alter the proposed Basin Plan.

3.7 In the event that the Authority alters the proposed Basin Plan, the amended Plan must again be provided to the Ministerial Council. The Ministerial Council then has three weeks to provide further comment on the amended Basin Plan, or indicate the disagreement of one or more of its members to the sustainable diversion limits or other parts of the amended plan.[5]

3.8 The proposed Basin Plan (or the amended Basin Plan) is then provided to the Minister. The Minister has 12 weeks to consider the Basin Plan, after which the Minister may either adopt the Basin Plan, or return it to the Authority with suggestions for consideration.

3.9 If the Minister returns the Basin Plan to the Authority, the Authority must consider the Minister's suggestions and undertake consultations in relation to the Minister's suggestions as the Authority considers necessary or appropriate. The Authority may amend the Basin Plan following these consultations. The Authority then provides the Minister with the Basin Plan.

3.10 The Minister then has three weeks in which to consider the Basin Plan, and either:

(a) adopt the Basin Plan; or

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4 *Water Act 2007*, s.43.

5 *Water Act 2007*, s.43A.

(b) direct the Authority to make modifications to the Plan and give it to the Minister for adoption.[6]

3.11 The Intergovernmental Agreement on Murray-Darling Basin Reform provides that the first Basin Plan will be made in early 2011.[7] According to the Department of the Environment, Water, Heritage and the Arts' (DEWHA) submission this timeline reflects the 'comprehensive nature and complexity of the Basin Plan'.[8] In evidence to the committee in September 2008, Mr Rob Freeman, Chief Executive of the Authority, indicated that the Authority is working to the 2011 date for the release of the Basin Plan.[9]

Adequacy of Basin Plan implementation

3.12 Dr Arlene Buchan of the Australian Conservation Foundation described the government as being 'on the right track' with the Basin Plan:

> …we need to fix the problems of the entire basin. So I think that the broad government plan is on the right track. It is a whole-of-basin plan. It is seeking to look on a valley-by-valley basis to establish sustainable extraction limits, to establish environmental watering plans to meet the needs of those assets and of course to maintain the natural resource base upon which all our agricultural industries rely.[10]

3.13 However, the committee received a number of submissions expressing the view that a start date of 2011 for the Basin Plan does not reflect the urgency of the situation facing the MDB. For example:

> …the first Basin Plan is not likely to come into operation until 2011. This is far too late for many wetlands in the Basin and in particular the Ramsar listed Coorong and Lakes Alexandrina and Albert.[11]

3.14 Professor Mike Young expressed frustration at the complexity and timelines for the preparation of the Basin Plan under the Water Act:

> The act which was passed in 2007 prescribes a very long, complicated plan with lots of detail. This nation needs a plan yesterday. In fact, it needed a plan months ago to move forward. We still do not have a plan. That needs to be short and it needs to be focused.[12]

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6 *Water Act 2007*, s.44.

7 Intergovernmental Agreement on Murray-Darling Basin Reform (IGA), clause 11.1.

8 *Submission 1A*, Part 1 of the inquiry, p. 5.

9 *Committee Hansard*, 26 September 2008, p. 75.

10 *Committee Hansard*, 26 September 2008, p. 23.

11 The Australian Network of Environmental Defender's Offices, *Submission 11*, p. 2. See also: Professor Diane Bell, *Submission 46*, Part 1 of the inquiry, p. 6; Coorong, Lakes and Murray Waterkeeper, *Submission 57*, Part 1 of the inquiry, p. 9.

12 *Committee Hansard*, 10 September 2008, p. 21.

3.15 Professor Young noted the experience of previous water initiatives in which timelines had expanded despite the urgency of the situation:

> It is important to realise the extent of the government's crisis. The previous intergovernmental agreement, called a National Water Initiative, promised that we would have a plan in place for every river system in Australia to solve the overallocation problem by 2005 and that we would have a new sharing regime in place by 2006. It is now nearly the end of 2008. Need I say more?[13]

3.16 The committee was also told that the current timing of the Basin Plan would not deliver results fast enough for irrigators and many were now seeing the Basin Plan purely as an exit strategy.[14]

3.17 The committee received a number of submissions which highlighted that the preparation of a Basin Plan, to be ready for operation in 2011, would be a significant undertaking. For example, the National Farmers' Federation (NFF) said:

> In many cases, it has taken up to five years to develop individual water sharing plans for water sources. This is because of the need to develop a shared understanding of the complex water management and environmental issues, and develop and agree to the tradeoffs required. Therefore, the time to develop the Basin Plan will be needed to undertake this significant task across the entire Basin.[15]

3.18 Ms Sarah Moles, a riparian landholder and stock and domestic water user in the headwaters of the Condamine catchment in Queensland, stated that, given the complexity of the task, the time-frame for development of the Basin Plan seems 'unrealistic…especially if the community is to be consulted on the draft'.[16]

3.19 The Wentworth Group of Concerned Scientists (Wentworth Group) notes the initiatives of governments to manage water more sustainably, including the Basin Plan. However, the Wentworth Group call for the acceleration of reforms through an interim Basin Plan, which would set long-term goals for the environmental health of the Basin, establish how much water is needed to achieve these goals, and put in place a mechanism to accelerate the buyback of water for environmental purposes.[17]

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13 *Committee Hansard*, 10 September 2008, pp 21-22.

14 Mr Stewart Ellis, Murray Irrigation Ltd, *Committee Hansard*, 19 September 2008, p. 16.

15 *Submission 13*, p. 7. See also: Cotton Australia, *Submission 50*, Part 1 of the inquiry, p. 5; Mr Andrew Gregson, NSW Irrigators Council, *Committee Hansard*, 9 September 2008, p. 33.

16 *Submission 1*, p. 2.

17 *Submission 71*, Part 1 of the inquiry, p. 8. See also: Conservation Council of South Australia, *Submission 14*, p. 7; Dr Arlene Buchan, Australian Conservation Foundation, *Committee Hansard*, 26 September 2008, pp 18-19.

3.20 According to the Wentworth Group an Interim Basin Plan could be prepared in a matter of weeks and 'would give important signals to the market and all users of the Basin on which to begin to plan for the future that confronts us all'.[18]

3.21 Ms Moles suggested a compromise arrangement to put in place a high level Basin Plan within 2 years with more details to be added later:

> I believe it is feasible and desirable to get the foundation principles right and for the community to agree to these within 2 years…The more detailed aspects of the basin-wide Plan should be developed thereafter and in consultation with the regional communities who will have to live with the Plan as implemented at a regional or catchment level.[19]

3.22 Mr Freeman told the committee that it is 'fair to say that you can develop a Basin Plan in any time frame'. However, Mr Freeman went on to state that the amount of time will determine the quality of the Plan. Mr Freeman also acknowledged that 'clearly we have a need for a Basin Plan sooner rather than later'.[20]

3.23 On the specific issue of an interim Basin Plan, Mr Freeman told the committee it is difficult to see how an interim plan could have any real effect, given that it would not be able to affect state water resource plans until 2014 for South Australia, Queensland and New South Wales, and 2019 for Victoria.[21]

Transitional arrangements for existing water resource plans

3.24 The Basin Plan and the new sustainable diversion limits will take effect through water resource plans made by the Basin States. As existing water resource plans expire, they will be subject to a review process established by States. The new plans will have to be compliant with the Basin Plan and will be subject to accreditation by the Commonwealth Minister. Once the sustainable diversion limits have been incorporated into the water resource plans of a State, the State must ensure that water taken is consistent with the sustainable diversion limits.[22]

3.25 Some concern was expressed that allowing existing water resource plans to run to completion is delaying the implementation of the Basin Plan. For example, Mr Terence Korn, of the Australian Floodplain Association, said:

> The fact is that, under the terms of agreement between the Commonwealth and basin states, existing water-sharing plans must complete their term

18 *Submission 71*, Part 1 of the inquiry, p. 18.

19 *Submission 1*, p. 2.

20 *Committee Hansard*, 26 September 2008, p. 75.

21 *Committee Hansard*, 13 March 2009, pp 52-53.

22 *Submission 1A*, Part 1 of the inquiry, p. 6. See also: Queensland Department of Natural Resources and Water, *Submission 12*, pp 2-3.

> before the basin plan, which has yet to be drafted let alone agreed to, is implemented.
>
> The earliest plans terminate in 2014 and some as late as 2017. This means business as usual for the management of water by the basin states for at least the next five to six years or up to 10 years. We are certain that the general community is not aware of this time lag and, in terms of environmental health, what it means for the basin.[23]

3.26 Mr Freeman noted that Schedule 1 to the Water Act outlines the time frame within which the water resource plans must comply. Mr Freeman acknowledged that the Victorian plans did have a longer date until expiration. However, Mr Freeman stated that the Victorian plans must comply with the basic Plan.[24]

3.27 The committee sought Mr Freeman's views on the value of a Basin Plan being prepared for 2011, if it would not be implemented in some areas until 2019:

> The issue is that the basin plan will have coverage over more than half of the basin in 2014. I agree with you that it does not have complete coverage until Victoria is included, but more than half the water resources for the Murray-Darling Basin will be covered, with those plans in Queensland, New South Wales and South Australia being compliant in 2014. Historically, water resource planning in states, on average, takes about five years, although the planning time is variable, because these water resource plans can be both broad in scope and sophistication, or relatively minor for some of these very small groundwater resources, for instance. Water resource planning is very much a bottom-up-driven process. It is about: given an amount of water that is defined, how can we best use that? That has been a community-driven process. By introducing a basin plan in 2011, those states will have to condense that water resource planning into three years, and some of them significantly less than that.[25]

3.28 Representatives of DEWHA denied that the transitional arrangements would delay the results of the Basin Plan for five to ten years. A DEWHA representative emphasised that the Basin Plan was only part of the solution to the problems in the MDB:

> The basin plan aims to deal with problems in the medium and longer term. …we believe that that is a serious and difficult task that must be done properly. In the shorter term we are administering programs for the government to recover water from consumptive users for application to the environment. In the immediate term we are working actively with South Australia and the [Murray-Darling Basin Commission] to develop management options for the Lower Lakes for governments to consider. We

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23 *Committee Hansard*, 10 March 2009, p. 39. See also: Dr Arlene Buchan, Australian Conservation Foundation, *Committee Hansard*, 26 September 2008, pp 18-19.

24 *Committee Hansard*, 26 September 2008, p. 59.

25 *Committee Hansard*, 13 March 2009, p. 53.

> are doing all those things for the long term, the medium term and the short term.[26]

3.29 The NFF's submission comments on suggestions that the transitional arrangements will delay the implementation of the Basin Plan until the as late as 2014:

> Many have commented that the Basin Plan will not really take effect until the transitional water sharing plans have ceased (many are due in 2014). However, the Water Act 2007 states that water sharing plans, many of which are due to be reviewed in 2009, are required to **not** be less consistent than the Basin Plan. The reality is that these reviews in 2009 will more likely pre-date the Basin Plan, leaving a window of less than three years before most water sharing plans will be adjusted to take into account the Basin Plan.[27]

3.30 Cotton Australia did not support any change being made to shorten the transition period:

> Cotton Australia believes if these arrangements are for some reason hastened in order to provide respite to the existing situation in the Lower Lakes [then] this would jeopardise the integrity of the State water sharing plans as well as put such an overburdening layer of economic uncertainty on the sector as to potentially risk the very significant base upon which investment in irrigated agriculture exists.[28]

3.31 Similarly, a representative of the New South Wales Department of Water and Energy foreshadowed the issue of liability for reduction in water availability as a potential problem in bringing forward the implementation of the Basin Plan:

> Our view is that we have just completed very comprehensive water sharing plans for all of our regulated river valleys and we are completing water sharing plans for our unregulated river valleys, proposed by 2011. They define the environmental share within the particular water source from which you can then articulate the security of supply for water for consumptive use. We have already legislated in New South Wales that after the terms of those plans the first three per cent reduction will be borne by irrigators. Of the next three per cent, two thirds will be borne by the Commonwealth – one-third by New South Wales – and for anything over that six per cent, which is a liability that will be realised in 2014, the cost of any further reductions in water availability will be borne fifty-fifty by the state and the Commonwealth. We have legislated for that, and in the development of the intergovernmental agreement through the Murray-Darling Basin reform we have asked that the Commonwealth, that will now be preparing the basin-wide plan which will establish how much water is to be recovered, should bear all of that liability. I am certain that if an interim

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26 Mr Tony Slatyer, DEWHA, *Committee Hansard*, 19 September 2008, pp 74-75. See also: Mr Rob Freeman, Murray-Darling Basin Authority, *Committee Hansard*, 13 March 2009, p. 57.

27 *Submission 13*, p. 7 (emphasis in original).

28 *Submission 50*, Part 1 of the inquiry, p. 5.

> basin plan were to be developed then that issue of liability would have to be considered.[29]

Committee view

3.32 There are no quick fixes available for the Murray-Darling Basin. Winding back overallocation and over use of water resources which have been taking place for the better part of a century will take time. The committee notes the views of the Chief Executive of the Murray Darling Basin Authority, Mr Rob Freeman, that using the Basin Plan as a short term measure would detract from its role in the longer term management of the Basin:

> …while the Basin Plan aims to be more adaptive than the current state plans and better placed to deal with the current drought, climate change and the legacy of past decisions, there are risks of it becoming the mechanism for delivery of short-term tactical responses to assist in the Coorong and Lower Lakes. Addressing these issues would direct attention from the strategic objectives of the Basin Plan.[30]

3.33 It takes time to develop a water resource management plan, to consult on a plan and to implement a plan. The committee notes the views put forward during the course of the inquiry that an interim Basin Plan could be developed in a reasonably short time frame. However, the committee notes further views of Mr Freeman that the amount of time taken to develop the Basin Plan will determine the quality of the Basin Plan.

3.34 The committee believes that the Authority is well aware of the competing pressures on it – the need for a Basin Plan sooner rather than later, but that such a plan is complex and shortening timelines will impact on the quality of the Plan.

3.35 The committee notes the concern expressed during the course of the inquiry that the transitional arrangements will delay the implementation of the Basin Plan. The committee also notes the arguments against shortening the transition period for implementing State water resource plans which are consistent with the Basin Plan.

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29 Mr David Harriss, New South Wales Department of Water and Energy, *Committee Hansard*, 18 September 2008, p. 31.

30 *Committee Hansard*, 26 September 2008, p. 57.

3.36 The committee recognises that the Basin Plan is not intended as a short-term solution to the problems of the Murray-Darling Basin. It is a medium- to long-term sustainable management plan for the Basin. For that reason, the committee recommends that the Basin Plan should be implemented as set out in the Water Act, and be made available by early 2011, as provided for in the IGA.

Recommendation 2

3.37 The committee recommends that the Basin Plan be implemented as set out in the Water Act, and made available by early 2011, as provided for in the IGA but also pursue all options with states to expedite the end of transitional arrangements and application of the Basin Plan at the earliest opportunity possible.

Chapter 4

Long-term prospects for the management of Ramsar wetlands in the Murray-Darling Basin

Introduction

4.1 The Ramsar Convention on Wetlands of International Importance (Ramsar Convention) is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.[1] At the time of joining the Ramsar Convention, each party designates at least one suitable wetland for inclusion on the List of International Important Wetlands (Ramsar List). The addition of a site to the Ramsar List confers upon it the prestige of international recognition and expresses a government's commitment to take all steps necessary to ensure the maintenance of the ecological character of the site. Parties are expected to designate additional suitable wetlands for the Ramsar List or extend the boundaries of those already included. Wetlands are selected for the Ramsar list on the basis of their international significance in terms of ecology, botany, zoology, limnology or hydrology.[2]

4.2 There are 16 Ramsar wetlands in the Murray-Darling Basin (MDB or Basin), as shown in Figure 1.

4.3 This chapter considers the long term prospects of the management of Ramsar wetlands. In particular, the challenges facing governments in managing Ramsar wetlands and the steps that the Australian Government is taking to address those difficulties. This chapter contains a brief discussion on the provision of adequate environmental water to Ramsar wetlands. This issue is considered in greater detail in Chapter 5, which discusses the acquisition and provision of environmental water across the MDB.

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1 Ramsar Convention on Wetlands of International Importance (Ramsar Convention) website: http://www.ramsar.org/.

2 Ramsar Convention, *Ramsar information paper No. 4: The List of Wetlands of International Importance ('Ramsar List')*. Available at: http://www.ramsar.org/about/info2007-04-e.pdf.

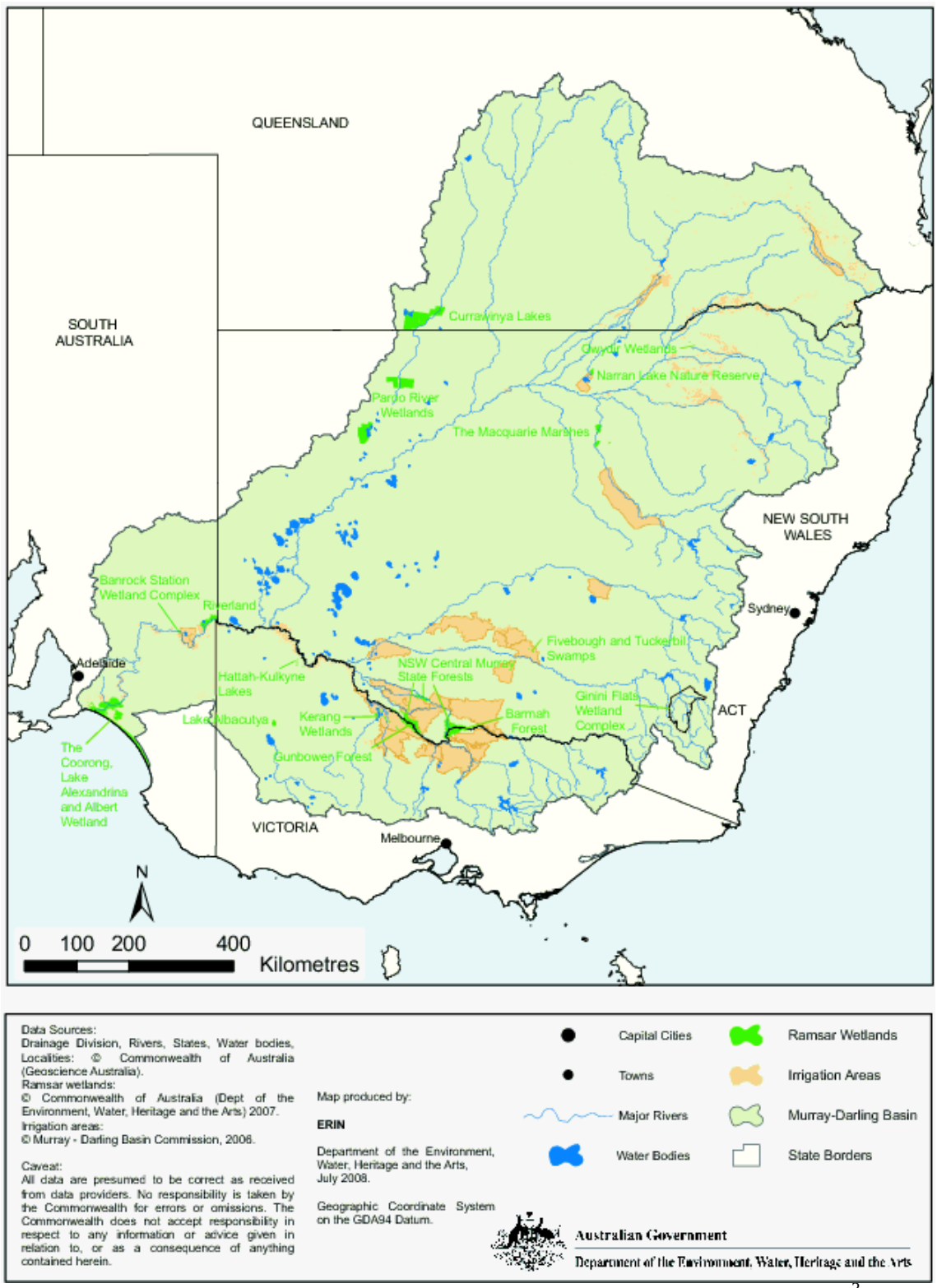

Figure 1: Ramsar Convention wetlands in the Murray-Darling Basin.[3]

3 Australian Bureau of Statistics, *Water and the Murray-Darling Basin, A Statistical Profile, 2000–01 to 2005–06*, 15 August 2008, p. 20. Available at: http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4610.0.55.007Main+Features12000-01%20to%202005-06?OpenDocument.

Current status of Ramsar wetlands in the Murray-Darling Basin

4.4 The committee's report for the first part of this inquiry detailed the parlous ecological condition of the Coorong and Lower Lakes Ramsar wetlands. Low flows into Lakes Alexandrina and Albert have resulted in the drying of wetland habitat, steadily increasing levels of salinity have exposed sulphur bearing sediments which have oxidised to form acid sulfate soils, releasing sulphuric acid into the lakes. In the Coorong, the silting up of the mouth has resulted in reduced tidal exchange, particularly in the South Lagoon. When coupled with a reduction of fresh groundwater seepage and a reduction in runoff from the upper southeast drainage scheme area, steady evaporation has resulted in worsening hypersaline conditions which are exceeding the levels that even the specialised ecosystems in the area are able to cope with.[4]

4.5 In this part of the inquiry, the committee received several submissions outlining the deteriorating state of several of the other Ramsar wetlands within the Basin. For example, the National Parks Association of NSW (NPA) highlighted the condition of the NSW Central Murray State Forests site:

> There is strong evidence to indicate that river regulation, over-allocation of water for irrigation, and industrial logging and associated activities, are causing a substantial and severely detrimental alteration in the ecological character of the NSW Central Murray State Forests Ramsar site.
>
> The ecological condition of the region in which the site occurs has been classified as Very Poor by a recent systematic audit, with fish and macroinvertebrate communities both considered to be in very poor condition. The hydrological changes to the site have been substantial, with major changes in the frequency, size and duration of flood events, and much reduced breeding of colonially nesting bird species.
>
> The health of River Red Gum forests has declined markedly, with all recent studies indicating that 70-80% of River Red Gum trees are either stressed or dying. Terrestrial species dependent on the site are also in decline, with iconic threatened species such as the Superb Parrot and Barking Owl still decreasing, and reporting rates reduced for many important woodland bird species.[5]

4.6 Dr Bill Phillips of Mainstream Environmental Consulting and Riversmart Australia, and a former Deputy Secretary General of the Ramsar Convention, gave evidence to the committee of the poor ecological condition of several of the Ramsar wetlands in the MDB:

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4 See Senate Standing Committee on Rural and Regional Affairs and Transport, *Water management in the Coorong and Lower Lakes (including consideration of the Emergency Water (Murray-Darling Basin Rescue) Bill 2008*, October 2008, pp 21-24.

5 *Submission 10*, p. 2.

> I would consider that the condition of the Macquarie Marshes system is probably as bad as the Coorong currently and has been as bad for several years. Narran Lakes has the occasional reprieve, as it did earlier this year, but overall it is not good. In the Lower Gwydir system there are huge problems, which we do not have time to go into here. One particular part of that site has been completely neglected for several years in terms of providing water to it. One part of the Fivebough-Tuckerbil Swamps system near Leeton, the Tuckerbil part, suffers because of New South Wales government difficulties in that it is crown land and grazing lease and that very little attention is given to maintaining its Ramsar values.[6]

4.7 Governments across the Basin states also recognise the poor condition of Ramsar wetlands with the following statement included in the preamble to the Intergovernmental Agreement on Murray-Darling Basin Reform (IGA):

> The parties recognise that the extreme drought has exacerbated the Basin's environmental stress. Continued low flows and lack of natural flooding to Ramsar and other important environmental sites, including the Lower Lakes, Coorong, the Murray Mouth and the Murray Red Gum Forests, are resulting in serious environmental degradation.[7]

Prospects for the long-term management of Ramsar wetlands

Challenges to the management of the Ramsar wetlands

4.8 There are a number of challenges to be addressed in the management of Ramsar wetlands, including: the provision of adequate water to the Ramsar sites; the complexity of management arrangements due to state, territory and Commonwealth government involvement; and securing sufficient human and financial resources for the management of these sites.

Supply of adequate environmental water

4.9 The primary challenge to the management of Ramsar wetlands in the MDB is the provision of adequate water to the sites, as outlined in the Department of the Environment, Water, Heritage and the Art's (DEWHA) submission to the committee:

> Management challenges facing the Ramsar wetlands in the Murray-Darling Basin include provision of adequate environmental flows (volumes, timing, frequency and duration), environmental degradation as a result of invasive non-native species, and adaptation to the impacts of climate change.[8]

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6 *Committee Hansard*, 9 September 2008, p. 105.

7 Intergovernmental Agreement on Murray-Darling Basin Reform (IGA), Preamble, paragraph 2.

8 *Submission 1A*, Part 1 of the inquiry, p. 10.

4.10 In a 2008 report to the Ramsar Secretariat on the progress of the implementation of the Ramsar Convention, DEWHA expanded on the difficulties in obtaining adequate water for Ramsar sites:

> The greatest difficulty in implementing the [Ramsar] Convention in this triennium has been providing adequate volumes of water to Ramsar sites. This has meant that many Ramsar sites are under stress and the challenge of managing sites for wise use when there is insufficient water to meet human, agricultural and environmental needs has been significant.
>
> Balancing these demands and supplying sites with sufficient water to meet their ecological needs in the context of historical water-use practices requires management and reform within catchments. This continues to be a complex and contentious process. The ongoing record drought conditions are exacerbating the pressure being placed on these already stressed systems.
>
> Wise use of our water resources in the face of long-term climate change is also a key challenge for Australia.[9]

4.11 In its submission to the committee the CSIRO stated that the water regimes for many Ramsar sites in the Murray-Darling Basin have been greatly altered as a result of water resource development. The CSIRO went on to say that the provision of adequate environmental flows for Ramsar sites needs to consider both the degradation already caused by water resource development and the likely additional stress from climate change:

> Providing adequate environmental flows will, in many cases across the Basin, require significant reductions in the volumes of consumptive water use, changes in the way in which dams are operated to capture flood waters, and consideration of investment in infrastructure to facilitate environmental watering of floodplains.[10]

4.12 The National Farmers' Federation (NFF) noted that Ramsar wetlands are not the only environmental assets in the Basin and it may not be possible to save every environmental asset. The NFF stated that it expects that tradeoffs may need to occur against the social and economic values of regional communities.[11]

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9 Department of the Environment, Water, Heritages and the Arts (DEWHA), *National Report on the Implementation of the Ramsar Convention on Wetlands: National Report to be submitted to the 10th Meeting of the Conference of Contracting Parties, Republic of Korea, 28 October – 4 November 2008* (2008 Report to Ramsar Secretariat), p. 15. Available at: http://www.environment.gov.au/water/publications/environmental/wetlands/ramsar-report10.html.

10 *Submission 2*, p. 5.

11 *Submission 13*, p. 8.

4.13 The committee sought to determine the extent to which modelling could be done of the benefits to Ramsar wetlands in the scenario of water being released further up the Murray-Darling system. Dr Tom Hatton of the CSIRO told the committee:

> We could at least model the flows through those sites, which is one step short of saying, 'And you will save this many red gum trees along the way.' But we could certainly say what the flows through those wetlands would be.[12]

4.14 The submission of the Murray-Darling Basin Commission stated:

> It is expected that the arrangements enabled by the *Water Act 2007*, specifically the creation of a Murray-Darling Basin Authority which can set sustainable diversion limits, will substantially address [the supply of adequate environmental flows to Ramsar wetlands].[13]

4.15 The provision of adequate environmental water is discussed in greater detail in Chapter 5 in relation to the provision of environmental water to sites across the MDB.

Other issues in relation to the management of Ramsar sites

4.16 Representatives for DEWHA acknowledged that some of the complexity in management of Ramsar wetlands is due to the different levels of government involved. The following example relates to the Coroong and Lower Lakes:

> **…**different levels of government have different responsibilities in different ways…We can recite Australia's responsibilities under the Ramsar convention and other relevant international instruments. As it is state government property, the state has an underlying responsibility for the management of the area. The Commonwealth fully respects that but there are some decisions that the Commonwealth needs to take and there are other decisions that South Australia needs to take. When it comes to the management of river flows in the Murray system, the Murray-Darling Basin Commission and its processes have to take some decisions.[14]

4.17 In its report to the Ramsar Secretariat in 2008, DEWHA identified a further challenge to the management of Ramsar wetlands in Australia:

> Another difficulty continues to be securing sufficient human and financial resources to implement the Convention consistently and effectively across all sites and across all jurisdictions.[15]

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12 *Committee Hansard*, 9 September 2008, p. 17.

13 *Submission 4*, p. 1.

14 Mr Tony Slatyer, DEWHA, *Committee Hansard*, 19 September 2008, p. 74. See also: Sarah Moles, *Submission 1*, p. 5.

15 2008 Report to Ramsar Secretariat, p. 15.

Addressing the challenges for management of Ramsar wetlands

4.18 DEWHA's submission outlines how the Australian and state governments are addressing the challenges they face in the management of Ramsar wetlands:

> The Australian Government, with the states, is progressively improving the management and reporting framework for Australia's Ramsar wetlands to better address these threats and maintain the ecological character of the sites. The approach for each site incorporates: improving the understanding of the needs and condition; better planning; providing additional environmental flows; and investment in complementary on-ground works, scientific research, monitoring and reporting.[16]

4.19 DEWHA's submission highlighted the following specific actions the Australian Government is taking in relation to the management of the Ramsar sites:

- development of an Ecological Character Description (ECD) for each Ramsar wetland, using the *National Framework and Guidance for Describing the Ecological Character of Australian Ramsar Wetlands*. The ECDs inform the future management and monitoring of these sites and provide an enhanced information base against which to assess potential impacts of actions on internationally important wetlands;[17]
- development and implementation of Ramsar wetland site management plans, in accordance with the Australian Ramsar Management Principles;
- developing a Ramsar Rolling Review approach to report on the condition of Australia's Ramsar wetland sites and inform future management and investment priorities;
- provision of environmental water held by the Commonwealth Environmental Water Holder to Ramsar wetlands;
- incorporation of an Environmental Watering Plan in the Basin Plan;
- The Living Murray Initiative which aims to recover up to an average of 500 gigalitres of water per annum by June 2009 to provide increased environmental flows to six Icon sites (which include components of Ramsar

16 *Submission 1A*, Part 1 of the inquiry, p. 10.

17 The *National Framework and Guidelines for Describing the Ecological Character of Australian Ramsar Wetlands* is the second module under the National Guidelines for Ramsar Wetlands – Implementing the Ramsar Convention in Australia, which is discussed in paragraph 4.31 below.

wetlands) and undertake complementary on-ground works and measures at the sites;[18] and

- investment in the Macquarie Marshes and Gwydir Wetlands Ramsar sites through the NSW Wetlands Recovery Program and the River Environmental Restoration Program.[19]

Shortcomings in the management of Ramsar wetlands

4.20 The committee heard from a number of witnesses highlighting how, despite these measures, not enough is being done to ensure the protection and long-term sustainable management of Ramsar wetlands.

Obligations in response to the change in ecological character of a Ramsar wetland

4.21 Submissions and evidence to the inquiry were particularly critical of Australia's efforts to maintain the ecological character of its Ramsar wetlands, particularly those in the MDB. For example, the Inland Rivers Network (IRN) noted that Australia was the first country to designate a Ramsar wetland, and has subsequently designated 65 wetlands as Ramsar wetlands. However, IRN's submission went on:

> Australia's record of maintaining the ecological character of Ramsar-listed wetlands and promoting the sustainable management of all wetlands, both of which are required under the Ramsar Convention, is less impressive. The health of many of the Ramsar-listed wetlands in the Murray-Darling Basin is in rapid decline.[20]

4.22 Ms Sarah Moles described Australia's approach to Ramsar-listing of sites as 'somewhat passive'.[21] The joint submission of Mainstream Consulting and RiverSmart Australia noted that, historically, Australia has not afforded its Ramsar wetlands the same status and resources for management as it does for World Heritage sites.[22]

4.23 Under the Ramsar Convention, parties are obliged to inform the Ramsar Secretariat if the ecological character of any Ramsar-listed wetland has changed, is

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18 The six Icon sites are: Barmah-Millewa Forest; Gunbower and Koondrook-Perricoota Forests; Hattah Lakes; Chowilla Floodplain and Lindsay-Wallpolla Islands; Lower Lakes, Coorong and Murray Mouth; and the River Murray Channel. The February 2009 progress report on the Living Murray Initiative stated that 167.68 gigalitres of water has been recovered. See Murray-Darling Basin Authority, *The Living Murray: Environmental Water Recovery Progress Report*, February 2009, p.2. Available at: http://www.mdba.gov.au/files/TLM_WR_prog_rep_FEB09.pdf.

19 *Submission 1A*, Part 1 of the inquiry, pp 10-11.

20 *Submission 9*, Attachment: *Protecting Australia's Endangered Wetlands: A Proposal for a National Wetlands Initiative*, p. 2.

21 *Submission 1*, p. 5.

22 *Submission 12*, Part 1 of the inquiry, p. 5.

changing, or is likely to change as the result of technological developments, pollution or other human interference. Australia has notified the Ramsar Secretariat of the change in ecological character to the Coorong and Lower Lakes site. According to DEWHA, while this site was changing prior to being Ramsar listed, it has further declined since being listed in 1985.[23]

4.24 DEWHA also informed the committee that in October 2008 a further update was provided to the Ramsar Secretariat on the condition of the Coorong and Lower Lakes Ramsar site. That update was informed by current activities and discussed long term options for this site.[24]

4.25 The NPA described the processes in place for the Australian Government to assess and notify of changes in ecological character of Ramsar sites as 'inadequate':

> Major improvements are needed to establish baseline information sets and put in place adequate monitoring regimes. Damaging uses, such as industrial logging, should not be allowed in Government owned Ramsar wetlands and steps should be taken to upgrade such wetlands to full protected area status as National Parks.[25]

4.26 The committee received evidence on other actions that a party to the Ramsar Convention may take in the event of the deterioration of the ecological character of a Ramsar site:

> Under the Ramsar convention there is something called the Montreux Record. It has a very long title that basically means threatened sites. If a country detects that one of its Ramsar areas is in trouble, it is expected to advise the Ramsar secretariat of that, which Australia has done in the case of the Coorong and the lakes. There is also then a voluntary action which countries can take to place such sites publicly on what is called the Montreux Record of threatened sites. To date, the Australian government has not done that for any of its sites.[26]

4.27 In 2006, an Ecological Character Description for the Coorong and Lower Lakes Ramsar site, prepared for the South Australian Department for Environment and Heritage recommended 'that consideration be given to including the site on

23 *Submission 1A*, Part 1 of the Inquiry, p. 11.

24 DEWHA, answers to questions on notice, 13 March 2009 (received 9 April 2009); and *Submission 1A*, Part 1 of the inquiry, p. 11.

25 *Submission 10*, p. 6.

26 Dr Bill Phillips, Mainstream Environmental Consulting and Riversmart Australia, *Committee Hansard*, 9 September 2008, p. 107.

Ramsar's Montreux Record of sites where change in ecological character is occurring, or has taken place'.[27]

Other issues

4.28 IRN provided the committee with its proposal for a 'National Wetland Initiative'. In its proposal, the IRN identified a number of shortcomings in the current approach to managing wetlands, including:

- a lack of provisions in the *Water Act 2007* specifically designed to strengthen Australia's Ramsar program; and
- the slow rate of recovery of environmental water for wetlands through the Living Murray Initiative and the Commonwealth's water entitlement buyback scheme.[28]

4.29 The NPA also noted that the decline of Ramsar sites continues despite programs such as the Living Murray Initiative.[29]

4.30 Submissions also noted that legislative efforts, through the *Environmental Protection and Biodiversity Conservation Act 1999*, have been ineffective in the management of Ramsar wetlands. For example, Ms Moles highlighted these inadequacies in the legislation:

> In spite of a Ramsar trigger, the [*Environmental Protection and Biodiversity Conservation Act 1999*] is powerless to deal with the cumulative impacts of over-allocation - the key cause of decline. Issues such as floodplain harvesting and floodplain development also need to be dealt with if Ramsar obligations are to be fulfilled.[30]

4.31 The Department of the Environment, Water, Heritage and the Arts, in a report to the Ramsar Secretariat on the implementation of the Ramsar Convention, notes the development of the 'Australian National Guidelines for Ramsar Wetlands – Implementing the Ramsar Convention in Australia', to supplement the EPBC Act:

> The aim of the guidelines is to facilitate improved management of Ramsar sites and maintenance of ecological character, in line with Australia's

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27 W. Phillips and K. Muller, *Ecological Character Description: Coorong, Lakes Alexandrina and Albert Wetland of International Importance*, South Australian Department for Environment and Heritage, 2006, p. 8. Available at: http://www.environment.sa.gov.au/biodiversity/pdfs/coorong_exec_summary.pdf.

28 *Submission 9*, Attachment: *Protecting Australia's Endangered Wetlands: A Proposal for a National Wetlands Initiative*, pp 1-2. The IRN's National Wetlands Initiative was also supported by the National Parks Association of NSW, *Submission 10*, p. 1.

29 *Submission 10*, pp 2-3.

30 *Submission 1*, p. 5. Section 16 of the *Environmental Protection and Biodiversity Conservation Act 1999* imposes approval requirements on activities that are likely to have a significant impact on the ecological character of a Ramsar wetland. See also: Mainstream Consulting and RiverSmart Australia, *Submission 12* to Part 1 of the inquiry, p. 5.

> commitments under the Ramsar Convention and responsibilities under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The EPBC Act includes specific Ramsar provisions. The guidelines will provide a more coherent framework for Ramsar implementation in Australia and provide jurisdictions and other interested parties with clear guidance on related policies and procedures.
>
> The guidelines are being developed as a series of modules, or chapters, on topics including: introduction to the Ramsar Convention; process for nominating Ramsar wetlands; developing Ecological Character Descriptions (ECDs); requirements for mapping Ramsar wetlands; and management planning guidelines.[31]

Ramsar Snapshot Study

4.32 During the course of the inquiry the Federal Government released a preliminary review of the current status and management of all of Australia's Ramsar wetlands (the Ramsar Snapshot Study).[32] The Ramsar Snapshot Study notes that as a Party to the Ramsar Convention, Australia is required to meet its obligations under the Convention in terms of reporting, management planning and provision of supporting information on Ramsar wetlands:

> These obligations are implemented at the national level through the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and associated regulations, policies and funding programs.[33]

4.33 The Ramsar Snapshot Study notes that currently 'Australia does not have a systematic reporting process to allow government stakeholders and other resource managers to gain an overarching view of the state of Australia's Ramsar estate at any given time'.[34]

4.34 Key information gaps found by the Ramsar Snapshot Study and recommendations for priority work, included:

- The need to continue to develop and implement wetland survey and mapping programs for Ramsar wetland sites;
- The need to develop and implement a standardised national scale of tenure categories to better understand and compare the tenure classifications across Ramsar sites;

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31 2008 Report to Ramsar Secretariat, p. 12.

32 BMT WBM Pty Limited for the Department of the Environment and Water Resources, *Ramsar Snapshot Study – Final Report 2007* (Ramsar Snapshot Study), released 2 February 2009. Available at: http://www.environment.gov.au/water/publications/environmental/wetlands/ramsar-snapshot-study.html.

33 Ramsar Snapshot Study, p. I.

34 Ramsar Snapshot Study, p. I.

- The need to develop a systematic method for describing, comparing and reporting threats and impacts (and their magnitude) among and within Australia's Ramsar wetlands; and
- The need to develop a formal mechanism facilitating the transfer of administrative documents (such as management plans, Ramsar Information Sheets, and Ecological Character Descriptions) between the Commonwealth and State/ Territory agencies.[35]

Committee view

4.35 The evidence that the committee has received demonstrates that mismanagement and a lack of co-operation and coordination at all levels of government, in addition to a lack of water, has resulted in a number of Ramsar wetlands in the MDB being under considerable ecological stress.

4.36 The committee notes, and agrees with, the criticism that historically Ramsar wetlands have not been accorded the same status and level of resources as other environmental assets, such as World Heritage Areas.

4.37 The committee is concerned at the declining ecological condition of a number of Ramsar wetlands across the MDB. The committee is particularly concerned that Australia has not taken seriously its obligations under the Ramsar Convention to inform the Ramsar Secretariat if the ecological character of a Ramsar wetland has changed.

4.38 The provision of adequate water is one of the priorities for improving the condition of Ramsar wetlands in the MDB. The committee understands that the Australian Government is addressing this issue through the purchase of water entitlements for the Commonwealth Environmental Water Holder and, in the longer term, through the Environmental Watering Plan in the Basin Plan. The committee encourages the government to continue to investigate opportunities to supply adequate water to Ramsar wetlands.

4.39 The committee notes the evidence that it has heard that the management of Ramsar wetlands, due to the tenure of the land involved, is often a cooperative effort between the Commonwealth and State and Territory governments. DEWHA has indicated that the Australian Government is assisting States to meet their obligations in relation to the management of Ramsar wetlands. The committee encourages the Australian Government to continue to work cooperatively with the States to assist in their management of Ramsar wetlands.

4.40 The committee believes that the Ramsar Snapshot Study has identified some important information gaps and areas for the improved management of Ramsar

35 Ramsar Snapshot Study, p. IV.

wetlands. The committee recommends that the work identified in the Ramsar Snapshot Study as key information gaps and priority work be undertaken by DEWHA.

Recommendation 3

4.41 The committee recommends that the work identified in the Ramsar Snapshot Study as key information gaps and priority work be undertaken by the Department of the Environment, Water, Heritage and the Arts.

Chapter 5

Environmental water in the Murray-Darling Basin

Introduction

5.1 The committee received extensive submissions and evidence on the Australian Government's policies in relation to the acquisition and provision of environmental water in the Murray-Darling Basin (MDB or Basin).

5.2 This information covered a broader range of issues than the supply of adequate environmental flows to Ramsar wetlands (Term of Reference 2(c)). For this reason the committee has decided to include an additional chapter in the report to discuss some of the issues raised in relation to environmental water in the MDB. The committee received a limited amount of evidence which related specifically to the provision of adequate environmental water to Ramsar wetlands sites. That issue is covered in Chapter 4 of the report.

5.3 The focus of the discussion in the inquiry was two aspects of the government's water policy, *Water for the Future*: the *Restoring the Balance in the Murray-Darling Basin* program, where water entitlements are purchased from willing sellers to use for environmental purposes; and the *Sustainable Rural Water Use and Infrastructure Program*, aimed at improving water use efficiency in rural Australia.

5.4 The chapter begins with an overview of *Restoring the Balance in the Murray-Darling Basin* and the *Sustainable Rural Water Use and Infrastructure* programs. The chapter then moves on to a discussion of the issues raised in the inquiry in relation to the acquisition and provision of environmental water in the Murray-Darling Basin.

Water Entitlement Buyback

5.5 A key component of the Australian Government's water policy, *Water for the Future*, is the *Restoring the Balance in the Murray-Darling Basin* (Water Entitlement Buyback), which will invest $3.1 billion over 10 years purchasing water for the environment:

> The goal of Restoring the Balance in the Murray-Darling Basin is to acquire water entitlements from willing sellers that represent value for money, and use the water allocated to them for the environment. This will improve the health of the Basin's rivers, wetlands and floodplains.[1]

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1 Department of the Environment, Water, Heritage and the Arts (DEWHA), *Water for the Future: Restoring the Balance in the Murray-Darling Basin Program Factsheet*, March 2009. Available at: http://www.environment.gov.au/water/publications/mdb/pubs/restoring-balance.pdf.

5.6 The first round of purchases under the Water Entitlement Buyback was conducted in 2007-08. The Australian Government allocated $50 million for entitlement purchases in the first round. The government is in the process of finalising purchases in the first round, but as at 1 June 2009, the Department of the Environment, Water, Heritage and the Arts' (DEWHA) website stated that approximately 26 gigalitres (GL) of water, worth $37 million, had been purchased in the first round.[2]

5.7 The government is currently running tenders for the Water Entitlement Buyback in the northern and southern Basin which close on 30 June 2009.

5.8 On 28 May 2009, the Prime Minister and Minister for Climate Change and Water, announced that the Australian Government is buying almost 240 GL of water entitlements for $303 million from the Twynam Agricultural Group. The water will be used exclusively for environmental flows.[3]

5.9 As part of the Water Entitlement Buyback, the government has also announced a new exit package to assist small block irrigators. The government will offer up to $150,000 as a special exit payment, along with other transitional assistance, to eligible irrigators on 15 hectares or less who agree to sell all their water entitlements to the Commonwealth.[4]

5.10 During the inquiry, reference was also made to the Pilot Environmental Water Purchase project, conducted by the Murray-Darling Basin Commission (MDBC) as part of the Living Murray Initiative. In 2007-08, the MDBC purchased 13 GL of irrigation entitlements from sellers in the southern Basin, mostly New South Wales, for future environmental use.[5]

Infrastructure Program

5.11 The Water Entitlement Buyback is only part of the Federal Government's *Water for the Future* policy which is aimed at improving environmental water flows. Under the *Sustainable Rural Water Use and Infrastructure Program* (Infrastructure

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2 DEWHA website, *Outcomes from 2007-08 Restoring the Balance in the Murray-Darling Basin Program (water entitlement purchasing*, updated 1 June 2009. Available at: http://www.environment.gov.au/water/policy-programs/entitlement-purchasing/2007-08.html.

3 The Hon. Kevin Rudd MP, Prime Minister, and Senator the Hon. Penny Wong, Minister for Climate Change and Water, 'Historic purchase of water for the environment', Media Release, 28 May 2009.

4 DEWHA website, *Water entitlement buyback in the Murray-Darling Basin (water buybacks)*, updated 24 April 2009. Available at: http://www.environment.gov.au/water/mdb/entitlement-purchasing/index.html.

5 See: Murray-Darling Basin Commission, *Annual Report 2007-08*, p. 20, available at: http://www.mdbc.gov.au/subs/annual_reports/AR_2007-08/pdf/MDBC-AR-0708.pdf. For general information on The Living Murray Initiative see: http://www.mdba.gov.au/programs/tlm.

Program) the government has committed $5.8 billion to increase water use efficiency in rural Australia. Investment will be principally directed towards projects that: deliver substantial and lasting returns of water for the environment; secure a long-term future for irrigation communities, and deliver value for money in the context of the first two tests.[6]

5.12 Projects in the Infrastructure Program include:

- State priority projects: the Commonwealth will provide funding for significant state-based water infrastructure and reform projects in South Australia, New South Wales, Victoria, Queensland and the Australian Capital Territory;[7]
- Private Irrigator Infrastructure Operators Program: which is directed at assisting private irrigation infrastructure operators located in the Murray-Darling Basin to modernise their irrigation infrastructure to achieve water savings and improved water use efficiency. The program includes the Irrigation Modernisation Planning Assistance project which helps irrigation water providers to develop modernisation plans for their districts. These are plans to upgrade irrigation infrastructure and assess options to adapt to a future with less water.[8]

Case Studies

5.13 There were two case studies that were often referred to in the inquiry: the purchase of Toorale station in September 2008 by the New South Wales Government, with the assistance of the Australian Government; and the Torrumbarry Reconfiguration and Asset Modernisation Strategy (TRAMS) being carried out in the Torrumbarry Irrigation Area (TIA) of northern Victoria.[9] A brief overview of each of these case studies is provided below, and the case studies are referred to in the discussion throughout this Chapter.

Purchase of Toorale Station

5.14 In September 2008 the New South Wales government, with the assistance of the Australian Government, purchased Toorale station, a grazing and cropping property in western New South Wales, for $23.75 million. Toorale station holds entitlements to extract 14 GL of water from the Warrego and Darling Rivers each year and the rights to harvest water from the floodplain. Under the agreement between New South Wales and the Commonwealth, the New South Wales government will be

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6 DEWHA website, *Sustainable Rural Water Use and Infrastructure.* Available at: http://www.environment.gov.au/water/programs/srwui/index.html.

7 See Intergovernmental Agreement on Murray-Darling Basin Reform (IGA), clause 4.11.

8 DEWHA website, *Sustainable Rural Water Use and Infrastructure.* Available at: http://www.environment.gov.au/water/programs/srwui/index.html.

9 The Torrumbarry Irrigation Area encompasses the Cohuna, Kerang and Swan Hill regions from the Torrumbarry Weir to Nyah.

responsible for the preservation of the land and transfer the water entitlements to the Commonwealth Environmental Water Holder.[10]

5.15 In March 2009, the Minister for Climate Change and Water announced that an extra 11.4 GL of water was flowing down the Darling River as a direct result of irrigation extractions having ceased at Toorale station.[11]

Torrumbarry Reconfiguration and Asset Modernisation Strategy

5.16 TRAMS is a community-driven strategy, developed in conjunction with Goulburn-Murray Water, to redesign the TIA. TRAMS envisages a future for the TIA involving a 30 per cent reduction in Goulburn-Murray Water assets; modernising 50 percent of the delivery system; and a 50 per cent reduction in water use over a period of five to 10 years.

5.17 Mr Geoff Williams, the chair of the TRAMS Working Group, provided the committee with an overview of the 'traffic light' concept which is being used as the basis for planning the reconfiguration of the TIA. 'Green' areas are targeted for investment in modernised irrigation infrastructure and future expansion of irrigation; 'orange' areas will focus on environmental outcomes and amenity living, including water purchases and ecological restoration; and 'red' areas will be encouraged to convert to dryland agriculture, and targeted for water purchases.[12]

5.18 Funding for TRAMS has come through a variety of sources. Initial funding was from the Victorian Government which, at the time that water rights were unbundled in northern Victoria, provided funding for infrastructure maintenance and reconfiguration planning in exchange for a low-reliability water right which was allocated to the environment. Much of the channel modernisation in the TIA, which formed part of TRAMS, is being carried out under the auspices of the Northern Victorian Irrigation Renewal Project (NVIRP), the Victorian Government's strategy to modernise irrigation infrastructure. Additional funding has also come from Goulburn-Murray Water, from the water charges levied on landholders. Mr Williams also

10 The Hon. Carmel Tebbutt, NSW Minister for Climate Change and the Environment and Senator the Hon. Penny Wong, Minister for Climate Change and Water, 'Commonwealth and NSW purchase Toorale', Joint Media Release PW 175/08, 10 September 2008.

11 Senator the Hon. Penny Wong, Minister for Climate Change and Water, 'Toorale purchase delivers 11.4 billion extra litres of water for the Darling River', Media Release PW 57/09, 4 March 2009.

12 Mr Geoff Williams, *Senate Rural and Regional Affairs and Transport Committee – Murray Darling Basin inquiry, 12 March 2009 – Teleconference Link*, Powerpoint presentation, tabled 16 March 2009, pp 10-13. See also: Australian Conservation Foundation (ACF), *Land and water reform in the Murray-Darling Basin*, 16 October 2008, pp 4-5, tabled 10 March 2009.

indicated that there have been discussions with the Commonwealth about a targeted buyback case study.[13]

Issues raised on environmental water in the Murray-Darling Basin

5.19 The Water Entitlement Buyback and the Infrastructure Program were the subject of extensive discussion and examination during the course of this inquiry. The discussion in this Chapter is divided into three sections: the strategy underlying the acquisition of environmental water; concerns specific to the Water Entitlement Buyback and issues in relation to the Infrastructure Program.

Strategic planning for the acquisition of environmental water

5.20 In this section the committee focuses on the strategy underlying the acquisition of environmental water. In particular, the issues raised with the committee were:

- options for an integrated approach to water reform to deliver environmental water;
- the identification of key environmental assets in the Basin; and
- the socio-economic impact of water reforms which deliver environmental water.

Integrated planning as a decision-making approach

5.21 A number of witnesses raised with the committee concerns that acquisition and provision of environmental water across the Basin did not reflect a cohesive policy. For example, Ms Beverly Smiles of the Inland Rivers Network (IRN) described 'ad hoc' outcomes of current planning decisions:

> There are decisions made around allocations and water rules and environmental flows, but what is ad hoc at the moment is the outcome of those current planning decisions. What is not happening is that there has been a decision by the community with some sort of process behind it…[14]

5.22 Mr Peter Cosier of the Wentworth Group explained to the committee what he believed were the risks of the current strategy:

> …we have a compartmentalisation of the plan. So we have $3 billion for water buy backs and $6 billion for infrastructure. It may well be that you do spend $6 billion on infrastructure, but if you go in and spend money on infrastructure without identifying where you need to make the adjustment, you may well be throwing a lot of infrastructure money that has been put

13 See Mr Geoff Williams, *Committee Hansard*, 16 March 2009, pp 22, 25-27. For more information on the Northern Victorian Irrigation Renewal Project (NVIRP), see the NVIRP website: http://www.nvirp.com.au/index.html.

14 *Committee Hansard*, 13 March 2009, p. 50.

> together by state agencies, not industry specialists. You might…be producing gold plated redundant infrastructure. In other words, building new pipes that will never be used because the water will not get there. So the current process is at risk with state agencies putting up infrastructure projects that are not economically viable whilst the Commonwealth is in the market purchasing water.[15]

5.23 In another example of this criticism, Mr Richard Anderson of the Victorian Farmers Federation, described the 'scattergun effect' of the Water Entitlement Buyback.[16] Mrs Deborah Kerr of the National Farmers' Federation (NFF), stated that while the approach to environmental water decision-making 'feels a little bit ad hoc', she noted that the Australian Government's acquisition of environmental water to date has been on a 'no-regrets' basis, during the preparation of the Basin Plan.[17]

5.24 The committee sought the opinion of Dr Bill Young of the CSIRO as to whether the government's approach to the acquisition and delivery of environmental water so far has been methodical:

> I do not see it as methodical, but in the work that one would envisage being done as part of preparing the basin plan and looking at different ways of managing the system, I would think it reasonable that those issues around infrastructure that you were referring to be looked at as well. It comes to the point, too, where you say there is a lot of expenditure on purchasing water. There could also be expenditure in infrastructure for environmental water managing, but actually there is a trade off there. You may get a better bang for your buck in the water purchase if you invest some of your financial resources into infrastructure.[18]

5.25 Dr Hatton described decision-making at present as 'not as strategic' as the technical community and the Murray-Darling Basin Authority planned:

> But there is in the river operations of the Murray River something more than an ad hoc process by which environmental water is managed along that river. The [Catchment Management Authorities] are involved, as is the River Murray operations.[19]

5.26 A number of witnesses described for the committee what they envisaged as more strategic approaches to the acquisition and delivery of environmental water as part of a broader policy on water. For example, The Australian Conservation Foundation (ACF) propose a geographically targeted land and water reform package that:

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15 *Committee Hansard*, 10 March 2009, p. 53. See also: Inland Rivers Network (IRN), *Submission 9*, p. 2.

16 *Committee Hansard*, 26 September 2008, p. 91.

17 *Committee Hansard*, 13 March 2009, p. 11.

18 *Committee Hansard*, 16 March 2009, p. 10.

19 *Committee Hansard*, 16 March 2009, p. 10.

> …would accelerate and integrate investment of the $3.1 billion *Restoring the Balance* water buyback money with the $5.8 billion *Sustainable Rural Water Use and Infrastructure* efficiency and structural adjustment funds.
>
> …The package involves locally driven land and water capability assessments of irrigation districts, incorporating CSIRO *Sustainable Yields* predicted impacts of climate change on water availability over the next 30 years, along with all existing local and regional natural resource management (NRM) and environmental data.[20]

5.27 Dr Arlene Buchan, of the ACF, cited the work of TRAMS as an example of how this reform could work:

> …TRAMS…have shown an incredible capacity to self-organise from the bottom up. They have sought the information and the tools, have done the planning and have looked at their entire irrigation district with a view to asking questions like: 'What is the best land and water reform that we can engage in in this area?' and 'What is the best use that our different land and water assets will have in 50 or 70 years, given climate predictions and so on?' Communities can organise and plan if they are given the resources and the opportunity to do so. We really support community planning—it is a great way to make sure that we reduce the amount of conflict and differences of opinion across the basin on how to do things, and, again, we commend the TRAMS group as a blueprint for that type of community based planning set out in the land and water reform paper previously presented to this committee.[21]

5.28 In contrast, some witnesses thought the purchase of Toorale station could have been better structured to take advantage of the land that was acquired in addition to the water entitlement. For example, Mrs Kerr, of the NFF, in discussing the Toorale purchase and particularly the acquisition of land for the national reserve system, stated that there is a 'smarter way of doing business':

> It is a 93,000-hectare property with 14,000 megalitres of permanent entitlement that is traded. The rest of it is stock and domestic water that is not tradeable. It had significant sheep and cattle enterprises on the farm, with only 2,000 hectares of irrigation, so a very small area of irrigation on the property.
>
> It is our belief that we could have been smarter in that acquisition. We could have left 2,000 megalitres on the farm for a high-value horticultural enterprise. We could have used the Environmental Stewardship Program under Caring for Country to enhance the management of the high-value ecological assets on that property. They would have been actively managed.

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20 ACF, *Land and water reform in the Murray-Darling Basin*, 16 October 2008, pp 1-2, tabled 10 March 2009.

21 *Committee Hansard*, 10 March 2009, p. 30.

> We could have maintained the agricultural production enterprise that is on the property rather than transferring that to a national reserve system.[22]

5.29 The committee notes that other witnesses supported the Toorale station purchase:

> At the time the government purchased Toorale it was ridiculed by some as a waste of money yet with the recent rains in the area we now have 11GL of water flowing into the Darling.
>
> We would not have this water if the government has not acted quickly and purchased Toorale when it did.[23]

5.30 The committee sought DEWHA's advice as to its capacity to facilitate integrated planning, such as was described by Dr Buchan. Representatives for DEWHA indicated that no such planning was done on an individual irrigator scale, and nor could such planning be done under the tender process:

> …because we have an open tender process and we are assessing the offers to sell water on their merits, with the key criteria being: is there an environmental asset that can benefit from this water? Can the water get there? And does the proposition represent value for money relative to the market price for water in that area of that reliability? That is a process that is applied to a suite of offers in an area and comparing them and selecting the ones to purchase. We do not then extend back out from that, because it is operating as a tender under full tender rules, I would say, in terms of the way the buyback works.[24]

5.31 However, if a group of irrigators were to approach DEWHA, then there are processes in place to assist with an integrated approach to the buyback of water entitlements and the implementation of infrastructure projects:

> Firstly, yes, there are other proposals [aside from TRAMS] where groups of irrigators are considering moving out of irrigation together and selling their water to us as a group, and we have a program for that and guidelines for people to follow. If they do that together, we have made it clear in those guidelines that we are prepared to help with the costs of decommissioning infrastructure to convert that area from irrigation. There are various stages. The TRAMS is one, where there is an area that has been identified as potentially being able to move out of irrigation.

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22 *Committee Hansard*, 13 March 2009, p. 10. See also Ms Louise Burge, NSW Farmers Association, *Committee Hansard*, 26 September 2008, p. 15; Mr Trevor Randall, *Committee Hansard*, 16 March 2009, p.34.

23 The Wentworth Group of Concerned Scientists (Wentworth Group), Opening Statement, tabled 10 March 2009, p. 3. See also: Mrs Deborah Kaulder, Australian Floodplain Association, *Committee Hansard*, 26 September 2008, pp 48-49; Dr John Williams, Wentworth Group, *Committee Hansard*, 10 March 2009, p. 51; IRN, *Submission 69*, Part 1 of the inquiry, Attachment: IRN and ACF, *Opportunities to deliver immediate & ongoing water for the ecological crisis in the internationally significant Lower Lakes and Coorong*, p. 4.

24 Ms Mary Harwood, DEWHA, *Committee Hansard*, 13 March 2007, p. 18.

> More broadly, in the priority projects and the private irrigator infrastructure operator projects there is clear scope for doing integrated proposals – that is, for either a state or for an irrigation corporation to bring forward a proposal about an area and proposing an integrated approach which could include some shutdown and some refurbishment of areas that are more likely to be viable in the future. In fact, the process that we have been funding up to date, in a number of irrigation areas through the irrigation modernisation planning, is about just that: it is a deep and wide look at the irrigation district in question to see what is the best future for that district; where will it get its best return on investment, if it is going to upgrade irrigation infrastructure, and are there areas that would be better suited to coming out of irrigation.
>
> The water purchase program operates independently for the individual sales, but there is also this stream of activity where groups of irrigators can approach us for a group sale and as well, through the infrastructure expenditure, that can include integrated proposals from the relevant areas.[25]

5.32 Another proposal was put forward by the Wentworth Group of Concerned Scientists (Wentworth Group) which advocates suspension of the Infrastructure Program and combining the funds with the Water Entitlement Buyback:

> Whilst the list of [Infrastructure Program] projects might seem impressive, a cursory assessment suggests that the vast majority are likely to fail any cost benefit analysis, in terms of the environmental benefit achieved from the investment. Most of the large scale water efficiency measures that were sensible have already been done.
>
> …Governments should not be spending money upgrading unviable irrigation infrastructure. The current investment in infrastructure should therefore be suspended, combined with the water buyback program and all investments subjected to a common cost benefit test to ensure value for the money invested…
>
> The combined $8.9 billion is likely to produce significantly more water for the longer term health of the rivers. If this program was then brought forward over the next 2 years, through an Interim Basin Plan, it would also provide an important social benefit by contributing a major stimulant to structural adjustment of the industry throughout the basin.[26]

Identifying key environmental assets

5.33 The committee also heard from a number of witnesses highlighting one of the underlying issues in the debate about environmental water, namely, that there may not be enough water to save all environmental assets in the Basin. These witnesses

25 Ms Mary Harwood, DEWHA, *Committee Hansard*, 13 March 2009, pp 16-17.

26 *Submission 71*, Part 1 of the inquiry, pp 15-16. The Wentworth Group's proposal for an Interim Basin Plan is discussed in Chapter 3.

pointed out that at some stage a decision will need to be made as to which environmental assets will be saved. As Professor Mike Young put it to the committee:

> ….The biggest mistake we could make would be to spread the very limited and small amount of environmental water we have over everything, like vegemite. Nothing would live. We would actually kill all of our environmental assets trying to save them all.[27]

5.34 The committee considered this issue to some extent in relation to the first part of the inquiry, specifically that the acquisition of water upstream to send to the Coorong and Lower Lakes would be a case of 'robbing Peter to pay Paul'.[28]

5.35 Mr Terence Korn, of the Australian Floodplain Association, talked about a 'triage' approach as a means of decision-making as to which environmental assets would be saved:

> We support a strategic approach … You really need to think about 50 years ahead and factor in climate change and make a risk assessment and say that these are the areas that we think we can save. My personal view is that you should have a triage approach to this and say that that area has had it, so you are not going to waste any money on that. It will just have to go by the wayside. Another area we might be able to do something with through the strategic process. And another area is basically untouched … We think it needs to be strategic and you need to work out which environmental elements you want to protect.[29]

5.36 Professor Mike Young called for a systematic audit of the Murray-Darling Basin, including an infrastructure review:

> I think we do need to face the reality that there is a high probability that the river system is now operating permanently with much less water and I would recommend to you that the committee consider the case for running an independent audit where we look at which lakes, which billabongs and which environmental assets we would leave to fate and no longer put water in. It is an exercise from top to bottom.
>
> Similarly, we look at every weir, every lock, every structure to see which ones you might leave open until we get more water. Somehow we have to find a way to manage the system more effectively.[30]

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27 *Committee Hansard*, 13 March 2009, p. 27. See also: National Farmers' Federation (NFF), *Submission 13*, p. 8.

28 See: The Senate Standing Committee on Rural and Regional Affairs and Transport, *Water management in the Coorong and Lower Lakes (including consideration of the Emergency Water (Murray-Darling Basin Rescue) Bill 2008)*, October 2008, pp 38-39.

29 *Committee Hansard*, 10 March 2009, p. 43.

30 *Committee Hansard*, 13 March 2009, p. 26. See also: Professor Mike Young, *Committee Hansard*, 13 March 2009, pp 27 and 31.

5.37 Professor Young stated that in parallel with an audit process, mechanisms need to be put in place to enable 'cleverer' river management through changing the river height and salinity:

> We have become accustomed to running the river at one height. We could raise and lower it much more than we do. Similarly with salinity: we could let salinity go up in winter when not many people are using it, and down in summer when there is a lot more use.[31]

5.38 As Professor Richard Kingsford told the committee, one of the problems at present is that key environmental assets in the Basin have not been identified. Professor Kingsford indicated that he is overseeing work to establish a 'wise database' to bring together all water information and all the science that has been published in the MDB. This work has been done for all the northern catchments, and is now looking at producing something similar for the Murray river.[32]

5.39 The committee also questioned Mr Rob Freeman, Chief Executive of the Murray-Darling Basin Authority as to the work that was being done to identify key environmental assets as part of the Basin Plan:

> We need to define the ecological, environmental and social assets of the basin…the environmental one is not only the most difficult and the most complex, it is the least developed. We are having bilateral discussions with all jurisdictions. Jurisdictions have got environmental datasets. It is fair to say that jurisdictions have tended to focus on slightly different things: some are very concerned about water quality, whilst others might be concerned about birds or invertebrates or other issues. We need to bring that to a common scale so that we can assess what are the key environmental assets.[33]

5.40 The committee sought the view of Dr Tom Hatton of the CSIRO on the identification of key environmental assets and the shutting down of other environmental assets if not enough environmental water could be found for them:

> This is not a science answer, just my professional and personal view. With the amounts of money involved and with the analytical tools that are available to look at not just water flow scenarios but the ecological response of the key environmental assets in the basin and the economic implications of any scenario that would change how much water is left in the river, as a taxpayer I would be more comfortable if those analyses were brought to bear and to have an evidence based strategy for investing that money as opposed to the extreme alternative, which is purely opportunistic.[34]

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31 *Committee Hansard*, 13 March 2009, p. 26.

32 *Committee Hansard*, 13 March 2009, pp 19-20.

33 *Committee Hansard*, 16 March 2009, p. 54.

34 *Committee Hansard*, 16 March 2009, pp 6-7.

Socio-economic impact of water reforms on communities

5.41 The issue of the socio-economic impact on rural and regional communities of initiatives to acquire and provide environmental water was raised with the committee by a number of witnesses and in submissions. For example, Mr John Clements of Namoi Water emphasised to the committee the long-term impacts of these types of reforms on communities:

> One of the messages we have for government is: you need to think very carefully about the 10-, 15-, 20- or 25-year scenarios. It is not the first two years of a reform…it is not the next two years we are so worried about, aside from the obvious losses of business and all the upset that that brings; it is what happens to our communities over a longer period of time. Has government considered exactly what the costs to government are?…Once you have had a 25-year breakdown, there is not a two-year fix, a five-year fix or even a 10-year fix.[35]

5.42 An example of these impacts was provided to the committee by the Bourke Shire Council in relation to the purchase of Toorale station:

> The business community has difficulty in quantifying the impacts the loss of Toorale as a commercial property will have on their individual businesses, but a recent gathering of Business owners has expressed a view that a net 10% negative impact is a realistic estimate.
>
> Importantly, there is grave concern that because all businesses in Bourke are currently operating at bottom line, skeleton staffing levels, any further reduction in their business may place them below a critical operating threshold. This has already occurred in Bourke in the last twelve months with the closure of two of the three supermarkets and of one fuel outlet. Further, the RSL Club and a tyre business have gone into liquidation.[36]

5.43 The Bourke Shire Council has outlined a number of strategies to offset the community impact of the sale of Toorale, including:

- re-establishing irrigation properties with permanent plantings around Bourke to generate employment;
- establishing an Aboriginal Cultural Heritage Centre to generate tourism and employment and to provide education;
- constructing a goat abattoir to generate employment;
- building a low care, aged care addition to the Bourke Multi Purpose Service Hospital; and

35 *Committee Hansard*, 10 March 2009, p. 18. See also: Mr Bruce Brown, *Committee Hansard*, 10 March 2009, p. 20; Murray-Darling Basin Water Crisis Management Council, *Submission 61*, Part 1 of the inquiry, p. 5.

36 Mr Geoff Wise, General Manager, Bourke Shire Council, *Draft Report prepared by Bourke Shire Council for the property Toorale*, 21 September 2008. Tabled 16 March 2009.

- upgrading the 'Corner Country Highway' by completing the sealing of the road from Bourke to Wanaaring and of the highway from Broken Hill to Tibooburra, to enhance tourism and address isolation of disadvantaged communities.[37]

5.44 Mr Geoff Wise, General Manager of the Bourke Shire Council, outlined for the committee what he believed the government's responsibilities were when it undertakes reforms in this way:

> …if a commercial business sells to the government and the government decommissions that business then there is major impact on the regional community. That has really come forward in the experience that we have had in Bourke. What is obviously required when government is going to intervene and totally change an operation like this is an integrated regional strategy to address the economic, social, cultural and the environmental implications of any government reforms. It is my view that we need to consider intervention impacts of any government reform programs on the community.
>
> …if government is going to be throwing lots of money around say water reform, as an ambit claim they should invest at least an equivalent number of dollars working with the local community such as the local government to address the fallout effect implementation of that water reform is going to have, because quite frankly the government will be paying those dollars indirectly anyway through all sorts of fallout social benefits and unemployment and the whole bit.[38]

5.45 In contrast with the experience of Bourke Shire Council, the committee also heard evidence from Mr Williams of the TRAMS Working Group about the importance of community involvement and ownership of environmental water projects to reduce the social and economic impacts of reform:

> Right from the start we went out to the community and we have had a number of public meetings where we have actually got up there and explained what our vision is. We have tried to take the community along as best we can. I think one of the pluses for us is our committee. It is made up of both irrigators and non-irrigators. We have got local government CEOs on it. We have got local business leaders in it. We have got agency people. We have got a diverse group who are part of the actual committee…Sure, not everybody is going to be happy…
>
> What we have tried to do is to have a pretty robust sort of framework by which you select an area. You are picking it on scientific data rather than: I do not like a particular area so we will shut it down. You look at things like salinity. You look at things like water traded out of an area and how much

37 Mr Geoff Wise, General Manager, Bourke Shire Council, *Structural Adjustments for the Bourke community to deliver social, economic and cultural offsets to address land use change at Toorale*, 21 October 2008. Tabled 16 March 2009.

38 *Committee Hansard*, 16 March 2009, pp 32 and 37.

> water is still left in an area. You look at natural resource type issues…We are pretty mindful of the fact that we need to remember that when we are having a look at outcomes. You look at other ideas for people. Maybe they can get into carbon credits. Maybe we can look at grasslands type projects tenders. You just have to look a bit outside the square as to what we actually do with the land. We are not saying it is going to be the end of the land. We do not want to walk away from it.[39]

5.46 The committee notes that DEHWA has engaged the Australian Bureau of Agricultural and Resource Economics (ABARE) to analyse the impacts of the Water Entitlement Buyback. Although the initial date for completion of this study was March 2009, the study was delayed to enable the inclusion of analysis on the recent announcement on increasing the scale of water buybacks over the next three years. That study is expected to be completed by the middle of this year.[40]

5.47 The committee notes that the basis on which the Basin Plan is to be developed involves some aspects of social, cultural, Indigenous and other public benefit issues.[41] Mr Rob Freeman, Chief Executive of the Murray-Darling Basin Authority, indicated that work had began on identifying the social assets of the Basin and this would require more work in the future, but this would not hold up the setting of a sustainable diversion limit.[42]

5.48 A number of witnesses indicated that they felt that in the absence of more analysis on the social and economic impacts of water reform any acceleration of the Water Entitlement Buyback should be postponed. For example, Ms Louise Burge of the NSW Farmers Association believes that there is no clear strategy in relation to the buybacks and expressed concern at the continuation of buybacks without firstly receiving the findings of the ABARE report:

> …I think there needs to be an overall master strategy and that needs to be clear, transparent and worked in consultation with the communities, who are going to be affected. I think we need to be very cautious that we are simply going at a pace of buyback with no regard to what our future needs are and to what the current impacts will be.[43]

5.49 The committee notes that there are some limited studies which have been conducted in relation to the social and economic impacts of water purchasing. The Social and Economic Reference Panel of the MDBC published a brief assessment of purchasing water entitlements in April 2008 based on the Pilot Environmental Water

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39 *Committee Hansard*, 16 March 2009, pp 23-24.

40 *Submission 1A*, Part 1 of the inquiry, p. 3; and DEWHA, Answers to questions on notice, 13 March 2009 (received 9 April 2009).

41 *Water Act 2007*, s. 21(4)(c)(v).

42 *Committee Hansard*, 13 March 2009, p. 54.

43 *Committee Hansard*, 26 September 2008, p. 11. See also: Mr John Clements, Namoi Water, *Committee Hansard*, 10 March 2009, pp 18-19.

Purchase Project (see paragraph 5.10 above). That study was focussed on the merits of purchasing water entitlements during a time of low water availability. The study concluded that there was no reason to discontinue or delay the purchase of water entitlements for environmental purposes in periods of low-water availability.[44]

5.50 Mr Ken Trewin, of the Murray-Darling Basin Water Crisis Management Council, referred the committee to a case study of the social and economic impacts of water trading in Victoria's Murray Valley.[45] This study covers the impacts of water trading more generally and does not specifically address the issue of the social and economic impacts of the purchasing of water for environmental purposes.

5.51 Mr Clements indicated that work is being done in the Namoi region to develop a social and economic model to enable that community to respond to water reform:

> One of the measures we are promoting and informing the committee of today is that we are going to corporately in our area seek to put up a social and economic model to make sure that we have an adequate response to reform. So that is something we will do at a community level: industry, [Catchment Management Authorities] and local government. We made a start to that today by talking to NATSEM, the National Centre for Social and Economic Modelling. We want to build a stress resilience model of where we live. We are not interested in whether we have a country music festival or what colour hats people wear; we want to know what the indicators of stress and resilience are. In a very dedicated way we want a social and economic model that looks at stress and resilience indicators: how resilient is your community? How stressed is it? If we can promote that model and get it owned corporately by the community – by [Catchment Management Authorities], by industry and by local government – that will become a reform tool for us.[46]

Committee view

5.52 The committee is deeply concerned about the impact that water buybacks are having on regional communities as outlined in the case of the Bourke Shire Council. There is concern that the potential impact on regional communities of the

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44 Murray Darling Basin Commission, *Brief assessment of the merits of purchasing water entitlements during a time of low water availability*, April 2008. Available at: http://www.thelivingmurray.mdbc.gov.au/__data/page/1327/SERPadvice_water_purchases.pdf.

45 *Committee Hansard*, 10 March 2009, p. 11. See: Report for the Rural Industries Research and Development Corporation, National Water Commission and the Murray-Darling Basin Commission, *The Economic and Social Impacts of Water Trading: Case studies in the Victorian Murray Valley*, September 2007. Available at: http://www.nwc.gov.au/resources/documents/Economic-Social-impacts-Water-Trading-PUB-1107.pdf.

46 *Committee Hansard*, 10 March 2009, p. 17.

government's water buyback policy has not been determined prior to the commencement of the buyback programs.

5.53 The committee recommends that the implementation of an Environmental Watering Plan, or any measures to acquire and provide for environmental water, should not be considered in isolation of the potential socio-economic impacts of these plans.

Recommendation 4

5.54 The committee recommends that the implementation of an Environmental Watering Plan, or any measures to acquire and provide for environmental water, should not be considered in isolation of the potential socio-economic impacts of these plans.

Issues in relation to the Water Entitlement Buyback

5.55 The committee heard from a number of witnesses who were supportive of the Water Entitlement Buyback. For example, Mrs Deborah Kaluder, of the Australian Floodplain Association, outlined the environmental benefits that would come from the Water Entitlement Buyback for floodplain areas:

> The environment, wetlands and floodplains all go hand in hand. You cannot just talk about the environment; you talk about floodplains. Western rivers are floodplains. They are not channel rivers, so to speak. They overflow their channels and they spread out across the land. They can be 40 kilometres wide. We have fences that have gone a metre underwater on our place and they are still standing. This is gentle, slow-flowing water.[47]

5.56 The committee also heard from organisations offering qualified support for the Water Entitlement Buyback. For example, Mrs Kerr, of the NFF, said:

> We have supported the $3.1 billion acquisition program on the basis that it was from willing sellers. To do otherwise would be to put pressures on farmers…we have also said that we support a run-out or an implementation of the infrastructure, both delivery system and farm, in conjunction with the acquisition. We have said that we **do not** support acquisition alone or an acceleration of acquisition without, likewise, the implementation of that other program.[48]

47 *Committee Hansard*, 26 September 2008, p. 49. See also: Ms Amy Hankinson, IRN, *Committee Hansard*, 18 September 2008, p. 22; Ms Ilona Millar, Wentworth Group, *Committee Hansard*, 19 September 2008, p. 26; Dr Arlene Buchan, ACF, *Committee Hansard*, 10 March 2009, p. 29; and Mr Terence Korn, Australian Floodplain Association, *Committee Hansard*, 10 March 2009, p. 40.

48 *Committee Hansard*, 13 March 2009, p. 3. Words in bold indicate a correction to the proof hansard received from the witness. See also: Mr Andrew Gregson, NSW Irrigators Council, *Committee Hansard*, 9 September 2008, p. 44.

5.57 This section of the report considers specific issues raised in relation to the Water Entitlement Buyback:

- the impact of Victorian trading caps on the acquisition of water entitlements;
- the need for an acceleration of the Water Entitlement Buyback;
- the delivery of environmental water in unregulated systems;
- compulsory acquisition of water for the environment; and
- the nature of 'willing sellers' of water entitlements.

The Victorian caps on trading water

5.58 The committee were interested to find out the impact of Victoria's so-called 'trading caps' on the acquisition of water under the Water Entitlement Buyback. These trading caps refer to Victoria's four per cent annual cap on trading water out of irrigation areas (the four per cent cap) and 10 per cent cap on the amount of water shares in any water supply system that can be owned without being associated with land (the 10 per cent cap).

5.59 A number of witnesses indicated that they were concerned the caps would impede the acquisition of water for environmental purposes. For example, Ms Amy Hankinson, of the IRN told the committee she saw no valid justification for keeping the four per cent cap in place:

> …issues such as that certainly need to be considered and removed particularly where they stand in the way of actually getting the job done in terms of positive and proper action on the ground.[49]

5.60 Professor Mike Young described how the 10 per cent cap would also impede the Commonwealth acquiring water for environmental purposes:

> …Part of the process of unbundling in parts of Victoria is that there is a limit on the proportion of entitlement that can be separated from land. That is 10 per cent. The Commonwealth's environmental water holder would not want to own land. It would only want to hold entitlement. So, in fact, I think you will find it is not the four per cent [cap on trading out of certain irrigation areas] which is the problem. When you start the process, it will be the 10 per cent limit which will very, very quickly pull the system up.[50]

49 *Committee Hansard*, 18 September 2008, p. 17. See also: Ms Ilona Millar, Wentworth Group, *Committee Hansard*, 19 September 2008, p. 30; Dr Arlene Buchan, ACF, *Committee Hansard*, 26 September 2008, p. 18; Australian Network of Environmental Defender's Officers, *Submission 11*, p. 3.

50 *Committee Hansard*, 19 September 2008, p. 30.

5.61 Mrs Kerr explained that the NFF's concern was not necessarily the four per cent cap in Victoria, but that all states were 'flouting' the principle of competitive neutrality.[51]

5.62 Mr Richard Anderson of the Victorian Farmers Federation defended the existence of the four per cent cap, explaining why it was introduced in the first place:

> We have to remember why the cap was put in place in the first place – to try to slow down the process of water leaving individual districts, allowing those districts to adjust to water flowing out – because that has a longer term effect on those who are left who wish to stay in irrigated agriculture in those districts. It can have a devastating effect on the pricing regimes. So, until we get some sense around that, I would think that we would be holding our position. Nobody has really fair dinkumly addressed the rural and regional adjustment of water going out of districts.[52]

5.63 In contrast, Professor Mike Young described the four per cent cap as a 'mechanism that impedes the rate of structural adjustment in a district, and imposes higher rates of adjustment onto other districts than would be the case in the absence of such a restriction'.[53]

5.64 In providing the committee with information on notice, Dr Buchan noted that most irrigation districts in Victoria have exceeded or are very close to exceeding the four per cent cap, particularly in relation to high reliability water:

> Under the 4% cap rule in Victoria 96,000 ML of water can be transferred and of that 88,000 ML has already been accounted for during the current water year, ie, *92 per cent of the existing capacity has already been accounted for under the cap*.[54]

5.65 Dr Buchan illustrated for the committee how quickly the four per cent caps could be reached in some irrigation districts:

> …last year the water year began on the 1 July and by 4 July a number of areas within districts, if you know what I mean, were within a hair's-breadth of breaching that cap. So there is a backlog of applications which had been lodged just prior to the start of the water year. So by the time they were all taken care of, by four July, that four per cent cap had been breached.[55]

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51 *Committee Hansard*, 13 March 2009, p. 5.

52 *Committee Hansard*, 26 September 2008, pp 91-92.

53 Answers to questions on notice, 13 March 2009 (received 18 March 2009).

54 Answers to questions on notice, 10 March 2009 (received 23 March 2009). Emphasis in original.

55 *Committee Hansard*, 10 March 2009, p. 31.

5.66 Dr Buchan also provided the committee with an example of what she describes as the 'shenanigans' in Victoria which reduce the amount of water that can be traded under the four per cent cap:

> …because an application to separate a water right from a land right is counted towards the 4% cap, considerably less than 88,000 ML of water has actually been traded and water which has actually been traded will have been counted twice in contributing to the total 4% cap. In Victoria during the 07/08 water year, 3.65% of the 4% limits reached were applications to separate a water right from a land right and only 0.35% of the 4% limits reached were applications to trade as such. Consequently, whilst a policy trade in theory increased the 2% limit on inter-district trade pre 1 July 2007 to a nominal 4% limit after this date, trade was in reality capped at 0.35%.[56]

5.67 Representatives of DEWHA explained that where people are seeking to sell water from an area where the four per cent cap has been reached, the Commonwealth enters into a contract for a deferred sale so that the sale 'folds through' until the following financial year. Representatives from DEWHA stated that the four per cent cap is affecting a large volume of offers for sale.[57]

5.68 In response to a question on notice DEWHA noted that two applications from sellers in Victoria were not settled in the first purchase round (2007-08) due to the four per cent cap. As at 31 March 2009, DEWHA has 18 signed and exchanged contracts for non-disassociated water entitlements in Victoria. The first of these trade approvals for these purchases have been lodged with Goulburn-Murray Water for approval. However, the Victorian Water Register indicates the four per cent limit on our of region trade has been reached in the relevant catchments. The contracts are for the purchase of 2,955 megalitres of entitlements worth $6.14 million. DEWHA noted that the 'extent of this problem will grow as additional contracts are signed and exchanged'.[58]

5.69 Dr Buchan told the committee that, from her discussions with various organisations, in the event that an integrated reconfiguration and modernisation package for land and water reform was put forward for an area, there may be situations where the caps could be set aside or an exemption made to the caps:

> …in my experience of discussing that and talking about it around the traps, where we are able to define particular irrigation districts and do the planning process which says, 'Well, this is the best land and water future we can have in this area, and we can integrate the investment from the various different funding streams,' everyone I have spoken to, irrespective of whether they want to get rid of the four per cent cap, whether they are the greatest defender of the four per cent cap or a proponent of the four per cent

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56 Answers to questions on notice, 10 March 2009 (received 23 March 2009). See also: *Committee Hansard*, 10 March 2009, p. 31.

57 Ms Mary Harwood, DEWHA, *Committee Hansard*, 13 March 2009, p. 16.

58 Answers to questions on notice, 13 March 2009 (received 9 April 2009).

> cap and the 10 per cent investor cap, would be happy to see those set aside or exemptions granted to those caps provided that is done within the context of a planning framework that assesses the optimum land and water futures rather than solely having a buyback program or solely having an infrastructure program going on in an area.[59]

The acceleration of the Water Entitlement Buyback

5.70 The committee received evidence and submissions encouraging the acceleration of the Water Entitlement Buyback. For example, Dr Buchan, of the ACF, noted that all the elements are in place for an acceleration of the policy to occur:

> The most important thing that needs to be done to secure the future of the Murray-Darling Basin is to accelerate the reallocation of water from irrigation back to the environment. We already have the policy framework and the tools with which to do this. We have the full understanding and support of the public to do it. There is enough scientific understanding to understand what the problem is and how we can fix it. And, of course, there is $9 billion of Commonwealth money alone which is there to buy back water and invest in infrastructure and structural adjustment to do the job. So, we need to get on with the job and do it.[60]

5.71 The Wentworth Group also support the acceleration of the Water Entitlement Buyback, by combining the funding for the Water Entitlement Buyback with the Infrastructure Program.[61]

5.72 To this end, the government's announcement on 14 August 2008 to accelerate the purchase of water entitlements was welcomed by members of the Wentworth Group.[62] However, the Wentworth Group noted that while the government had taken steps to bring forward the buyback:

> …these reforms will not deliver the water savings that the science says is needed, nor will they deliver them quickly enough to avert an economic and environmental crisis.[63]

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59 *Committee Hansard*, 10 March 2009, pp 35-36. See also: Mr Geoff Williams, TRAMS Working Group, *Committee Hansard*, 16 March 2009, p. 26.

60 *Committee Hansard*, 10 March 2009, p. 29. Mr Kent Martin, South Australian Farmers Federation, *Committee Hansard*, 10 September 2008, p. 88; IRN, *Submission 69*, Part 1 of the inquiry, p. 3.

61 *Committee Hansard*, 19 September 2008, pp 19-20; and *Submission 71*, Part 1 of the inquiry, p. 15.

62 See for example: Mr Peter Cosier, *Committee Hansard*, 19 September 2008, p. 25; Ms Ilona Millar, *Committee Hansard*, 19 September 2008, p. 26. For more information on the acceleration of the Water Entitlement Buyback, see: The Hon. Kevin Rudd, Prime Minister of Australia, 'New measures to deal with the critical situation in the Murray-Darling Basin', Media Release, 14 August 2008,

63 *Submission 71*, Part 1 of the inquiry, p. 15.

The 'stimulus package' for acceleration of the Water Entitlement Buyback

5.73 During the course of this inquiry, negotiations between the Government and Senator Xenophon on the economic stimulus package resulted in the Government agreeing to bring forward $500 million over the next four years for the Water Entitlement Buyback (referred to as the 'stimulus package'). Of this $500 million, $250 million has been appropriated for the 2008-09 year, which is the maximum pace of water recovery that the government considers can be pursued without causing unnecessary disruption to the water market and without compromising the amount of water that can be returned to the rivers over time.[64] This further acceleration of the Water Entitlement Buyback was the subject of discussion in the second part of the inquiry, in particular, the impact of the Victorian trading caps on the acquisition of water for the environment.

5.74 The committee sought the view of a number of witnesses as to whether, because of the trading caps in place in Victoria, the stimulus package would have a disproportionate impact in NSW and Queensland. Mr Clements of Namoi Water describe the stimulus package as 'ill-advised':

> I think we are bringing forward an expenditure program that was appropriately set at a timetable that you could do it in a way that was reasonable and made some sense and within mind of the fact that we do not have an environmental watering plan yet. That is my understanding. I do not know about the current thinking today but, in structuring the Water Act 2007 and all the discussion that went with it, that was the thinking in terms of those timetables. Certainly the new government, the current government, has changed some of those timetables, but I think their timetables are still appropriate. So bringing $500 million forward, I think, was ill-advised. Certainly without an environmental watering plan and without a social and economic study we are just down to the banalities of the market of who is under the most stress, who is going to let the most water go, and that is just too random to be what you would call an appropriate reform.[65]

5.75 Dr Buchan outlined concerns that the four per cent cap may mean that irrigators in the northern basin are disproportionately impacted by the Water Entitlement Buyback:

> If those four per cent caps remain in place it will be very difficult for the Commonwealth to spread that money evenly or fairly across the whole

64 See: Senator Nick Xenophon, *Senate Hansard*, 12 February 2009, p. 971; *Appropriation Act (No. 6) 2008-09*, Schedule 2; The Hon. Mr Gary Gray, Parliamentary Secretary for Regional Development and Northern Australia, *House of Representatives Main Committee Hansard*, 16 March 2009, p. 2765.

65 *Committee Hansard*, 10 March 2009, p. 21.

> Murray-Darling Basin. You can understand the angst of irrigators in Queensland and New South Wales who think that is unfair.[66]

5.76 Professor Mike Young provided the committee with his analysis of the impact of accelerated water entitlement purchases on NSW and South Australia while the 10 per cent cap in Victoria continues to operate. Professor Young estimates that with the money available for the Water Entitlement Buyback over the next three years, it would be expected that the Commonwealth could purchase approximately 10 per cent of all water entitlements in the Southern Connected Murray System.[67] In order to hold 10 per cent of water entitlements in Victoria, the Commonwealth would need to purchase all the water that could be held by a non-water user (ie all water available under the 10 per cent cap).

5.77 Professor Young's analysis shows that the amount of water available for purchase by non-water users in Victoria, as at 13 March 2009, is less than 4.4 per cent of high reliability water entitlements and less than 3.7 per cent of low reliability water entitlements. Effectively, the 10 per cent cap means that less than half of the water that the Commonwealth would be aiming to purchase in Victoria is actually available for purchase. This means that the Commonwealth would need to either enter into arrangements to circumvent the 10 per cent cap, or purchase a large proportion of water from NSW and SA:

> Ways to circumvent the 10% restriction exist but they are administratively cumbersome and expensive and not the way that governments normally choose to operate. That is, unless the Victorian 10% limit on Non Water User ownership is changed, and if all the allocated budget is to be spent, a much larger proportion of water entitlements will need to be purchased from NSW and South Australia than otherwise would be the case. Moreover, if this approach was taken, the Commonwealth Environmental Water Holder would be left with an unbalanced portfolio of entitlements which may make it difficult for it to deliver Basin Plan objectives in [the] Southern Connected River Murray System.[68]

5.78 Another aspect of the stimulus package is a Productivity Commission inquiry into most effective way to run a water buyback. Dr Buchan welcomed such an inquiry:

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66 *Committee Hansard*, 10 September 2008, p. 32. See also: Mr John Clements, Namoi Water, *Committee Hansard*, 10 March 2009, p. 21, who indicated that a four per cent cap may not be inappropriate if all States had a similar cap. The fact that the cap did not exist in New South Wales meant that the obvious outcome is that more water entitlements will be purchased by the Commonwealth in New South Wales compared to Victoria.

67 Professor Young notes that analysis suggests that in order to secure a low chance of restoring health to the Southern Connected Murray System, at least 15 per cent of all entitlements need to be held by environmental water holders. However, it also needs to be taken into account that some contribution to environmental water supplies will be made by programs such as the Living Murray Initiative and water efficiency improvements from the Infrastructure Program.

68 Answers to questions on notice, 13 March 2009 (received 18 March 2009).

> …personally I think that almost more important is the Productivity Commission inquiry, through which the government has committed to looking at the best way…to recover water in the Murray-Darling Basin. I think that is really important because, currently, the buyback is far too slow to match the scale of the problem and too slow and too cumbersome to enable us to efficiently and effectively spend all the money which has been made available to fix the problem.[69]

5.79 Dr Buchan told the committee that she believes that the two key questions that the Productivity Commission inquiry will need to look at are: the best way to acquire water, and the optimal rate of change.[70]

5.80 There have been no announcements by the Australian Government regarding the Productivity Commission inquiry.

Committee view

5.81 The committee acknowledges the comments by Dr Arlene Buchan that the acceleration of the buybacks may have a significant affect on the ability of the Commonwealth to spread money evenly or fairly across the whole MDB.

5.82 The committee also notes that in response to the Australian Government's purchase of 240 GL of environmental water on 28 May 2009, the NSW Government has announced its intention to 'act swiftly to balance water buyback across Murray-Darling Basin States, including an embargo on future trades of environmental water until a better balance can be struck'.[71]

Recommendation 5

5.83 The committee recommends that the Commonwealth work towards achieving a nationally uniform system of water trading and licensing arrangements that ensures fair treatment across all regions and states.

Delivery of environmental water in unregulated systems

5.84 Another issue raised with the committee in relation to the supply of environmental water to the Basin was the problem of 'shepherding' environmental water through unregulated river systems, as Professor Young explained to the committee:

> In unregulated systems, the licences that are used in the River Murray - actually, more in the Darling system - are a function of flows either past a point or past the point of offtake. What happens if you acquire water in that

69 *Committee Hansard*, 10 March 2009, p. 29.

70 *Committee Hansard*, 10 March 2009, p. 29.

71 The Hon. Phillip Costa, NSW Minister for Water and Regional Development, 'NSW Government to guarantee environmental water purchasing is fair', Media Release, 28 May 2009.

> area is that you would leave water in the river. When you leave water in the river, then everybody's entitlement downstream goes up. It is the same volume, but the opportunity is greater because their licence is a function of flow rate in the river…Almost all of the benefits remain as local benefits, and very quickly they are harvested downstream.[72]

5.85 Professor Young provided the following example of the difficulties if South Australia purchased in Queensland:

> You could shepherd it from the Condamine through to the border, because the rules say that harvesting opportunities are a function of the flow rate at St George, which is above all the licences. But as soon as it goes over the border, all of the irrigators in New South Wales would then be entitled to pump more water because the flow rate is higher.
>
> When you go down as far as the Menindee Lakes, water that gets into the lakes becomes New South Wales's water as part of the agreement, until the lakes get to 640 gigalitres. So it would be very hard for South Australia in fact to get water through, if it wanted to, if not impossible.[73]

5.86 In relation to the water acquired through the purchase of Toorale station, Professor Young indicated that 'with some caveats', current arrangements mean it is highly unlikely that water returned to the Darling River as a result of the Toorale purchase would make it to South Australia. However, Professor Young did note that there would be 'massive' local environmental benefits.[74]

5.87 Professor Young highlighted to the committee that a solution to this issue would require an amendment the *Water Act 2007* and water sharing plans.[75]

5.88 The committee sought the view of the Chief Executive of the Murray-Darling Basin Authority, Mr Rob Freeman, on this issue:

> …it is fair to say we have not formed an opinion on it. Clearly it is an issue that will have to be confronted in the basin plan, because the basin plan is about basin scale issues – how do you move water from one jurisdiction through to another jurisdiction to achieve something that is in the national interest?
>
> …I had not really considered whether we would do a review of legislative barriers, but we probably would. I think the more important thing will be defining in the basin plan the requirements of water resource plans in order to be compliant with the basin plan. That would determine that you must allow this water, as we are talking about, to move through in a way that is

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72 *Committee Hansard*, 13 March 2009, p. 28

73 *Committee Hansard*, 13 March 2009, p. 29, See also: Ms Beverly Smiles, IRN, *Committee Hansard*, 13 March 2009, p. 45, who provided an example of shepherding environmental water through the Macquarie Valley.

74 *Committee Hansard*, 13 March 2009, pp 30- 31.

75 *Committee Hansard*, 13 March 2009, p. 29

> unencumbered. So, rather than being a legislative review, it will be a requirement of the basin plan that, to be a compliant water resource plan, it must make provision for this to occur…the way we are approaching it is determining what you will have to have in your water resource plan in order to be compliant. If a jurisdiction does not produce a compliant water resource plan, that then allows us to produce one that does, to have effect until they bring in a compliant one.[76]

Committee view

5.89 The committee is in agreement with Mr Freeman that this is an issue that will have to be dealt with as part of the Basin Plan.

Compulsory acquisition of water for the environment

5.90 The committee also sought the opinion of a number of witnesses on whether it was necessary for the Commonwealth to compulsorily acquire water for environmental purposes.

5.91 Dr Buchan stated that she did not see any reason at this point in time for there to be compulsory acquisition of water from people.[77]

5.92 Mr Stewart Ellis from Murray Irrigation Ltd indicated his organisation's opposition to the compulsory acquisition of water for environmental purposes, referring to the 'devastation' that government intervention causes in the water market:

> We are certainly opposed to compulsory acquisition. Irrigators have a property right to water entitlements. There is a market and trade there. The devastation of having carryover water suspended in New South Wales – it was 52 per cent of our carryover water in 2006 – was caused by government interference in the market. That water was carried over water or water that people had gone out in the market and bought to set up their own drought management strategy. To have the government then pull the rug out from under them really did interfere with that market and the confidence people had that they could manage their own risk and security by entering the market.[78]

5.93 Ms Burge from the NSW Farmers Association indicated that compulsory acquisition of water should not take place in the absence of an overarching plan:

> We need to really evaluate what we are trying to achieve with the multitude of players in the market buying water. We have a whole range of players. Whether it is waters for rivers such as the Living Murray Initiative, we have a range of other water schemes, Water for the Future et cetera, what is

76 *Committee Hansard*, 13 March 2009, p. 56.

77 *Committee Hansard*, 26 September 2008, p. 26.

78 *Committee Hansard*, 19 September 2008, p. 15. See also: Mr Dick Thompson, Murrumbidgee Irrigation Ltd, *Committee Hansard*, 26 September 2008, p. 29.

> lacking in this is an overarching plan on how much water is to be purchased, how much water is to be taken out of individual regions and where that water is going in terms of environmental improvements and the transparency of both the purchase and use of that water.[79]

5.94 Ms Julie Pettett of the Conservation Council of South Australia indicated that organisation would support compulsory acquisition in some circumstances:

> At the Conservation Council we advocate quite firmly that, wherever possible, incentives be offered to support people making the decision for themselves. Should that not be fast enough, then we would most definitely support acquisition. In relation to the buyback period, it is way too long and it needs to be done now.[80]

5.95 Representatives from DEWHA confirmed to the committee that the government policy was for voluntary acquisition of water for environmental purposes.[81]

Committee view

5.96 The committee recommends that there be no compulsory acquisition of water entitlements.

Recommendation 6

5.97 The committee recommends that there be no compulsory acquisition of water entitlements.

'Willing sellers' of water entitlements

5.98 The Australian government refers to the purchase of water entitlements for environmental purposes from 'willing sellers'.[82] A number of witnesses also referred to 'willing sellers'.[83]

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79 *Committee Hansard*, 26 September 2008, p.10.

80 *Committee Hansard*, 10 September 2008, p. 6.

81 Mr Tony Slatyer, DEWHA, *Committee Hansard*, 19 September 2008, p. 87.

82 See for example: Senator the Hon. Penny Wong, Minister for Climate Change and Water, 'Next water buyback tender to open 15 September', Media Release PW 167/08, 8 September 2008; DEWHA, *Water for the Future: Restoring the Balance in the Basin Factsheet*, March 2009. Available at: http://www.environment.gov.au/water/publications/mdb/pubs/restoring-balance.pdf.

83 See for example: Ms Jenni Matilla, Bondi Group and National Irrigation Corporation Water Entitlements Register, *Committee Hansard*, 19 September 2008, p. 65; Dr Arlene Buchan, ACF, *Committee Hansard*, 26 September 2008, p. 20; Mr Richard Anderson, Victorian Farmers Federation, *Committee Hansard*, 26 September 2008, p. 93; and Mr Terence Korn, Australian Floodplain Association, *Committee Hansard*, 10 March 2009, p. 41.

5.99 However, the committee has some concern in using this terminology. Mrs Kerr of the NFF explained:

> I think most of it will have been from distressed sellers. There will be a few people who are retiring and looking to realise their asset. There are some cases that I have been told about of farmers who are really quite affected by the reform process and have decided to opt out of irrigation altogether because of the continuing and ongoing reforms. They are not having the security underpinning their farm business so they have decided to opt out of irrigation. But primarily the sellers will be people who are distressed.[84]

5.100 On this point, the committee also received evidence that the tender process for the purchase of water entitlements, in addition to other measures, often made an attractive package to people wanting to leave irrigation. Mr Williams, of the TRAMS Working Group, told the committee:

> …once you start adding $150,000 and then the price of the water on the block and then you add some of the losses in the channel – Goulburn-Murray Water will have some infrastructure that will not be replaced so there will be some money there. All these sorts of things add up. It will be a substantial nest egg that the people could very well say, 'Look, we are out of here. We will sell out.'[85]

5.101 The committee recognises that the decision to sell a water entitlement will be a very difficult one for some people, but also recognises that there are sellers out there who welcome the opportunity to sell their water entitlement and move on from irrigation. In respect of this, the committee has endeavoured to be careful in its use of the term 'willing sellers' and appreciates that in some cases the purchase of water has been from 'distressed sellers' as described by NFF.

Issues in relation to the Infrastructure Program

5.102 As was detailed in the earlier part of the Chapter, a number of witnesses and submissions raised with the committee concerns that they had about the integration of the Infrastructure Program with the Water Entitlement Buyback. The NFF also raised with the committee specific concerns in relation to the Infrastructure Program, namely the time delay in the delivery of the Infrastructure Programs and the apparent lack of investment in the Program for on-farm efficiency improvements.

Time delay in the delivery of the Infrastructure Program

5.103 In evidence to the committee, Mrs Kerr raised concerns about the rollout of projects that formed part of the Infrastructure Program, particularly those projects relating to improvements in on-farm efficiencies. Mrs Kerr noted that although the

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84 *Committee Hansard*, 13 March 2009, p. 12. See also: Mr Kenneth Pattison, Plug the Pipe, *Committee Hansard*, 26 September 2008, p. 41.

85 *Committee Hansard*, 16 March 2009, p. 26.

Water Entitlement Buyback has been accelerated, the Infrastructure Program is lagging behind.[86]

5.104 Mrs Kerr acknowledged that the Infrastructure Program represented a significant investment by the government. However, Mrs Kerr expressed concern that the money is 'literally running out quite quickly'. Mrs Kerr provided the committee with a 'guesstimate' that of the $5.8 billion the government has committed to the Infrastructure Program, there is approximately $800 million left unallocated.[87]

5.105 The NFF gave the committee a summary on the delivery of the Infrastructure Program.[88]

State Priority Projects

5.106 The NFF notes that the Australian Government agreed to in-principle funding for a number of specific State Priority Projects in the Intergovernmental Agreement on Murray-Darling Basin Reform (IGA).[89] The IGA also provides for bilateral Commonwealth-State Water Management Agreements to cover the State Priority Projects, including the scope and conditions for funding and timing of progress payments.[90]

5.107 The NFF understands that no bilateral agreement has been signed yet, and negotiations are continuing on the text.

5.108 Once these bilateral agreements are in place funding for the State Priority Projects will occur on a progress payment basis.[91] However, the NFF notes the Australian Government appears to be encouraging early implementation of projects.[92]

Irrigator Modernisation Planning Assistance

5.109 In terms of the irrigator infrastructure modernisation plans, the NFF's understanding is that while some plans are nearing completion, it is unlikely that on-ground actions will be implemented inside 2 years, that is, around 2011, let alone completed. The NFF expects that a proposed second round of modernisation plans is unlikely to be complete before 2010, and then on-ground implementation is unlikely to commence before 2012:

86 *Committee Hansard*, 13 March 2009, pp 3-4

87 *Committee Hansard*, 13 March 2009, p. 3.

88 Answers to questions on notice, 13 March 2009 (received 31 March 2009).

89 Clause 4.11.2

90 Clause 4.5.3

91 Clause 4.13

92 Answers to questions on notice, 13 March 2009 (received 31 March 2009).

> Given the expedition of the Commonwealth Government's $3.1 billion acquisition package, the appropriations profile is likely to see around $2.1 billion in water entitlement acquisitions by June 2013. In other words, a significant acquisition program would be nearly 70% complete before infrastructure investment is completed.
>
> If the above occurs, there would be recovery of 1.5 million megalitres of water, albeit from willing sellers, prior to the modernisation plans and state priority projects infrastructure projects being completed.[93]

Funding for improvements to on-farm water efficiency projects

5.110 In terms of the availability of assistance for on-farm efficiency improvements, Mrs Kerr told the committee that, despite the provision for such projects in both the State Priority Projects and the modernisation plans, the NFF were very concerned about whether these projects were actually being funded:

> …our concern is that farmers are not going to be accessing funds to assist in implementing best management practice on-farm, to be able to be more efficient on-farm, to produce more food with less water right across the basin, …Governments are not very supportive of investing in what are seen to be private assets, but this is not private investment. There is a return on water to the environment as part of that investment, and there are significant social and economic flow-on benefits to rural communities.[94]

5.111 The NFF believe that the modernisation plans will largely target investment in delivery system infrastructure, and the NFF's analysis of proposed activity confirms this view.

5.112 The NFF summarised its concerns in relation to a lack of delivery of on-farm infrastructure investment:

> …it is the belief of NFF that projects will be funded under the IGA and other processes, but it is likely that these will target delivery systems and meters …It is very unlikely that on-farm infrastructure will be included, and if this does occur, it is very likely to form only a small part of a small number of projects.
>
> The end result, with increased acquisitions and delivery system improvements, is that the farm infrastructure investment will not occur and will leave irrigators in a worse position and unable to maintain current production levels.
>
> …The most perverse outcome likely is irrigators will have a modern delivery system, and antiquated on-farm infrastructure unlikely to cope with the modern system.[95]

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93 Answers to questions on notice, 13 March 2009 (received 31 March 2009).

94 *Committee Hansard*, 13 March 2009, p. 3. See also: Mr Richard Anderson, Victorian Farmers Federation, *Committee Hansard*, 26 September 2008, p. 93.

95 Answers to questions on notice, 13 March 2009 (received 31 March 2009).

Committee view

5.113 The committee appreciates the complications caused by the integration of the Infrastructure Program with the Water Entitlement Buyback particularly with respect to the acceleration of the buybacks and the lack of delivery of on-farm infrastructure investment.

5.114 The committee recommends that careful consideration is given to the impact of the acceleration of the water buybacks when infrastructure projects are yet to be commenced or completed for example, the impact of a modern delivery system on on-farm infrastructure that has not been upgraded.

Recommendation 7

5.115 The committee recommends that careful consideration is given to the impact of the acceleration of the water buybacks when infrastructure projects are yet to be commenced or completed for example, the impact of a modern delivery system on on-farm infrastructure that has not been upgraded.

Recommendation 8

5.116 The committee recommends that a higher priority be placed on the re-plumbing of rural Australia through the urgent implementation of both on-farm and off-farm infrastructure projects.

Environmental Watering Plan

5.117 The Murray-Darling Basin Authority is currently preparing an Environmental Watering Plan as part of the preparation of the Basin Plan. Section 28 of the *Water Act 2007* sets out the purposes of the Environmental Watering Plan as:

(a) to safeguard existing environmental water; and

(b) to plan for the recovery of additional environmental water; and

(c) to coordinate the management of:

  (i) existing environmental water; and

  (ii) the additional environmental water that is recovered;

in order to:

(d) protect and restore the wetlands and other environmental assets of the Murray-Darling Basin; and

(e) protect biodiversity dependent on the Basin water resources and achieve other environmental outcomes for the Murray-Darling Basin.

Committee view

5.118 The committee believes that the preparation and implementation of the Environmental Watering Plan as part of the Basin Plan addresses many of the

concerns expressed through this inquiry about the strategy of acquiring and providing environmental water in the Murray-Darling Basin.

5.119 The committee's view is that the more important issue is, in the interim, how is a lack of environmental water in the Basin to be dealt with. As the committee was told during the hearing, water entitlements only deliver water when there has been rain.[96]

5.120 The committee recommends that if the Commonwealth Environmental Water Holder has not already implemented any plans for the delivering environmental water to key environmental assets to date, this process should be immediately undertaken.

Recommendation 9

5.121 The committee recommends that if the Commonwealth Environmental Water Holder has not already implemented any plans for the delivering environmental water to key environmental assets to date, this process should be immediately undertaken.

96 See: Mr Stewert Ellis, *Committee Hansard*, 19 September 2008, pp 15-16.

Chapter 6

The impacts of climate change and the likely future availability of water in the Murray-Darling Basin

Introduction

6.1 The Department of the Environment, Water, Heritage and the Arts (DEWHA) stated in its submission that in recognition that climate change impacts on water inflows across the Basin may result in reduced water availability the Government is pursuing a water reform agenda to better prepare communities to adapt to climate change. DEWHA's submission notes that improved information is necessary to enable adaptation to climate change, and for that reason the Government has invested in the CSIRO's *Sustainable Yields Project.*[1]

6.2 The *Sustainable Yields Project* provides an assessment of the anticipated impacts of climate change by 2030 on the Murray-Darling Basin (MDB or Basin). This section of the report outlines the key findings of the *Sustainable Yields Project* in relation to the impacts of climate change on the MDB.[2] The committee notes that a number of submissions regard the *Sustainable Yields Project* as having the most accurate information and being the most comprehensive analysis of the impacts of climate change on the MDB.[3]

6.3 The chapter concludes with a brief discussion of the implications of reduced water availability water planning in the MDB.

Impacts of climate change on the Murray-Darling Basin

Surface water

6.4 In terms of the current surface water resources of the MDB, the *Sustainable Yields Project* report states:

> The current average surface water resource of the MDB…is 23,417 GL/year. Streamflow losses are naturally high across the MDB. In the absence of flow regulation and consumptive water use, only 14,493 GL/year (62 per cent of the total surface water resource) would reach Wentworth on the Murray River and only 12,233 GL/year (52 per cent of the total surface water resource) would reach the Murray mouth on average.

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1 *Submission 1A*, Part 1 of the Inquiry, p. 14.

2 For information on the CSIRO's Sustainable Yields Project see: http://www.csiro.au/partnerships/MDBSY.html.

3 See for example: Murray-Darling Basin Commission, *Submission 4*, p. 3; Queensland Department of Natural Resources and Water, *Submission 12*, p.6.

> Current surface water use … across … the MDB is 11,327 GL/year. This is 48 per cent of the available surface water resource and is a very high relative level of use. Because of the high natural losses in the MDB this level of use has reduced outflows through the Murray mouth by 61 percent.[4]

6.5 The *Sustainable Yields Project* report describes the impact of climate change by 2030 as 'uncertain' but goes on to outline the likely impacts on surface water availability:

> …surface water availability across the entire MDB is more likely to decline than to increase. A decline in the south of the MDB is more likely than in the north. In the south of the MDB, a very substantial decline is possible. In the north of the MDB, significant increases are possible. The median decline for the entire MDB is 11 percent…[5]

6.6 Dr Tom Hatton of the CSIRO noted that although the 11 per cent decline in surface water availability 'does not sound like a large number', it represents an 'ongoing major challenge':

> It is important to appreciate that is the mean annual flow at 2030 and that there will be droughts within that which will look more like what we have had in the last 10 years. They are fairly profound impacts.[6]

6.7 The CSIRO anticipates that under a median 2030 climate and associated decline in water availability, annual surface water use across the MDB would be reduced by four per cent, under current water sharing arrangements. Nearly two-thirds of this reduction would occur in the high water use regions of the Murray, Goulburn-Broken and Murrumbidgee. The relative level of surface water use, that is the ratio of surface water use to surface water availability, would increase from 48 per cent to 52 per cent.[7]

6.8 Reductions in water availability also reduce the reliability of surface water supply:

> The impacts of climate change on the reliability of 'water products' vary greatly between the products, regions and states. High reliability water

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4 CSIRO, *Water Availability in the Murray-Darling Basin: A report from CSIRO to the Australian Government* (*Sustainable Yields Project Report*), 2008, p. 28. The relative level of use is the ratio of surface water use to surface water availability, see *Sustainable Yields Project Report*, p. 32.

5 *Sustainable Yields Project Report*, 2008, p. 5.

6 *Committee Hansard*, 16 March 2009, p. 2.

7 *Sustainable Yields Project Report*, p. 38. Annual surface water use includes diversions for irrigation, rural stock and domestic use and urban town supply, the pipe and channel losses associated with this supply, and the eventual stream flow impacts of groundwater extraction. The assessment also includes additional farm dams and commercial plantation forestry. See *Sustainable Yields Project Report*, p. 32.

> products (including town water supplies) would generally not be affected. 'General security' and 'low reliability' type water products would be affected in terms of the average seasonal allocation and the fraction of years of 100 percent allocations. The greatest reductions in reliability would occur in regions where the relative level of surface water use is already high and where the climate change is expected to have the largest impact on water availability, and for water products that are already less reliable. Some of the largest reductions in reliability would thus occur in the Murray, Goulburn-Broken, Campaspe, Loddon-Avoca and Wimmera regions, and under the dry extreme 2030 climate [scenario].[8]

6.9 The CSIRO states that much of the impact of reduced surface water availability will be focussed in the high water use Murray, Goulburn-Broken and Murrumbidgee regions:

> Under a continuation of current water sharing arrangements, much of the impact of reduced surface water availability would be transferred to the riverine environments along the Murray River including the Lower Lakes and the Coorong. Flow at the Murray mouth would cease 47 percent of the time and severe drought inflows to the Lower Lakes would occur in 13 percent of years. Current surface water sharing arrangements in the MDB would generally protect consumptive water users from much of the anticipated impact of climate change but offer little protection to riverine environments…The Gwydir region is a notable exception as current arrangements would see the consumptive and non-consumptive water shares affected to a similar degree.[9]

Groundwater

6.10 Groundwater use currently represents 16 per cent of total water use in the MDB. In terms of the future availability of groundwater, the CSIRO found that current ground water extraction in seven 'groundwater management units' – namely the Condamine, Border Rivers, Lower Namoi, parts of the Lower Macquarie, parts of the Lower Lachlan, the Upper Lachlan and the Mid-Murrumbidgee – is unsustainable. There are also indications that the groundwater extraction in the Upper Murray may not be sustainable.

6.11 The CSIRO also note that under current groundwater management arrangements, groundwater use across the Basin could more than double by 2030 to exceed one-quarter of total average water use. This increase would be despite existing planning controls that will reduce groundwater extraction to below current levels in some areas.[10]

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8 *Sustainable Yields Project Report*, p. 8.

9 *Sustainable Yields Project Report*, p. 8.

10 *Sustainable Yields Project Report*, p. 10.

6.12 The committee also notes that contrary to the position put forward by the CSIRO, Mr John Clements of Namoi Water, outlined that farmers in the Namoi area were working hard to remain viable in the face of a sixty per cent drawback in groundwater:

> …we have a group of farmers who have responded well to change…We have had serious drawbacks of water, with 60 per cent of the groundwater - so 60 per cent of the investment basis for the businesses - clawed back and 30 per cent of the surface water clawed back. But our farmers are still viable, they are still profitable, and they have responded to change. We have taken on GPS technology. We are keeping stubble and incorporating it into the fields. We are getting our carbon up. We are getting our moisture retaining capacity up. We are reducing the number of operations we run over the country. These are the changes you carry out when you are living in a world of reduced water, be that due to policy or to drought, or to any other factor that people might want to bring into the equation.[11]

6.13 The CSIRO notes that climate change has the potential to impact on rainfall recharge into groundwater. However, the CSIRO states that in areas where rainfall recharge is predicted to be lower under a drier climate, other sources of recharge would support continued groundwater extraction. The CSIRO describes as 'minor' the impact of 2030 climate conditions on rainfall recharge and groundwater levels, compared to the impacts resulting from current and additional future extraction:

> Under the median 2030 climate only small changes in rainfall recharge would be expected across the MDB: small decreases in the south and small increases in the north …
>
> Overall, the impacts of climate change by 2030 on rainfall recharge and groundwater levels would be minor compared to either the impacts already caused by groundwater extraction or the additional impacts associated with expected additional future extraction. Climate change by 2030 will have only very small impacts on water exchange between aquifers and rivers and would have no net impact on these exchanges across the MDB.[12]

Flow regimes and floodplain wetlands

6.14 The CSIRO notes that water resource development has altered the seasonal character of flow regimes in the MDB:

> …in the major southern rivers high winter flows are captured for irrigation release in the summer leading to seasonal inversion of flow downstream of major dams. Further downstream, past the major diversion points, flow seasonality is largely restored but the amplitude of the seasonal variation is greatly reduced due to consumptive use.[13]

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11 *Committee Hansard*, 10 March 2009, pp 15-16.

12 *Sustainable Yields Project Report*, pp 47, and 49.

13 *Sustainable Yields Project Report*, p. 52.

6.15 The *Sustainable Yields Project* report states that climate change by 2030 could have major additional effects on the seasonal patterns of flow. The greatest changes are likely at the high-flow times of the year:

> In the north, wet season flows may either increase due to increasingly extreme events or decrease due to an overall drying. In the south, flows are generally expected to be lower, particularly during the wet season.[14]

6.16 According to the CSIRO, water resource development has had a major impact on flooding regimes of many important floodplain forests and wetlands. Further, the CSIRO state that climate change would also impact on environmentally beneficial flooding. The CSIRO states that the impacts of climate change by 2030 would be smaller than water resource development, however, there is the potential for severe impacts:

> …when the incremental impacts of climate change are superimposed on the existing impacts from water resource development, the ecological consequences could be major. This is because important ecological thresholds may be crossed and resulting changes may well be largely irreversible. The population and wider ecosystem consequences of such changes could be catastrophic.[15]

6.17 The *Sustainable Yields Project* report also states that the median 2030 climate would increase the duration of the dry periods between important flood events for all the Living Murray Icon sites:

> There would only be relatively small increases in the average period between flooding for most Icon Sites, but the average period would double for Chowilla Floodplain and Lindsay-Wallpolla Islands to be about every 18 years – almost eight times the without-development period. The average annual volumes of environmentally beneficial floods would be close to halved for all the Icon Sites along the Murray River. On average they would only receive about one-tenth of the flooding volume they received under without-development conditions.[16]

6.18 The CSIRO's submission to the committee further illustrates this point:

> For example, in the case of the Barmah Forest on the Upper Murray River, the impacts of climate change are estimated to reduce the incidence of flooding from every one to two years under natural conditions, to one in four years under the best estimates of the impacts of climate change. This compares with a flood frequency of once every three and a half years on average currently under levels of water resource development and the historical climate.[17]

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14 *Sustainable Yields Project Report*, p. 52.

15 *Sustainable Yields Project Report*, p. 52.

16 *Sustainable Yields Project Report*, p. 53.

17 *Submission 2*, p. 5.

Run-off

6.19 The Murray-Darling Basin Commission (MDBC) also provided the committee with information on the impacts of climate change on run-off in the Murray-Darling Basin from its Risks to Shared Water Resources Program. That study projected that the likely impact of climate change on run-off in the Murray-Darling Basin was 1100 gigalitres/ annum in 20 years and 3300 gigalitres/ annum in 50 years. The committee also notes that the MDBC's submission describes these figures as 'highly uncertain'.[18]

6.20 The MDBC also provided the committee with some results from its South Eastern Australian Climate Initiative in relation to the impacts on run-off in the MDB:

> …in 2030 run-off, in the northern part of south eastern Australia is likely to change by between -25% and 20% with a median of -5%, while the southern part of South Eastern Australia has a likely change between -30% to 0% with a median of -15%.[19]

Planning for the impacts of reduced water availability

6.21 The committee heard from a number of witnesses who outlined how the MDB could be better managed to enable it to cope with the impacts of reduced water availability. For example, Dr Kerri Muller discussed building resilience into wetland systems:

> It is critical that we maintain the ecosystem services of our wetlands and our genetic diversity, particularly coming into climate change. We need to improve the resilience of our ecosystems to changes such as climate changes. It is something that we do have to look at: sharing water between wetlands but making sure that ecological processes and functionality are occurring at all levels.[20]

6.22 The committee also received evidence to the effect that the MDB needs to be reconfigured in order to adjust for the impacts of climate change.

6.23 The Wentworth Group of Concerned Scientists (Wentworth Group) described climate change as the 'double whammy' for the MDB, exacerbating a climate shift similar to the pre-1950s low rainfall pattern.[21] The Wentworth Group argue that extractions from the system need to reduced in order to:

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18 *Submission 4*, p. 2.

19 *Submission 4*, p. 3.

20 *Committee Hansard*, 10 September 2008, p. 14

21 *Submission 71*, Part 1 of the inquiry, p. 12. See also: Dr John Williams, Wentworth Group, *Committee Hansard*, 10 March 2009, pp 49-50.

> (1) correct our over-allocation during a period of plenty, (2) to be more sustainable under climate cycles we have experienced in the past and (3) to adjust to declining water availability under climate change.[22]

6.24 An analysis commissioned by the Wentworth Group suggests that consumptive use of water across the MDB will need to be cut by between 42 and 53 per cent in order maintain healthy rivers and provide high quality water to produce food.[23]

6.25 Mr Terence Korn, of the Australian Floodplain Association, favours a risk assessment approach, factoring in climate change, to determine which assets in the Basin should be saved:

> You really need to think about 50 years ahead and factor in climate change and make a risk assessment and say that these are the areas that we think we can save. My personal view is that you should have a triage approach to this and say that that area has had it, so you are not going to waste any money on that. It will just have to go by the wayside. Another area we might be able to do something with through the strategic process. And another area is basically untouched.[24]

6.26 Similarly, Professor Mike Young advocates downsizing and reconfiguring the river system. Part of this process would be to create a water sharing system that can adjust automatically to climate change:

> …we need, as part of this, a regime that enables adjustment to occur autonomously and a proper regime. The Murray-Darling Basin cap needs to be replaced, as we agree, with a national water initiative, with a regime that sets aside first the maintenance water and then a system that shares inflows. …You give the environment an equivalent share and you define the entitlement to the environment, in exactly the same way as you do for all users. Then if it gets drier, both sides know what they have to do, and we put in place a structure which does not impede change.[25]

6.27 Professor Young identified one of the problems with current water planning is that it has not coped with managing a changing resource:

> What we tend to do in Australia in water resources is to write documents this high and plans like this, which are so detailed that they do not work. Then, as we have discovered, we go through a long community process and we all agree to follow the plan. You will be told by representatives right around Australia that most of the water sharing plans in the Murray-Darling are currently suspended. They were written to give security in times of

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22 *Submission 71*, Part 1 of the inquiry, p. 1.

23 *Submission 71*, Part 1 of the inquiry, p. 1. See also: Mr Peter Cosier, Wentworth Group, *Committee Hansard*, 10 March 2009, p. 46.

24 *Committee Hansard*, 10 March 2009, p. 43.

25 *Committee Hansard*, 10 September 2008, pp 25-26.

> crisis. When the crisis came, we suspended them all because they did not work.[26]

6.28 In discussing the impacts of climate change on the MDB, the *Sustainable Yields Project* report notes that, under current surface water sharing arrangements in the MDB, consumptive users would generally be protected from the anticipated impacts of climate change. However, the report goes on to state that current surface water sharing arrangements offer riverine environments little protection from the anticipated impacts of climate change.[27]

6.29 The committee notes the evidence of Dr Bill Young of the CSIRO which highlighted that these comments in the *Sustainable Yields Project* report are not about the level of protection for the environment *per se*. Rather, the comments are specifically about the impact on consumptive use verses the environment at times of reduced water availability under climate change.[28]

6.30 The *Sustainable Yields Project* report states that the level of protection that riverine environments have from the impacts of climate change should be considered in the development of future water plans. Specifically, the report draws attention to the requirements of the National Water Initiative that water plans should consider the risk of climate change on the size of the water resource and the implications for sharing.[29]

6.31 The committee also notes the work of Professor Young on treating connected groundwater and surface water resources as a single system as a means of dealing with adverse climate change.[30] The *Sustainable Yields Project* report also makes suggestions about all groundwater use coming under the water entitlement system. However, the committee notes that the *Sustainable Yields Project* report makes these comments in relation to concerns about the impact of groundwater extractions on water availability, and not climate change impacts.[31]

Committee view

6.32 Climate change is only one of a number of factors which impacts water availability in the Basin. For example, factors such as the increased use of water from interception activities such as forestry plantations also need to be considered.

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26 *Committee Hansard*, 10 September 2008, pp 25-26. See also: Dr John Williams, Wentworth Group, *Committee Hansard*, 10 March 2009, pp 47-48.

27 *Sustainable Yields Project Report*, p. 8.

28 *Committee Hansard*, 16 March 2009, p. 9.

29 *Sustainable Yields Project Report*, p. 8.

30 Professor Mike Young and Mr Jim McColl, *Grounding Connectivity: Do rivers have aquifier rights?*, Droplet No. 13, 28 September 2008, tabled 13 March 2009.

31 *Sustainable Yields Project Report*, p. 10.

6.33 The committee notes the policies that the Australian Government has already put in place, such as *Restoring the balance in the Murray Darling Basin* and the *Sustainable Rural Water Use and Infrastructure Program*, to plan for a future of reduced water availability in the Basin. The committee also notes that the government has been waiting for the *Sustainable Yields Project* report.

6.34 The committee acknowledges the work of the CSIRO through the Sustainable Yields Project. However, there is concern that this report has not taken enough of a holistic view in being able to establish sustainable diversion limits.

6.35 The committee also notes the advice of Mr Freeman, Chief Executive of the Murray-Darling Basin Authority, about using the results of the *Sustainable Yields Project* as a basis for planning in the period until 2014, when the Basin Plan will take effect across parts of the Basin. Mr Freeman cites the 'big difference' between the sustainable yields in the CSIRO's work and the determination of a sustainable diversion limit for the purposes of the Basin Plan:

> They are quite different numbers. It is fair to say that you could start revisiting a plan in the context of the climate change scenarios that CSIRO have highlighted through their planning. That is correct. But how much of that water will be available for consumptive use is undetermined until we get the sustainable diversion limits. So I think you can see that the total water resource is reducing in certain scenarios. But a bigger issue is: how much of that will now be made available for consumptive purposes within the sustainable diversion limit?[32]

6.36 The committee recommends that any policies derived as a result of the *Sustainable Yields Project* be carefully examined and reviewed in light of the assessed impact on water availability, with particular consideration given to policy impacts on groundwater extractions.

Recommendation 10

6.37 The committee recommends that any policies derived as a result of the *Sustainable Yields Project* be carefully examined and reviewed in light of the assessed impact on water availability, with particular consideration given to policy impacts on groundwater extractions.

6.38 Further, the committee recommends that a study be conducted on the impact of decreased water availability, as a result of government policy, on food production areas along the MDB. The study should take into account other studies and results completed in this area.

Recommendation 11

6.39 The committee recommends that a study be conducted on the impact of decreased water availability, as a result of government policy, on food production

32 *Committee Hansard*, 13 March 2009, p. 53.

areas along the MDB. The study should take into account other studies and results completed in this area.

Chapter 7

Unregulated water interception activities

Introduction

7.1 This chapter begins with an overview of the types of water interception activities carried out in the Murray-Darling Basin (MDB or Basin) and includes a brief section on the risks posed by water theft in the MDB. The discussion then moves to a general overview of the efforts of the Commonwealth, State and Territory governments to regulate water interception activities.

7.2 The committee was particularly interested in the impact of floodplain harvesting in the Basin. This chapter concludes with a discussion of this issue, including an overview of the steps taken by the New South Wales and Queensland governments to regulate this activity.

Water interception activities in the Murray-Darling Basin

7.3 The *National Water Initiative* (NWI) recognises that a number of land use change activities have the potential to intercept significant volumes of surface and/or groundwater now and in the future. The NWI identifies farm dams and bores; intercepting and storage of overland flows; and large-scale plantation forestry as examples of activities that are of concern, many of which are undertaken without a water access entitlement.[1]

7.4 Accurate current levels of water interception across the MDB are not available.[2] However, the CSIRO has been able to estimate the longer-term impact of some of these interception activities:

> The Murray-Darling Basin Sustainable Yields Project estimated the additional water use of likely new commercial forestry plantations and additional small farm dams by 2030. Mainly due to the small increases in commercial forestry plantation area, it was estimated that impacts by 2030 would be small at the scale of large rivers and the whole Basin, although they may have considerable impact on streamflow at the local scale. The best estimate of the additional surface water use due to the expansion in commercial forestry plantations was 28 GL/year on average. Farm dam construction is controlled in different ways in different states, but further increases are likely in many regions. Likely new small farm dams by 2030

1 Intergovernmental Agreement on a National Water Initiative (NWI), paragraph 55.

2 Department of the Environment, Water, Heritage and the Arts (DEWHA), *Submission 1A*, Part 1 of the inquiry, p. 12.

> were estimated by the Murray-Darling Basin Sustainable Yields Project to represent an additional surface water use of 170 GL/ year on average.[3]

7.5 The CSIRO's submission notes that the *Sustainable Yields Project* has also identified other water intercepting activities, namely stock and domestic bores, land use intensification, and changes in land management practices designed to improve vegetation growth and water retention in the landscape. However, the impact of these interception activities could not be investigated by the project due to a general lack of data.[4]

7.6 The Murray-Darling Basin Commission (MDBC) provided the committee with information from its 'Risks to Shared Water Resources' Program which investigated the risks to the MDB from climate change, bushfire, afforestation, groundwater extraction, irrigation return flows, and farm dams:

> Initial investigations identified that annual stream flows in the Basin could potentially be reduced by between 2500 GL – 5500 GL over the next 20 years – 10-23% of annual stream flow. While there was a large degree of uncertainty about these impacts, further investigations have found that the main risks derive from climate change.[5]

7.7 The National Farmers' Federation (NFF) provided the committee with this assessment of the impact of unregulated water interception activities across the Basin:

> Unregulated water interception activities could also refer to stock and domestic water rights or basic landholder rights as these are now more widely [known]. Such licences could fall into the category of unregulated; however, these rights are enshrined in state water legislation. In the majority of cases, these are unlicensed and unmetered due to the smaller individual volumes and the prohibitive cost of metering for small volumes. In some situations, like Victoria, such uses have been 'deemed' to account for the use as part of the water source water-sharing plan.
>
> NFF understands that stock & domestic (farm dams) have little impact on surface water in Queensland due to the low stock carrying capacity per hectare of land. Queensland does require licensing of intensive livestock operations, however, these generally use water sourced from the Great Artesian Basin, which is undergoing a capping and piping program.[6]

7.8 The committee received limited information on the risks posed by water theft in the Basin. The CSIRO identified a number of ways in which water theft could

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3 *Submission 2*, p. 5. See also: *Submission 1A*, Part 1 of the inquiry, p. 12.

4 *Submission 2*, pp. 5-6.

5 *Submission 4*, p. 2.

6 *Submission 13*, p. 9. The National Farmers' Federation (NFF) contend that with the implementation of floodplain harvesting legislation in NSW there is no 'unregulated' water interception activities in that State. The NFF also state that all flood plain harvesting in Queensland is regulated or authorised. See *Submission 13*, pp 8-9.

occur: through the greater than permissible run-off harvesting, or greater than permissible pumping of river water or groundwater. The CSIRO indicated that it is not aware of investigations into the prevalence of water theft and water volumes involved.[7]

7.9 The NFF indicated its support for an appropriate compliance program to address the theft of water, including monetary and water penalties. The NFF's submission notes that in many cases the issue is the detection of the action and the proof of theft. The NFF submission supports a significant investment in metering:

> However, in reality a cost to benefit analysis should accompany the decision to install new meters to ensure that small volumes of diversion are not accompanied by a very expensive meter. In the latter case, it may be appropriate to deem the volume of water taken and use other methods to ensure compliance (eg satellite imagery or helicopter/plane assessment at peak irrigation times).[8]

7.10 The Queensland Department of Natural Resources and Water noted in its submission that it carries out the investigation and enforcement of illegal activities such as water theft, unauthorised works for storage, unauthorised diversion and pumping and meter tampering. The submission went on to highlight the assessment of the MDBC's Independent Audit Group (IAG) in its *Review of Preliminary Assessments of Risks to Shared Water Resources 2007*:

> The IAG was impressed by the Queensland approach to ensuring compliance with water policy and regulatory controls and in dealing with reports of inappropriate or illegal water related practices…The Queensland approach to natural resource management compliance may well be a model for other jurisdictions to consider.[9]

7.11 Ms Sarah Moles gave the committee a different perspective on the issue of water theft, submitting that 'unscrupulous' landholders saw water theft as merely another input cost to production:

> The current penalties for breaching licence conditions are totally inadequate and unscrupulous landholders regard them as merely another (affordable and tax deductible) input cost. Landholders affected by water theft believe penalties should be much more severe and many support reducing entitlements and/or access conditions as more effective deterrents and penalties.[10]

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7 *Submission 2*, p. 6.

8 *Submission 14*, p. 8.

9 *Submission 12*, pp 4-5.

10 *Submission 1*, p. 6.

Regulation of water interception activities

7.12 Responsibility for the regulation of water interception activities rests with state and territory governments. In agreeing to the NWI, the parties acknowledged that if interception activities are not subject to some form of planning and regulation, they present a risk to the future integrity of water access entitlements and the achievement of environmental objectives for water systems:

> The intention is therefore to assess the significance of such activities on catchments and aquifers, based on an understanding of the total water cycle, the economic and environmental costs and benefits of the activities of concern, and to apply appropriate planning, management and/or regulatory measures where necessary to protect the integrity of the water access entitlements system and the achievement of environmental objectives.[11]

7.13 The NWI sets out a series of measures for parties to implement in relation to water interception activities.[12] According to the Department of Environment Water Heritage and the Arts' (DEWHA) submission, the NWI 'provides a framework for risk-based management of interception based on the level of allocation in a given catchment or aquifer'.[13]

7.14 Despite this framework being in place, it appears that jurisdictions have made little progress in relation to regulation of water interception activities. An assessment of the NWI in 2007 by the National Water Commission states:

> Water interception activities (such as large scale forestry and farm dams) continue to be recognised by governments as serious challenges to water security, but action by governments to date has been neither concerted nor systematic.[14]

7.15 DEWHA's submission summarises the issues impeding the introduction of regulatory reforms:

- there is uncertainty within jurisdictions as to how to approach the requirements on interception;
- current jurisdictional responses to interception are variable and patchy; and
- where there is legislation, compliance does not appear to be adequate and policing is very sporadic.[15]

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11 NWI, paragraph 56.

12 NWI, paragraph 57.

13 *Submission 1A*, Part 1 of the inquiry, p. 13.

14 National Water Commission, *National Water Initiative: First Biennial Assessment of Progress in Implementation*, 2007, p. 3.

15 *Submission 1A*, Part 1 of the inquiry, p. 13.

7.16 At the 26 March 2008 Council of Australian Governments' meeting it was agreed, as one of the projects of the forward work program to address water reform issues, to accelerate the interception commitments of the NWI and a national consistent approach to the management of interception, in line with those commitments.[16]

7.17 The MDBC provided the committee with some of the work that it had been done on the regulatory approaches to the management of interception risk factors in the Basin. In December 2006 the MDBC requested Basin jurisdictions report on the regulatory approaches, and identify potential growth, for the risks over which they have direct legislative control – farm dam construction, groundwater extraction, and afforestation. The MDBC summarised the key issues identified through the resulting reports as:

- approval for water use is not required in most jurisdictions for farm dams and groundwater bores for stock and domestic purposes;
- uncertainty in estimating the potential cumulative future impact on shared water resources due to lack of regulation of farm dams and extraction from groundwater for stock and domestic purposes;
- difficulty defining a sustainable yield for groundwater extraction;
- limited capacity in most jurisdictions to regulate water use for afforestation; and
- policy response development has been complicated by the use of different approaches and definitions in the regulation of the risk factors by the jurisdictions.[17]

7.18 The MDBC's submission also states that '[e]ach jurisdiction claims that existing regulatory mechanisms are sufficient to limit future growth in farm dam establishment and groundwater extraction'.[18]

7.19 The risks of water interception activities to the MBD were also considered as part of MDBC's 'Murray-Darling Basin Risks Strategy' (Risks Strategy). According to the MBDC, the Risks Strategy 'provides an objective operating framework and a broad process to ensure a consistent and flexible approach to the management of risk factors now and into the future'. The Risks Strategy involved annual assessments by Basin jurisdictions of priorities and responses to risk factors to the MDB and an annual review of these assessments by an Independent Audit Group.[19]

16 *Submission 1A*, Part 1 of the inquiry, p. 13.

17 *Submission 4*, p. 3.

18 *Submission 4*, p. 3.

19 *Submission 4*, p. 4.

7.20 Information from the MDBC suggests the possibility that the Risks Strategy may be continued under the Murray-Darling Basin Authority, for the purposes of implementing the Basin Plan:

> The Basin Plan must include an identification of the risks to the condition, or continued availability of the Basin water resources, and the strategies to be adopted to manage or address these risks. The Risks Strategy may inform this task by delivering information and research into potential options to address the currently identified risk factors.[20]

Harvesting of overland flows

7.21 One particular area of interest for the committee was the regulation of overland flows in the northern MDB. The investigation of, and the enforcement of penalties for, illegal water diversions is primarily the responsibility of the states and territories.[21] This section of the report looks at the steps being taken by the NSW and Queensland governments to monitor the harvesting of overland flows.

7.22 Mrs Deborah Kaluder of the Australian Floodplain Association explained to the committee the impact that unregulated floodplain harvesting has on floodplain graziers:

> Many of us have been directly affected by the loss of water across our land. We are seeing our incomes halved, our small communities diminishing, the local ecosystems deteriorating and, consequently, the biodiversity of whole riverine systems on the point of collapse...
>
> Flood plain graziers depend on the water that flows down the inland river systems to grow the grasses, to feed the stock, to produce an income and to be economically viable. In terms of a grazing operation, the flood plains play an integral role in the long-term management plans of those who live along these systems.[22]

7.23 Mr Terence Korn of the Australian Floodplain Association expressed concern at the inability of governments to successfully monitor and manage this practice.[23] In particular, Mr Korn indicated that policy development and implementation in this area has been poor or not resourced.[24] The committee also notes the evidence of Professor

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20 Murray-Darling Basin Commission, *Risks to Shared Water Resources. FAQ: Murray-Darling Basin Risks Strategy*, May 2008, p. 2.

21 DEWHA, *Submission 1A*, Part 1 of the inquiry, pp 13-14. However, the *Water Act 2007* provides for a greater Commonwealth role through the Murray-Darling Basin Authority in the enforcement of illegal taking of water in the MDB, once the Basin Plan is in place and current plans expire.

22 *Committee Hansard*, 26 September 2008, pp 47-48. See also: Ms Sarah Moles, *Submission 1*, p. 6.

23 *Committee Hansard*, 10 March 2009, p. 38. See also: Mrs Deborah Kaluder, Australian Floodplain Association, *Committee Hansard*, 26 September 2008, p. 50.

24 *Committee Hansard*, 10 March 2009, p. 42.

Richard Kingsford who described the management of floodplains in Australia as 'very, very poor', going on to state that 'there is very little policy development and very little legislation that actually helps'.[25]

7.24 The committee also recognises the distinction made by Mr John Clements of Namoi Water in his evidence to the committee:

> …we don't agree with water theft. I do not think overland flows should be characterised as water theft: where they are a licensed activity, they are a licensed activity.[26]

New South Wales

7.25 The New South Wales government has announced the development of a floodplain harvesting policy to bring these activities under the statutory framework of the *Water Management Act 2000 (NSW)* and to 'put a stop to the unconstrained harvesting of floodwater':

> The policy will look at the types and capacity of floodplain harvesting activities, the volumes of water being extracted and the potential impacts on associated riverine ecosystems and downstream users.
>
> Under the new draft Policy, the amount of floodwater available for commercial extraction will be capped and shared amongst existing users who will have to get a Floodplain Harvesting Access Licence.
>
> …Works such as levees, banks and diversion channels already need approval from the NSW Government before construction begins. But from today, under this new policy, no additional works will be considered for approval to take floodplain water.[27]

7.26 The new policy will only apply to water flowing across a floodplain that is not covered by other licences or landholder rights. In particular, the policy will not cover harvestable rights limits which allow landholders to capture and store 10 per cent of the rainfall runoff on their property without a licence.[28]

7.27 The Inland Rivers Network (IRN) provided the committee with a copy of its submission in response to the NSW government's announcement of the development of a floodplain harvesting policy. Some of the key recommendations from IRN's submission include that the policy should:

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25 *Committee Hansard*, 19 September 2008, p. 8.

26 *Committee Hansard*, 10 March 2009, p. 24.

27 NSW Department of Water and Energy, *Floodplain harvesting policy to provide security for NSW rivers and communities*, Media Release, 3 July 2008.

28 NSW Department of Water and Energy, *Floodplain harvesting policy to provide security for NSW rivers and communities*, Media Release, 3 July 2008.

- include explicit details on how environmental water regained through the adequate regulation of floodplain harvesting and water entitlement recovery will be provided with legal recognition and protection;
- ensure that there is a sunset clause within the policy for licences to enable a review of these licences;
- floodplain harvesting limits should be set according to sustainable levels of extraction, determined in light of best available science and climate change estimates, which may well mean ensuring floodplain harvesting is not only within MDB cap limits but below them;
- works licensed for flood control and without pending water extraction licence applications, should be treated as illegal in line with all other works not licensed for extraction; and
- floodplain harvesting extraction should be included within current water sharing plans.[29]

7.28 The committee was also interested in the investigations that the New South Wales government has carried out on water diversions and floodplain structures. The NSW Department of Water and Energy provided the committee with the following information on its investigations of water diversion and floodplain structures in NSW:

> A total of 39 water diversion and floodplain structures have been investigated by NSW Government during the past 18 months.
>
> 15 of these were investigated in August 2007 and, more recently, a further 24 structures under the joint Commonwealth-NSW Wetland Recovery Program.
>
> 3 of these structures have been identified as not operating in accordance with the conditions of their licence and 3 works have been constructed without approval, 5 were identified during the August 2007 investigations and only 1 under the more recent investigation.
>
> Respective licensees have been requested to make appropriate modifications to comply with licence conditions or have been advised that their works are not approved.[30]

Queensland

7.29 In Queensland, under the *Water Act 2000 (Qld*), for areas where a water resource plan is in place, an authorisation is required to take overland flow water. Most works for taking overland flow require an approval under the *Integrated*

29 *Submission 9*, Attachment: Inland Rivers Network, *Submission to Department of Water and Energy on Draft Floodplain Harvesting Policy*, 2008, pp 1-2.

30 Answers to Questions on Notice, 18 September 2008 (received 9 October 2008).

Planning Act 1997 (Qld).[31] The submission of the Queensland Department of Natural Resources and Water stated that overland flow is now regulated via water resource plans in the majority of plan areas, including all of Queensland's MDB catchments.[32]

7.30 When questioned by the committee as to how water taken from overland flow was measured, representatives of the Queensland Department of Natural Resources and Water gave the following example from the lower Balonne:

> …we have required registered professional engineers to survey the storages in that area, the largest within the catchment, and those surveys have had to be certified by those registered professional engineers: the volume had to be certified and how the water gets into the storages had to be certified. We have used measuring devices – and they are not the water meters for a pipeline that people are used to seeing; they are measuring devices that are based on the depth of water in storage—and from that information we can tell how much water has been captured by that particular storage.[33]

7.31 One issue which the committee considered briefly in the course of its inquiry was floodplain development on the Paroo River in Queensland. Under Queensland legislation, the Minister has the power to put in place a moratorium on developments that increase the take of water resources from the catchment until the water resource planning process is complete. In 2001 a moratorium was put in place over the Paroo River catchment.

7.32 In August 2008 a case study released by Professor Richard Kingsford and Adam Roff of the University of New South Wales raised concerns about structures on the Paroo River that captured overland flow. The structures were approved as 'existing works' by the Queensland Department of Natural Resources and Water (that is, established or initiated at the time of the moratorium in 2001). The University of New South Wales case study stated that there was 'unequivocal evidence' that these existing works did not exist in July 2002.[34]

7.33 The committee notes that the Queensland Department of Natural Resources and Water, in responding to a question on notice, asserts that the works in question are

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31 Queensland Department of Natural Resources and Water, *Overland flow water: Fact sheet*, September 2008; Queensland Department of Natural Resources and Water, *Submission* 12, p. 4; and Mr Greg Claydon, Queensland Department of Natural Resources, *Committee Hansard*, 9 September 2008, p. 48.

32 *Submission 12*, p. 4. See also: NFF, *Submission 13*, p. 9.

33 Mr Scott Spencer, Queensland Department of Natural Resources, *Committee Hansard*, 9 September 2008, p. 52.

34 See R Kingsford and A Roff, *A case study: floodplain development on the Paroo River. The last free flowing river in the Murray-Darling Basin*, August 2008, pp 3-5.

not works that allow taking overland flow water.[35] The committee also notes the evidence of Professor Kingsford that he stands by the results in the case study.[36]

Committee view

7.34 The committee notes that there are significant discrepancies between states in implementing their obligations.

7.35 The committee notes that the National Water Commission identified uncertainty within jurisdictions as to how to approach the requirements on interception. Similarly, the committee notes the work of the MDBC which found that a key issue in the management of interception activities was that policy response development has been complicated by the use of different approaches by the jurisdictions.

7.36 Clearly, this is an area which deserves further attention at the level of the Council of Australian Governments to clarify and direct the way forward to ensure States and Territories have a consistent and timely approach to regulation.

7.37 The committee's understanding of the evidence before it is that in cases where there is some regulatory regime in place in relation to water interception activities, there is inadequate monitoring and policing of these regimes. The committee thought that this issue was well demonstrated in relation to the harvesting of overland flows. While it appears that both New South Wales and Queensland are well advanced in policy development and implementation, the committee is not convinced from the evidence it has heard that compliance and monitoring of these regimes is adequate.

7.38 The committee strongly urges these governments to consider increasing resources to ensure adequate monitoring of the harvesting of overland flows.

7.39 The committee recommends that priority should be given to upgrading and modernising monitoring of water usage from the MDB.

7.40 The committee recommends urgent identification of unregulated water interception activities across the MDB. The relevant data should be used to inform the development of state policies regarding the regulation of usage of these activities.

Recommendation 12

7.41 The committee recommends that priority should be given to upgrading and modernising monitoring of water usage from the MDB.

35 Answers to Questions on Notice, 9 September 2008.

36 *Committee Hansard*, 16 March 2009, p. 17.

Recommendation 13

7.42 The committee recommends urgent identification of unregulated water interception activities across the MDB. The relevant data should be used to inform the development of state policies regarding the regulation of usage of these activities.

Recommendation 14

7.43 The committee recommends a study to be undertaken to better understand how the states monitor and manage the harvesting of overland flows and to provide policy development guidelines in this area for the relevant states.

Chapter 8

Other issues

Introduction

8.1 This chapter considers two of the inquiry's Terms of Reference:

(a) the ability of the Commonwealth to bind state and territory governments to meet their obligations under the *National Water Initiative*; and

(b) the adequacy of state and territory water and natural resource management legislation and enforcement arrangements.

8.2 The committee received very little information on the Term of Reference in relation to the *National Water Initiative* (NWI). This chapter discusses the progress of the implementation of the NWI. The discussion concludes with a brief overview of the evidence that the committee received on the implementation of the NWI and the appropriateness of these reforms to the current situation in the Murray-Darling Basin (MDB or Basin).

8.3 A range of issues were raised with the committee with respect to state and territory water and natural resource legislation and enforcement arrangements. The discussion in this chapter is in the context of the inadequacies of state and territory natural resource management and water legislation and enforcement in relation to the impacts on the MDB. Some of these issues are covered in greater depth and in a broader context in other areas of the report and are therefore only briefly mentioned here.

Progress in implementing National Water Initiative reforms

8.4 In 2007 the National Water Commission released its First Biennial Assessment of the Progress in Implementation of the National Water Initiative. That report summarised the progress of the NWI saying:

> …the NWI remains the primary and enduring national blueprint for water reform in Australia. The implementation of the NWI is delivering real improvements in the management, use and understanding of water in Australia. Despite considerable change in Australia's water circumstances since signature of the NWI, the NWI's policy prescriptions continue to be widely accepted as the right ones for Australia.
>
> However the [National Water] Commission urges governments to avoid complacency. There is much that needs to be done, and much that needs to be done faster.[1]

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1 National Water Commission, *National Water Initiative: First Biennial Assessment of Progress in Implementation*, 2007, p. 3.

8.5 Overall, the National Water Commission found that governments had made considerable progress in the implementation of the NWI over the first two years of its operation. The National Water Commission highlighted the following areas as requiring more work to improve and accelerate the implementation of NWI reforms:

- overallocation of water resources;
- groundwater and surface water interaction;
- interception of water from land use change;
- integrated management of environmental water;
- water accounting, measurement and compliance; and
- urban water management.[2]

8.6 In February 2008, the National Water Commission provided an update on the implementation of water reform under the NWI to the Council of Australian Governments (COAG). That updated noted that the NWI continued to be the 'primary and enduring national blueprint for water reform'. Further, despite considerable change in Australia's water circumstances in the four years since the NWI was first signed, its policy prescriptions continue to be widely accepted as the right ones for Australia:

> The implementation of water reform is delivering real improvements in the management, use and understanding of water. Significant progress has and continues to be made across a broad range of areas of water reform. Much of this progress can be attributed to the shared commitment by the Australian Government and state and territory governments under the NWI.[3]

8.7 The National Water Commission did highlight a number of barriers to the 'full and timely' implementation of water reforms, including:

- a serious and growing shortage of skilled water resource professionals to support water reforms and the necessary investments;
- 'policy bans' by some governments on certain urban water supply options; and
- in some cases a lack of clarity on the specific reforms required and the accountability for delivering them.[4]

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2 National Water Commission, *National Water Initiative: First Biennial Assessment of Progress in Implementation*, 2007, p. 7.

3 National Water Commission, *Update of progress in water reform: Input into the water subgroup stocktake report* (NWC Update on Water Reform), 15 February 2008, p. 19. Available at: http://www.nwc.gov.au/www/html/692-coag-update-report-on-water-reform.asp?intSiteID=1.

4 NWC Update on Water Reform, p. 20.

Discussion

8.8 The committee heard a range of views and opinions on the implementation of the NWI and the applicability and appropriateness of its principles to the current situation in the MDB.

8.9 The Queensland Department of Natural Resources and Water noted in its submission that the Queensland Government has allocated substantial resources to progress various elements of the NWI. The Queensland Department of Natural Resources and Water stated that, overall, it is progressing well towards fulfilling the requirements of the NWI, however, there are some issues which have caused delays to the implementation of the NWI:

> Queensland like all jurisdictions is facing resourcing challenges and delays in delivering on some parts of the NWI caused by extended drought conditions in many parts of the State and competition for limited skilled staff. Some NWI actions by their nature require national co-ordination and collaboration to ensure consistency between the states and territories. Queensland has representatives on the working groups that have been set up to progress these initiatives.[5]

8.10 Mr Peter Cosier of the Wentworth Group of Concerned Scientists (Wentworth Group) noted that in 2004 that organisation described the NWI as a 'historic reform' for water reform and that the principles in the NWI were 'superb'. However, Mr Cosier went on:

> What has happened since 2004 is the subtle gain between agencies at various states who then fling one example back as to why their state is better than the other. Here we are sitting for the umpteenth inquiry into why water reform [in] Australia has failed because we will not address the fundamental issue that we have grossly over-allocated the system. Until policy and governments of all levels confront that issue, we will be back here next year and the year after and the year after having the same debates.[6]

8.11 Dr John Williams of the Wentworth Group told the committee that in getting water reform issues to reflect the principles in the NWI is 'still very much ahead of us'. In particular, Dr Williams highlighted the lack of progress that has been made in reducing consumptive water use and establishing a formal entitlement for the environment.[7]

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5 *Submission 12*, p. 5.

6 *Committee Hansard*, 10 March 2009, p. 51.

7 *Committee Hansard*, 10 March 2009, pp 47-48. See also: Professor Mike Young, *Committee Hansard*, 10 September 2008, p. 21.

8.12 The National Farmers' Federation (NFF) expressed concern over the priority that States had given commitments under the NWI:

> The agricultural sector noted that the original water reforms were implemented according to what the State Governments saw as their achievements. These were not necessarily aligned with the expectations of entitlements holders.
>
> More recently, NFF lobbied strongly that the implementation of the NWI was proceeding at a level that prioritised State Government objectives at the disadvantage of agriculture.[8]

Committee view

8.13 The committee notes the concluding comments of the National Water Commission in its update to COAG in 2008:

> Full and timely implementation of the NWI reforms is required to deliver a nationally consistent framework capable of meeting Australia's water challenges. Each element of the NWI is an integral and complementary part of the overall reform blueprint and further progress in implementation is required across the board to achieve the broad objectives of the NWI. In addition, with respect to urban water, the NWI needs to be supplemented with an additional set of reform commitments.
>
> In light of the significant change to the context of water reforms since the NWI was agreed, and capacity constraints across jurisdictions, there is a strong case for improving implementation by clarifying roles and responsibilities across governments and service delivery entities, and reviewing timelines and priorities for implementation and associated resourcing requirements.[9]

8.14 It is the committee's view that the focus should not be on the Commonwealth's ability to bind states and territories to their obligations under the NWI. The committee is satisfied, given the reports of the National Water Commission that the NWI is still the appropriate blueprint for water reform, and that in a number of areas good progress is being made.

8.15 The committee believes that the focus should instead be on how the Commonwealth can better assist States and Territories to meet their obligations under the NWI. The committee notes that this may involve some amendment to, and clarification of, roles and responsibilities of the parties to the NWI.

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8 *Submission 13*, p. 9.

9 NWC Update on Water Reform, p. 20.

State and territory water and natural resource management legislation and enforcement arrangements

Natural resource management

8.16 Two significant inadequacies were highlighted in the inquiry in respect of natural resource management arrangements:

- a lack of harmonisation and integration of natural resource management within and between governments of the Basin; and
- a lack of consultation between catchment management authorities (or equivalent bodies) and key stakeholders.

8.17 Some specific concerns in relation to the operation of catchment management authorities in New South Wales were also raised with the committee and those concerns are set out in this section as well.

Harmonisation and integration of natural resource management

8.18 The lack of harmonisation within and between governments in the planning and implementation of natural resource management strategies was a significant inadequacy that was highlighted to the committee. For example, the submission of Mainstream Environmental Consulting and RiverSmart Australia provided the committee with the following damning assessment of the inadequacies of natural resource management in the MDB:

> …at the Federal level it appears there has been a failure to harmonise programs and policy between the Murray-Darling Basin Commission (MDBC) and the national programs rolling out funds for natural resource management (NRM). Programs such as the Natural Heritage Trust, National Action Plan for Salinity and Water Quality, National Landcare Program and the National Water Initiative's elements, have not been sufficiently integrated in their delivery, and the relationship between them the [Basin Plan] is unclear. It makes a mockery of the term 'integrated natural resource management' to allow these programs to continue operating in virtual isolation, largely as a consequence of history and institutional arrangements.
>
> When this same situation is replicated at State level, and made worse by more government agencies being involved, it is little wonder the Catchment Management Authorities are struggling and landholders are frustrated and deeply suspicious of government initiatives.[10]

10 MainStream Environmental Consulting and RiverSmart Australia, *Submission 12*, Part 1 of the inquiry, p. 4. See also: Ms Sarah Moles, *Submission 1*, p. 1.

8.19 A further example of this issue was highlighted by Mr Bruce Brown, General Manager of the Namoi Catchment Authority who noted that there is no association between catchment management authorities and the Murray-Darling Basin Authority:

> I think I am on the record that it would be better for the catchment management authorities in the Murray Darling Basin to become in some way associated with the Murray Darling Basin Authority and/or the Australian government. It is clear, simple management that I think would make everybody's job a hell of a lot easier…
>
> If the Murray-Darling Basin is under Commonwealth government control, and I am a catchment management entity that is in one of those catchments, does it make sense to be a statutory entity under a state government? I will not say any more.[11]

8.20 Dr Don Blackmore, a former Chief Executive Officer of the Murray-Darling Basin Commission, described for the committee the vision of how natural resource management in the Murray-Darling Basin was initially intended to operate in concert with other aspects of planning:

> The original version for integrated catchment management in the basin was to line up planning, to get natural resource planning integrated with town planning, state planning and the like. In some areas that has been successful, and Victoria has been more successful at it than anybody else. But I see the next 10 years as challenging this mightily, simply because, even when we go back into a wetter cycle, the scale of change we are going to see means that we are going to have to support our communities with the best planning we can give them…it would be better if they were working as a unit, however you put that together; that, to me, is a very important outcome.[12]

8.21 Dr Blackmore predicts that eventually planning, including natural resource management, would be aligned because 'inevitably we will not be able to afford four levels of government…'.[13]

Consultation with stakeholders

8.22 Another important issue that was raised with the committee in relation to natural resource management is the role of stakeholders and their contribution, or lack thereof, to natural resource management:

> …there is a serious problem with different treatment of various stakeholders that results in perverse environmental outcomes and a waste of

11 *Committee Hansard*, 10 March 2009, p. 26.

12 *Committee Hansard*, 9 September 2008, p. 100.

13 *Committee Hansard*, 9 September 2008, p. 96.

> taxpayers money and community investment in the development and implementation of on-ground NRM projects.[14]

8.23 Ms Sarah Moles gave the example of mining and energy resource companies not having a strong history of engagement with Catchment Management Authorities and regional NRM bodies yet their activities have significant implications for accredited NRM plans:

> Applications for mining, coal seam gas and petroleum exploration permits is accelerating in the northern MDB (and elsewhere). Many developments are designated 'projects of state significance' and receive special treatment under State Planning Policies (eg. For the protection of high quality agricultural land), and state legislation (eg. Queensland's Vegetation Management Act 1999.) The corporations are allowed to undertake activities such as broad scale clearing that other landholders are not permitted to do. Much development occurred during a policy vacuum and there is no requirement to comply with new regulations – particularly those covering the management of associated water- retrospectively.[15]

Specific issues in relation to New South Wales

8.24 The committee also received a submission from the National Parks Association of NSW which raised some specific concerns that organisation has in relation to the operation of Catchment Management Authorities in NSW. Those concerns included:

- that the constraints on land-clearing in the MDB in NSW are inadequate. Extensive land-clearing is still occurring throughout the Basin through approved clearing, and through loopholes such as 'invasive native species', 'change of regrowth date' and 'routine agricultural management activities'.
- that current levels of baseline terrestrial environmental data and planning in the MDB region are totally inadequate, and far worse than information available in other parts of the state.
- that responsibility for forcing NSW government agencies to abide by environmental laws is being borne by the community. The National Parks Association cited legal action it has taken against Forest NSW in relation to the logging of River Red Gum State Forests as an example of this issue.
- that there are a number of inadequacies in the Catchment Management Plans for certain catchments in the Murray-Darling Basin.[16]

14 Ms Sarah Moles, *Submission 1*, p. 6.

15 *Submission 1*, p. 6. See also Environment and Property Protection Association, *Submission 7*.

16 *Submission 10*, pp 6-10.

Water management, monitoring and enforcement

8.25 One of the issues highlighted in relation to the state and territory water management was the inadequacies in current water sharing plans. Specifically, overallocation of water resources across the Basin, and the impact that this has on the environment.

8.26 The lack of monitoring and enforcement of water legislation was also raised during the course of the inquiry, specifically in relation to floodwater harvesting. This issue is dealt with in Chapter 7 of this report.

Water Reform

8.27 The issue of overallocation is recognised as a problem throughout the MDB. The Commonwealth, States and Territories are taking steps, through the NWI and the Intergovernmental Agreement on Murray-Darling Basin Reform to implement water reform. However, despite these initiatives, the committee was provided numerous examples throughout the inquiry of inadequacies in States and Territories implementing water reform initiatives.

8.28 Victoria's four per cent annual cap on trading water out of irrigation areas (the four per cent cap) and 10 per cent cap on the amount of water shares in any water supply system that can be owned without being associated with land (the 10 per cent cap), was the subject of much discussion in this regard. For example, Dr John Williams, of the Wentworth Group of Concern Scientists, discussed the four per cent cap as an impediment to restructuring of the irrigation industry:

> The market has to be freed up so it works. So this issue of four per cent caps on trading out of irrigation companies has to be addressed. The issue of states putting legislation in that restricts trade with water and land has got to be addressed. When you have efficient markets, that will be a very powerful driver for innovation and change coupled with a structural adjustment approach that makes sure we generate the maximum wealth and resilience from the water we can afford to take out of the system.[17]

8.29 These Victorian caps were also discussed in the context of the impacts that they would have on the purchase of water for the environment.[18]

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17 *Committee Hansard*, 19 September 2008, p. 22; see also Ms Amy Hankinson, Inland Rivers Network, *Committee Hansard*, 18 September 2008, p. 17.

18 See for example: Professor Mike Young, Wentworth Group of Concerned Scientists, *Committee Hansard*, 19 September 2008, p. 30; Dr Arlene Buchan, Australian Conservation Foundation, *Committee Hansard*, 10 March 2009, p. 32. This issue is discussed further in Chapter 5 of this report.

8.30 The committee also heard some support for the four per cent cap in Victoria. For example, Mr Richard Anderson of the Victorian Farmers Federation responded to questioning by the committee on the economic impact of the four per cent cap:

> It may well have stopped the permanent trade, but that did not stop the water from trading to other areas. There is a temporary market and a lot of water has traded on that temporary market, so I think that [it] is drawing a long bow, that it stopped that level of production because that permanent water was not traded out. I think the other thing that people tend to forget is that the four per cent applies only to the gravity districts and the pumped pipe districts; it does not apply to diverters direct from rivers. That is why 8,000 megs of high security Victorian water were actually purchased in that first buyback.[19]

8.31 Mrs Deborah Kerr of the NFF noted that all States were 'flouting' the principle of competitive neutrality:

> Competitive neutrality literally means that one jurisdiction should not have an advantage over another jurisdiction or its irrigators in whatever way. At the moment, we have all jurisdictions flouting it. You have South Australia, whose irrigators do not pay for water, so when they are operating in a marketplace they are literally not paying for the delivery and the water management that other states charge their irrigators. They pay a $3 per megalitre levy at the Murray. They pay within their trust for the water that they apply. You have states that are providing money to their irrigators to allay the costs of water charges; Victoria is an example of that. You also have the South Australian government in the market, purchasing water for basically its permanent planting irrigators to underpin survival water planting. It is providing an unfair advantage, compared to other irrigators. It is not just one area. Premier Rann quite literally has laid this at the feet of Victoria, being the four per cent cap, but what we are saying is that all jurisdictions are flouting that competitive neutrality principle, not just one.[20]

8.32 During the course of the inquiry, the South Australian Government indicated its intention to investigate a constitutional challenge against upstream States to secure South Australia's rights to water from the Murray. In making this announcement, Premier Rann made specific mention of Victoria's four per cent cap as a barrier to a long term solution for the River Murray.[21]

8.33 The committee questioned a number of witnesses on their views of a High Court challenge by South Australia. Dr Arlene Buchan, of the Australian Conservation Foundation, expressed concern that a High Court challenge may delay

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19 *Committee Hansard*, 26 September 2008, p. 93.

20 *Committee Hansard*, 13 March 2009, p. 5.

21 See: The Hon. Mr Mike Rann, Premier, South Australia, Ministerial Statement, *House of Assembly Hansard*, 5 March 2009, pp 1885-1887.

work towards fixing the problems of the MDB.[22] Mrs Kerr of the NFF believed that the challenge would do more harm than good, and there is a role for the Council of Australian Governments to resolve the issue in a better way.[23]

8.34 The Victorian Government was not the only State criticised for its lack of action on water reform. For example, Mr John Clements of Namoi Water expressed his concerns that while New South Wales has been engaging in water reform for a decade, other States had not been as proactive. Mr Clements singled out South Australia for criticism in this respect, specifically the use of 'shallow, inappropriate lakes' for town water infrastructure and the use of barrages to keep sea water out of Lakes Alexandrina and Albert:

> The disaster is a lack of infrastructure and an avoidance by South Australia of getting into water reform and into infrastructure expenditure. It is called concrete. The concrete that is inappropriate is eight kilometres of concrete that holds the ocean out at Lake Albert and Lake Alexandrina. The concrete that would be appropriate would be some deep storages somewhere to store water deep so it does not evaporate and does not create salty residues; to actually get some infrastructure for this state so it ceases to demand that the system be run 24/7 so there is always water running past their pumps.[24]

8.35 Mr Clements suggested that South Australia should spend money on 'appropriate' infrastructure like a desalination plant or deeper storages with less evaporation.[25]

8.36 Mr James Danenburg, of the Conservation Council of SA, also thought that there was more that South Australia could be doing to reduce the water that it needs to take from the MDB:

> In the first instance, [Adelaide has] got the most underutilised resource in terms of stormwater; approximately 1.8 times our annual take on the Murray in the average year goes out to the gulf in terms of stormwater outflow each year. Even in a dry year it is still about one-third of our annual consumption of Murray River water. It is an absolute tragedy and travesty that this resource is not being adequately harvested.[26]

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22 *Committee Hansard*, 10 March 2009, p. 35.

23 *Committee Hansard*, 13 March 2009, p. 7.

24 *Committee Hansard*, 10 March 2009, p. 16.

25 *Committee Hansard*, 10 March 2009, p. 16.

26 *Committee Hansard*, 10 September 2008, p. 4. See also: Dr Tom Hatton, CSIRO, *Committee Hansard*, 9 September 2008, pp 23 and 28; Dr Kerri Muller, *Committee Hansard*, 10 September 2008, pp 10-11; the Hon. Karlene Maywald, *Committee Hansard*, 19 September 2008, p. 39; and Conservation Council of South Australia, *Submission 14*, p. 7.

Water sharing plans

8.37 The committee received substantial evidence relating to the inadequacies of the water sharing plans for the management of water in the Basin. For example, Dr Kerri Muller provided the following damning assessment on how overallocation of water throughout the Basin is impacting on the South Australia:

> Current Governance arrangements are failing the Basin's natural assets and in particular the Lower Lakes and Coorong that are subject to failures to implement sustainable water allocations and river management policies across the whole Basin given their location at the bottom of the system. There are over 140 plans covering the South Australian portion of the Murray-Darling Basin alone. Too much water is taken out of the Basin for its water dependent ecosystems to survive and this has been evident in the declining state of the environment particularly since the wet conditions of the 1990s that spawned extensive water resource development as well as a burst of health for the Basin's wetlands.[27]

8.38 The Inland Rivers Network (IRN) provided the following opinion on the inadequacies of the NSW approach to water sharing in the Basin:

> The experience of IRN with respect to the *Water Sharing Plan* approach as applied in NSW, which has effectively entrenched a 15-year regime of over allocation, a cap system that has failed to take account of floodplain harvesting, and lack of adequate resources to ensure compliance, has been disappointing. This suggests that it is the lack of political will, rather than a lack of expert scientific understanding, that has allowed the impending MDB crisis to build to its current level.[28]

8.39 IRN acknowledge that 'winding back' is more painful than placing restrictions in the first place, noting that communities have been allowed to establish and expand on the premise that economic growth is necessary and good, without being required to consider the economic 'externalities' that ultimately lead to high cost, socially and financially.[29]

8.40 The CSIRO's submission also expressed the view that existing state water plans in the MDB offer very little protection for the environment under a future situation of a long-term reduction in average surface water availability:

> Existing water sharing plans provide greater reliability to consumptive water users than to the environment. Although all jurisdictions have programs of environmental condition monitoring, these are not used in an adaptive management framework to improve water sharing arrangements in order to achieve more balanced outcomes. More flexible and adaptive

27 *Submission 40* to Part 1 of the inquiry, p. 7.

28 *Submission 9*, p. 1.

29 *Submission 9*, pp 1-2.

> processes for resource sharing and environmental management would be necessary for achieving environmental targets.[30]

8.41 Dr Bill Young of CSIRO highlighted that these comments are not about the level of protection for the environment *per se*. Rather, the comments are specifically about the impact on consumptive use verses the environment at times of reduced water availability under climate change.[31]

Committee view

8.42 The issue of a lack of harmonisation and integration in relation to natural resource management is probably a function of the historic fragmented management arrangements for the MDB, which were discussed in Chapter 2 of this report.

8.43 In considering the states and territories water management arrangements, the committee noted that discussions, at times, appeared to deteriorate to the level of a finger-pointing match as to who is doing the worst job. For this reason, the committee was pleased to receive material provided by the NFF outlining evidence that Australia's water management is leading the world.[32]

8.44 The committee is conscious that there are no easy solutions to water management. The committee believes that the on-going drought in the MDB and the very real impacts of climate change that are occurring in the Basin have done much to focus the attention of state and territory governments on this issue.

8.45 The committee reiterates its conclusions from Chapter 1, that what is required now is the cooperation between the Commonwealth and Basin States. The committee urges all parties to engage in the process of developing a Basin Plan and make the necessary adjustments to water sharing plans that are required under that process.

30 *Submission 2*, p. 6. This issue is discussed in greater detail in Chapter 6 of this report.

31 *Committee Hansard*, 16 March 2009, p. 9.

32 Answers to questions on notice, 13 March 2009 (received 31 March 2009).

Chapter 9

Conclusions

Introduction

9.1 This chapter reviews the committee's conclusions on the first part of the inquiry into water management in the Coorong and Lower Lakes and outlines the committee's conclusions for its inquiry into the long term sustainable management of the Murray-Darling Basin (MDB or Basin). It is appropriate to reiterate the committee's views on water management in the Coorong and Lower Lakes, given that evidence and submissions from the first part of the inquiry formed the basis of the second part of the inquiry.

Coorong and Lower Lakes

9.2 The committee restates those Coalition recommendations from the Water Management in the Coorong and Lower Lakes (including consideration of the Emergency Water (Murray-Darling Basin Rescue) Bill 2008) Report, which are relevant to this inquiry, and are extracted below. The committee refers to appropriate parts of the aforementioned report, for the committee's basis for making each of these recommendations.

9.3 That the Government immediately develop and release an economic and social impact statement and evidence of a strategy to guide water buybacks, infrastructure spending and other measures to be undertaken so as to provide certainty and transparency for all stakeholders in the system (Recommendation 8).

9.4 That the Government hasten both on-farm and off-farm infrastructure spending where it delivers water savings and increased environmental flows while enhancing both food security and the viability of regional communities (Recommendation 9).

9.5 That a full and unconditional referral of powers to the Australian Government over management of the Basin be undertaken by all relevant state and territory jurisdictions to deliver a river and basin system able to be governed nationally, consistently, transparently and equitably (Recommendation 10).

9.6 That the Federal and New South Wales Governments immediately assess new ways to secure the water supply for Broken Hill and, where environmentally appropriate, re-engineer the Menindee Lakes to reduce evaporative losses (Recommendation 11).

9.7 That the Australian and South Australian Governments commit to self sufficiency independent of the Murray for Adelaide as a key objective of their water

policy plans through increased efficiency in water usage and greater efforts in areas such as stormwater capture, desalination and water recycling (Recommendation 12).

9.8 That construction of the North-South Pipeline to extract water for Melbourne not proceed (Recommendation 13).

9.9 The committee also reiterates the following observation from its earlier report:

> The committee notes the unsatisfactory timeframes which currently exist for the transfer of water which arise out of existing barriers to trade and inefficient water registers.[1]

The long term sustainable management of the Murray-Darling Basin

9.10 The long-term sustainable management of the MDB presents significant challenges for the Australian Government and the governments of the Basin States and Territory.

9.11 The most critical challenge is the on-going scarcity of water in the MDB.

9.12 There are no quick fixes for bringing more water into the MDB. However, what is required is a policy designed to ensure that the water which is available in a manner that is consistent with the long-term viability and sustainability of the MDB.

9.13 The committee commends the work of governments, farmers, scientists, conservationists and the community in general to address this issue.

9.14 The committee supports the governance structure that the Australian Government has put in place for the MDB, through the Intergovernmental Agreement on Murray-Darling Basin Reform (IGA) and the *Water Act 2007*, which the role of the Commonwealth and the States and Territory in the management of the Basin.

9.15 The committee recognises that there is significant support in the community for a Commonwealth take-over of the MDB. The committee's view is that a Commonwealth take-over of the management of the MDB is not appropriate. The committee reiterates its view that what is required right now is cooperation between the Commonwealth and the Basin States and Territory to ensure the long-term sustainability of the MDB.

9.16 The committee also supports the development and the implementation of the Basin Plan in the timeframes set out in the IGA.

9.17 The committee appreciates that the timeframes in place for the development and implementation of the Basin Plan are seen by some in the community as taking

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1 Senate Standing Committee on Rural and Regional Affairs and Transport, Water management in the Coorong and Lower Lakes (including consideration of the Emergency Water (Murray-Darling Basin Rescue) Bill 2008, October 2008, p. 50.

too long to fix this urgent problem. However, the committee's view is that the quality of the Basin Plan should not be compromised through the truncation of the development and implementation process.

9.18 There are significant environmental assets in the Basin. The committee is aware that many of these are under significant ecological stress. The committee believes that the reforms put in place under the Australian Government's *Water for the Future* policy and the development of the Environmental Watering Plan as part of the Basin Plan appear to address many of the concerns raised in the course of this inquiry.

9.19 However, the committee is concerned that the rate of deterioration of some significant environmental assets in the MDB is occurring at a pace which means that they will have undergone irreparable damage by the time the Environmental Watering Plan is completed and implemented. For this reason, the committee has made recommendations as to processes that the Murray-Darling Basin Authority should put in place to ensure the protection of key environmental assets in the MBD prior to the implementation of the Basin Plan.

9.20 The committee is concerned about the long-term management of Ramsar wetlands in the MDB. The committee has therefore recommended improving the management of Ramsar wetlands through better coordination and cooperation between the government bodies responsible for these sites.

9.21 Climate change presents new challenges to the MDB, in addition to the current scarcity of water. The committee commends the CSIRO on the work of the *Sustainable Yields Report*. The committee notes that the Australian Government intends to use this information to inform policy development in the future.

9.22 The committee also recognises that climate change is one of only a number of risks to the water resources of the MDB. Unregulated harvesting of overland flows and water theft are two risks which the committee considered in the course of this inquiry.

9.23 The committee notes the work of the New South Wales and Queensland governments on the regulation of harvesting of overland water flows. The committee urges all governments to ensure that regulatory regimes for the management of overland flows are supported by adequate resources for compliance and monitoring.

Senator Fiona Nash
Committee Chair

Minority Report

Australian Labor Party

Introduction

1.1 After too many years of neglect for the problems facing the Murray Darling Basin, the Rudd Government is getting on with the job of reforming the Basin.

1.2 Last year the Prime Minister secured the agreement of Basin states to a new model of Basin Governance. In particular, this agreement provides for the development of a new Basin Plan and sustainable diversion limit on surface and ground water resources, where the final decision rests with the Commonwealth Minister alone.

1.3 These far-reaching reforms have also been accompanied by a commitment to invest in better and more efficient irrigation water management and use, Basin-wide, as well as the Rudd Government's commitment to purchase water entitlements from willing sellers to put back in the rivers and wetlands of the Basin.

1.4 The first Communiqué of the new Murray Darling Basin Ministerial Council includes the following:

> *'The key challenge of the Basin Plan is to put the future of the Basin, its communities, and its environmental values on a sustainable footing and that requires some tough decisions.*
>
> *The Ministers were united in the view that the process of adjusting to the new, lower sustainable diversion limits expected in the new Basin Plan should start now and that the combination of investments in irrigation efficiency and water purchase are key to this adjustment process.'*[1]

Governance arrangements

1.5 The model agreed by all Basin jurisdictions last year, as outlined in section 1 of the Committee report, is most appropriate as we move forward.

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1 Darling Basin Ministerial Council Meeting No 1, 12 June, Sydney, Communiqué. Available at: http://www.mdba.gov.au/system/files/MinCo-1-communique.pdf

1.6 The assertion that the new Murray Darling Basin Authority lacks independence is rejected. In his evidence, Authority CEO Mr Freeman told the Committee that, in its planning role, the Authority is independent of Basin States.[2]

1.7 Furthermore, Basin states agreed, in the national interest, that the final decision on the Basin Plan is to be made by the Commonwealth Minister alone. In doing so, Basin states agreed to cede their right to veto on such a decision that they held under the previous governance model.

1.8 The Basin Plan will be a comprehensive plan for the future management of all water resources in the MDB, both surface and groundwater. All parties to the IGA have affirmed the primacy of the Basin Plan in relation to the water resources of the Basin.

1.9 Government senators reject the majority Committee recommendation 1, 1.37, that the Commonwealth pursue a total takeover of Murray Darling Basin state and territory government water management functions, and of associated legislation, regulation, planning and institutional arrangements in the Basin. Government senators also reject the majority Committee recommendation that, should this takeover not be agreed by Basin states, the Commonwealth should pursue "other options" to bring such a takeover into effect.

Implementation of Basin Plan and water sharing arrangements

1.10 As is referred to above, it is highly significant that the final decision on the Basin Plan and sustainable diversion limit on the Basin's surface and ground water resources now rests with the Commonwealth Minister alone.

1.11 Once the Basin Plan has come into effect, all jurisdictions must comply with the new sustainable diversion limits for surface and ground water resources.

1.12 With this in mind, many of the concerns expressed in evidence to the Committee in relation to the new governance arrangements for the Basin are unfounded. In any event, Government senators believe that the new arrangements must be given the chance to work.

1.13 As part of its development, the Basin Plan will of course require an extensive process of consultation with Basin communities and stakeholder organisations. Socio-economic factors must also be taken into account.

2 *Committee Hansard*, 26 September 2008, p. 57.

1.14 Government senators note the majority Committee view that transitional arrangements for the Basin Plan, as detailed in the *Water Act 2007*, should be dispensed with to ensure that the Basin Plan is brought into effect "at the earliest possible opportunity". The view of Government senators continues to be that existing water sharing plans in the Basin should be allowed to run their course.

Long-term prospects for the management of Ramsar wetlands in the MDB

1.15 Certainly, past management arrangements, both at Commonwealth and State level, have impacted on the health and status of Ramsar wetlands across the Basin.

1.16 Historic overallocation, and the failure of the previous Federal and state governments to address the issue, is a key factor that has contributed to the problems now faced by many of the Basin's Ramsar listed wetlands.

1.17 In addition, the current unprecedented drought affecting most of the Basin has to be taken into account. In the southern Basin in particular, we have seen very low inflows over many years, including the last three years which represent the lowest ever 3 year period of inflows into the River Murray on record.

1.18 To the extent that climate change has been a factor in this current extended drought, climate change has also had an impact. Indeed, climate change presents a significant continuing threat to many of the Basin's Ramsar wetlands, as it does to numerous other wetlands and floodplains across the Basin.

1.19 It is most unreasonable to assert that the Rudd Government is somehow complicit in any continuation of past mismanagement in relation to Ramsar sites around the Basin.

1.20 On the contrary, the Australian Government is playing a very strong role in various Ramsar-related initiatives that, collectively, are helping states in the management of their Ramsar listed wetlands in accordance with the Ramsar Convention.

1.21 In particular, the Australian Government has committed $3.1 billion to purchase water from willing sellers in the Basin under a program now well underway. Much of this water will be available to support improved watering for Ramsar listed wetlands.

1.22 In relation to the Lower Lakes and Coorong Ramsar site, it should also be noted that this support includes a $200m commitment towards the development and implementation of a plan to address the long-term environmental threats to the Lower Lakes and Coorong Ramsar site, plus a further $10m towards expanding bioremediation efforts to help address the risks of acidification.

1.23 Government senators support recommendation 4.41.

Environmental water in the MDB

1.24 The deteriorating health of the rivers and wetlands of the Murray Darling Basin represents compelling evidence of the historic over-allocation of the Basin's water resources, and of the failure of past Governments to tackle the issue. This impact is amply demonstrated in the 'Sustainable Rivers Audit', completed in 2008 for the former Murray Darling Basin Commission.

1.25 Over-allocation also impacts on the reliability of irrigation water entitlements.

1.26 Additionally, in the southern Basin at least, it is now increasingly apparent that climate change is a factor in the availability and reliability of water for both consumptive and environmental needs,.

1.27 Hence there is a compelling need to reduce diversion limits across the Basin to sustainable levels, and to invest in water entitlements that can be used to benefit the environment.

1.28 Given the nature and scale of the adjustment that needs to be made, there is also a need to assist irrigation communities in making the transition between the current Basin 'cap' on water use, and future sustainable diversion limits that can be expected under the new Basin Plan.

1.29 Whilst Basin states are responsible for implementing the new Basin Plan and sustainable diversion limits once existing water plans expire, the Australian Government has decided that it would be irresponsible to leave this task entirely to state governments. That's why the Australian government has committed to invest in bridging the gap between current and future limits on water use in the Basin.

1.30 Government senators believe that best way to smooth the transition for irrigation regions in adjusting to new lower limits on water use is to invest in both;

- improved efficiency and productivity of irrigation water management and use, and
- purchase of water from willing sellers.

1.31 Whilst it takes longer to plan and build good irrigation infrastructure than it does to buy water, the Australian Government is committed to doing both.

1.32 In terms of timing, it would be irresponsible to delay investments in irrigation efficiency and purchasing water from willing sellers, as this will reduce the benefits

from these programs on the ground, and increase the scale and pace of adjustments required once the Basin Plan comes into effect.

1.33 Without these investments in both irrigation efficiency and water purchase, irrigators and irrigation-dependent communities in the Basin will face a far more difficult and far more abrupt cut in the future.

1.34 In this way food security, and the need for a vibrant and profitable irrigation sector in the Basin, are being appropriately protected through this unavoidable change process.

1.35 To date, the Australian Government has made substantial commitments in the future of irrigation communities in the Basin as an integral part of this transition process. These include:

- $3.7 billion committed to state priority projects in the Basin, which includes provision for both on-farm and off-farm programs, and provision for private irrigation infrastructure operators in both NSW and South Australia.

- Additional commitments towards the Wimmera Mallee Pipeline in Victoria, and to a major $400m project in the Menindee Lakes, both of which will realise significant water efficiency savings in the Basin.

- A further $300m has been committed to a new on-farm water efficiency program for farmers in the southern connected Basin and the Lachlan valley; and

- $200 million committed to a new program to assist local councils in the Basin to plan for a future with less water, and to invest in water saving initiatives.

1.36 The Australian Government continues to work closely with state governments to ensure that state government components of State Priority Project investments roll-out as soon as soon as possible.

1.37 Meanwhile, the Department of the Environment, Water, Heritage and the Arts and the National Water Commission is developing a rigorous framework to monitor, on a regional basis, the impacts of water reforms, including water purchases and water infrastructure investments, as well as other market driven adjustment.

1.38 Under the Australian Government's $3.1 billion to a program of accelerated purchase of water entitlements, it must be noted that:

- water entitlements are only purchased from willing sellers, and

- all water entitlements are transferred to the Commonwealth Environmental Water Holder (CEWH).

1.39 All water available under these new environmental water entitlements is to be used on the rivers and wetlands of the Basin. Management and use of the Commonwealth's environmental water is informed by the independent, expert Environmental Watering Scientific Advisory Committee chaired by Professor Barry Hart.

1.40 In addition, the Basin Plan, once completed, will include an environmental watering plan that will further inform decisions by the CEWH on the use of available environmental water.

1.41 Agreement has now been reached with Victoria that permits the Australian Government to purchase 460 Gl of water entitlement from 2008/9 to 2012/13. This agreement will also see a phased lifting of the 4% cap on trade.

1.42 In the meantime, the Government will commission the Productivity Commission to report on the relative merits of existing and alternative mechanisms to purchasing water.

1.43 In relation to water trade, Government senators note the recommendation in the majority Committee report that the Government should work towards achieving nationally uniform water trading arrangements. Consistent with the Government's pre-election policy, work on a national water trading system and register is already underway.

1.44 In summary, given the need for an early adjustment to new sustainable diversion limits under the Basin Plan, combined with the urgent need to deliver water to high value environmental assets throughout the Basin, there can be no justification for further delaying action on Basin reform. Very clearly, delays arising from past inaction have contributed to the problems we now face, and further delay would only exacerbate these problems.

Impacts of Climate Change and the likely future availability of water in the Murray Darling Basin

1.45 The growing body of evidence that lower rainfall and reduced runoff in the south-east of Australia is linked to global warming can no longer be denied. Nor can the harsh realities of this current extended drought. For example:

- In the majority of river valleys in the Southern Basin, inflows in recent years have been at, or around, the worst case projections for 2030 by CSIRO.

- The recent dry autumn means that we have now had 9 consecutive autumns with below average rainfall in the southern Basin.

- Across the Basin, water allocations for irrigated agriculture have remained well below average for some time.

1.46 In relation to the CSIRO Sustainable Yields report, it needs to be emphasised that CSIRO's projections for 2030 provide estimates of future water availability for consumptive uses under existing diversion rules. They do not take into account further adjustments that may be required to address over-allocation and river health, and to protect the reliability of irrigation water entitlements from erosion.

1.47 Mr Bill Young from CSIRO, and the MDB Authority CEO, Mr Rob Freeman, each gave evidence to the Committee that emphasised this point.[3]

1.48 The current and future impacts of interception activities (such as forestry and farm dams), combined with increased development of existing groundwater entitlements, and the interactions between surface and groundwater resources, also need to be taken into account in determining future sustainable diversion limits.

1.49 It should be noted that the MDBA, in developing the Basin Plan, may need to undertake further work to test the veracity of the CSIRO's Sustainable Yields work, including its projections as they apply to the potential impacts of climate change on groundwater resources, and on the implications of interactions between surface and groundwater resources (including, in some locations, a likely increase to the amount of leakage from rivers into aquifers).

1.50 In response to Rec. 11 in the Majority report, it should be noted that the Murray Darling Basin Authority, in developing the Basin Plan, is required to take account of socio economic factors. This is a requirement of the *Water Act 2007*.

1.51 Australian Government funding for a new and expanded role for the Bureau of Meteorology should also be noted. Under *Water for the Future*, the Bureau is investing in;

- improved data and information collection and reporting across all states and territories;

- improved real time measurement of water resource availability and use, nationwide; and

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3 See Dr Bill Young, *Committee Hansard*, 16 March 2009, p. 9 and Mr Rob Freeman, *Committee Hansard*, 13 March 2009, p. 53.

- development of water resource forecasting capability.

1.52 In addition, the Australian Government is also investing in improved hydrological modelling capability through the e-Water CRC/CSIRO 'WIRADA' initiative.

1.53 Together, these investments will provide Basin communities and water resource managers with greater confidence in water resource availability than is currently possible to provide.

Unregulated water interception activities

1.54 In developing the Basin Plan, the Murray Darling Basin Authority will be considering the significance of unregulated water interception activities across the Basin. In doing so, the Authority will naturally make use of the best available knowledge on interceptions, (including existing knowledge and work underway that has been commissioned by the National Water Commission), and it is expected that additional work will be commissioned by the Authority as required to fill any knowledge gaps.

1.55 In this context, Government senators believe that there is sufficient investment in this interceptions issue.

1.56 It is also important to note that the Australian Government is actively investing in improved management of overland flow harvesting. Specifically, the Australian Government has committed $50 million to NSW, as part of the NSW State Priority Project, towards (i) improved monitoring and management of floodplain harvesting, and (ii) improved protection of floodplain ecosystems.

Conclusion

1.57 Whilst some in the community would argue that the pace of the Australian Government's Basin Reforms is too slow, others – including some Opposition senators – argue that the pace is too fast.

1.58 Government senators believe that the Australian Government has got the balance right.

1.59 The Australian Government recognises the urgency of the current water crisis in the Basin, and does not believe that further delay on action such as investment in irrigation efficiency and infrastructure, and purchase of water from willing sellers, is warranted.

1.60 Given the scale of the adjustment that can be expected under the new Basin Plan and sustainable diversion limits, the process of bridging the gap between current

and future diversion limits, through timely irrigation efficiency and water purchase investments, is essential to smoothing this transition process.

1.61 And given that very little happened in the years prior to the Rudd Government to restore the balance between consumptive and environmental water needs and to address the threat of climate change, to delay action any further would be irresponsible.

1.62 However, the process of developing a new Basin Plan cannot, and must not, be rushed. An ill-informed plan, developed in the absence of best available science and thorough consultation with Basin communities and stakeholders, would not be an acceptable outcome.

Senator Glenn Sterle

Australian Labor Party

Senator Kerry O'Brien

Australian Labor Party

Minority Report

Australian Greens

1.1 In our Minority Report on the Water Amendment Bill 2008 the Australian Greens outlined our concerns with the approach both the Commonwealth and State Governments are taking to managing the Murray Darling Basin System, we made a series of recommendations and we proposed a way forward – *The MDB 2010-2050 Plan.*

1.2 The Basin is facing a crisis of a scale and magnitude that outstrips any agricultural or environmental challenge of the past. The scale of the crisis is becoming greater every year. The magnitude of our response must reflect this scale if we are to avoid serious social consequences for basin communities, a significant threat to our food security, and the irretrievable loss of precious habitats. While there has been some progress in negotiations with Victoria and some *ad hoc* community planning is occurring, we remain deeply concerned about the future of the system and believe that further reform is necessary.

1.3 While we agree with many of the recommendations of the majority report we can not support putting off purchases of water when they become available. Instead we urge the Government to put more resources into community planning and not rely on the *ad hoc* patchwork process that is occurring in the Basin at present.

1.4 Food production and security remain vitally important issues, and we need to take a strategic approach to ensuring that we keep our most productive lands in agriculture as much as possible. At the same time we must face the reality of the fact that the system has been over-allocated and we will need to push on with improving the efficiency of our irrigation infrastructure and returning more water to the system to ensure our levels of water extraction are sustainable for the long term.

1.5 The Australian Greens strongly agree that the issues of the monitoring surface water and groundwater use, and of the unregulated interception of overflow flows need urgently addressing.

1.6 The Australian Greens recommend:

That the Basin Plan be developed and implementation commenced by 2011.

That existing State water sharing plans should be required to come into line with the Basin Plan within 6 months of its release, and not delayed until 2014 (or 2019 in Victoria).

That community planning is better co-ordinated, facilitated and resourced to enable communities to produce plans which integrate infrastructure investment, water sales and structural adjustment.

That integrated community plans are prioritised in assessing applications for funding under *Water for Our Future.*

That the Water Act should be amended to:

- **Exclude consideration of new extractive uses outside of the basin in the provisions of the Basin Plan**
- **Ensure the Objects of the Act and the Murray Darling Basin Authority have an explicit focus on managing environmental health and resilience**
- **Achieve integration with *Environmental Protection and Biodiversity Conservation Act* and compliance with Ramsar and other international environmental treaties**
- **Ensure that water entitlements are defined as shares of available water, and take into account the variability of the northern basin**

Senator Rachel Siewert

Australian Greens

Additional Comments

Senator Nick Xenophon

1.1 At the outset, I support the comments made by the Australian Greens in their Minority Report.

1.2 The crisis surrounding the availability of water along the Murray-Darling Basin is the most urgent priority facing this nation. It reflects not only environmental failures but also a gross mismanagement over a sustained period by state governments who can no longer be entrusted with acting in the national interest. The Government's approach to the management of the Murray-Darling Basin fails to reflect the urgency required.

1.3 Whilst I support the comments made in the Majority Report that the Commonwealth work towards a full and unconditional referral of powers relevant to the management of the Murray-Darling Basin, I believe that the urgency of the crisis demands that the Commonwealth introduce legislation to enable a federal takeover of the Murray-Darling Basin system.

1.4 In relation to the Lower Lakes, there should be a priority and emphasis on environmental solutions, particularly bioremediation, to manage the crisis in that part of the Basin if sufficient fresh water cannot be secured. The option of flooding the Lower Lakes with salt water poses significant environmental risks and would cause irreversible damage to the ecosystems of the Lower Lakes.

1.5 In relation to the Coorong, there ought to be urgent priority given to ensuring inflows of seawater to reduce the hypersalinity in the Coorong and consideration of water being piped from the upper south-east drainage scheme.

Senator Nick Xenophon

Independent Senator for South Australia

Appendix 1

List of Submissions

Water Management in the Coorong and Lower Lakes

1. Department of the Environment, Water, Heritage and the Arts

1A. Department of the Environment, Water, Heritage and the Arts

2. WMAwater

3. Fair Water Use (Australia)

4. Mr John (Jack) King

5. Ms Cherril Jones

6. Mr Allan Jones

7. Mike and Mary Galea

8. Mr Trevor Giles

9. Ms Janie Wilson

10. NSW Irrigators' Council

11. Mr Bob Hamilton-Bruce

12. MainStream Enviromental Consulting Pty Ltd and RiverSmart Australia

13. Southern Alexandrina Business Association

14. Mr Steve Posselt

15. Mr Henry Jones

16. Boating Industry Association of South Australia Inc.

17. Humane Society International

18. Ms Vesper Tjukonai

19. Mr Mike South

20. Mr Peter Murray

21. Alexandrina Council

22. Goulburn Valley Environment Group

23. Ms Paula Horbelt

24. Mr Mitch Williams MP

25. Mr George Gordon

26. GetUp! Action for Australia

27. River Lakes and Coorong Action Group Inc.

28. Mr George Bennett

29. Bruce and Annette Allnutt

30. Mr John Eckermann

31. Australian Management Consolidated Pty Ltd

32. Ms Liz Yelland

33. Mr Matthew Dowling

34. Ms Kathryn Rothe

35. CSIRO

36. Mannum Progress Association

37. Mr Ali Baker

38. Mr Peter Marsh

39. Ms Lesley Fischer

40. Kerri Muller NRM

41. Ms Karyn Bradford

42. Plug The Pipe

43. Ms Maria Riedl

44. Acheron Valley Watch Inc

45. Environmental Defenders Office (SA) Inc.

46. Professor Diane Bell

47. Name withheld

48. Waterfind Environment Fund SA

49. Ms Mary Chandler

50. Cotton Australia

51. Mr Peter Smith OAM

52. Faculty of Sciences, Earth and Environmental Sciences, University of Adelaide

53. Ms Mary Chandler

54. Queensland Farmers' Federation

55. Mr Barry McClure

56. Ms Anne Hartnett

57. Coorong, Lakes and Murray Waterkeeper

58. Ms Joan Gibbs, School of Natural and Built Environments, University of South Australia

59. Mr Nigel Croser

60. Queensland Department of Natural Resources and Water

61. Murray-Darling Basin Water Crisis Management Council

62. Mr Keith Loeser

63. NSW Farmers' Association

64. Mr Tony Windsor MP

65. NSW Department of Water and Energy

66. The Coorong District Council

67. Joe, Lorraine & Michael Leese

68. National Farmers' Federation

69. Inland Rivers Network

70. Mr John (Jack) King

71. Wentworth Group of Concerned Scientists NSW

72. Murray Irrigation Limited

73. South Australian Government

74. Professor Jerry Vanclay

75. Dr. R.W Vervoort

76. Murray-Darling Basin Commission

77. Murray-Darling Association Inc.

78. Chris and Cheryl Bagley

79. Professor Allan Barton

80. Biodynamic Agriculture Australia

81. Australian Conservation Foundation

82. Mr John Caldecott

83. Mr R Ian Morse

84. Mr Robert S. Burke.

The long term sustainable management of the Murray-Darling Basin

1. Ms Sarah Moles

2. CSIRO

3. Ms Ellen Hogan

4. Murray Darling Basin Commission

5. River Lakes and Coorong Action Group Inc.

6. Dr Willem Vervoort and Mr Floris van Ogrop, Faculty of Agriculture, Food and Natural Resources, University of Sydney

7. Environment and Property Protection Association

8. Ms Liz Yelland

9. Inland Rivers Network Inc.

10. National Parks Association of NSW

11. The Australian Network of Environmental Defender's Offices

12. Queensland Department of Natural Resources and Water

13. National Farmers' Federation

14. Conservation Council of South Australia

15. Australian Human Rights Commission

16. Mr David Tipping

17. Mr Peter Brohier

17A. Mr Peter Brohier

18. Mr Ronald Wilde

19. Murray-Darling Basin Water Crisis Management Council.

Appendix 2

Witnesses who appeared before the Committee at the public hearings

Water Management in the Coorong and Lower Lakes

Tuesday, 9 September 2008, Parliament House, Canberra

Department of the Environment, Water, Heritage and the Arts

Mr Tony Slatyer, First Assistant Secretary, Water Reform Division

Ms Mary Harwood, First Assistant Secretary, Water Efficiency Division

Mr Mark Flanigan, Assistant Secretary, Strategic Approvals and Legislation Branch, Approvals and Wildlife Division

CSIRO

Dr Tom Hatton, Director, Water for a Healthy Country Flagship

Dr Bill Young, Theme Leader, Healthy Water Ecosystems

New South Wales Irrigators Council

Mr Andrew Gregson, Chief Executive Officer

Queensland Department of Natural Resources and Water

Mr Scott Spencer, Director-General

Mr Greg Claydon, Executive Director, Strategic Water Initiatives

Ms Debbie Best, Deputy Director, General Water and Catchment Services

Community Advisory Committee of the Murray-Darling Basin Ministerial Council

Mr Lee O'Brien, Chairman

National Farmers Federation Water Taskforce

Mr Laurie Arthur, Chair

Ms Deb Kerr, Natural Resource Management Manager

Dr Donald Blackmore, Private capacity

Dr William Phillips, Director MainStream Environmental Consulting Pty Ltd; RiverSmart Australia. Private capacity

Wednesday, 10 September 2008, Stamford Grand Hotel, Adelaide

Conservation Council of South Australia

Ms Julie Pettett, Chief Executive

Mr Jamnes Danenberg, Campaigner

Dr Kerri Muller, Private capacity

Professor Michael Young, Research Chair, Water Economics and Management, University of Adelaide. Private Capacity

Professor Justin Brookes, Research Scientist and Leader CLLAMM Ecology. University of Adelaide. Private capacity

Central Irrigation Trust

Mr Gavin McMahon, Operations Manager

Murray-Darling Association Inc.

Mr Raymond Najar, General Manager

Associate Professor John Williams, Associate Dean, Law School. Private Capacity

Lower Lakes and Coorong Infrastructure Committee

Mr Neil Shillabeer, Chair

Mrs Lesley Fisher, Private capacity

CSIRO

Professor Rob Fitzpatrick, Chief Research Scientist and Professor Flinders University

Dr Paul Shand, Principal Research Scientist

River, Lakes and Coorong Action Group Inc.

Mr Paul Davis, Lakes and Murray Waterkeeper and Committee Member

South Australian Dairyfarmers Association

Mr David Basham, President

South Australian Farmers Federation

Mr Kent Martin, Board Member

Dr Nigel Long, Natural Resources Manager

Alexandrina Council

Mayor Kym McHugh

Coorong District Council

Mayor Roger Strother

Mr Henry Jones, Private capacity

Mannum Progress Association

Ms Helen Griffiths, Member

Thursday, 18 September 2008, Parliament House, Canberra

Department of the Environment, Water, Heritage and the Arts

Mr Tony Slatyer, First Assistant Secretary, Water Reform Division

Ms Mary Harwood, First Assistant Secretary, Water Efficiency Division

Mr Harry Abrahams, Acting Assistant Secretary, Water Reform Division

Mr Mark Flanigan, Assistant Secretary, Strategic Approvals and Legislation Branch, Approvals and Wildlife Division

Inland Rivers Network

Ms Amy Hankinson, Coordinator

New South Wales Department of Water and Energy

Mr David Harriss, Deputy Director General, Water Management

Friday, 19 September 2008, Parliament House, Canberra

Professor Richard Kingsford, Private capacity

Murray Irrigation Ltd

Mr Stewart Ellis, Chairman, Board of Directors

Mrs Claire Gibson, Communications Officer

Wentworth Group of Concerned Scientists

Mr Peter Cosier, Director

Professor Bruce Thom, Member

Dr John Williams, Member

Professor Michael Young, Member

Mr Richard Harvey, Member

Mr Ian Kowalick, Private capacity

Ms Ilona Millar, Private capacity

South Australian Government

The Hon. Karlene Maywald, Minister for the River Murray and Minister for Water Security

South Australian Department of Water, Land and Biodiversity Conservation

Mr Scott Ashby, Chief Executive

Mr Andrew Beal, Chair, Water Security Technical Working Group

Coorong Council

Mayor Roger Strother

CSIRO Land and Water

Dr Ian Webster

Dr Matthew Hipsey, Research Fellow, Centre for Water Research, University of Western Australia. Private capacity

Mr David Wainwright, WBM Consulting. Private capacity

Bondi Group and National Irrigation Corporation Water Entitlements Register

Ms Jenni Mattila, Coordinator

Department of the Environment, Water, Heritage and the Arts

Mr Tony Slatyer, First Assistant Secretary, Water Reform Division

Ms Mary Harwood, First Assistant Secretary, Water Efficiency Division

Mr Harry Abrahams, Acting Assistant Secretary, Water Reform Division

Mr Mark Flanigan, Assessment of Wildlife Division

Friday, 26 September 2008, Parliament House, Canberra

Bureau of Meteorology

Mr Neil Plummer, Acting Superintendent, National Climate Centre

Dr David Jones, Supervisor, Climate Analysis Section, National Climate Centre

New South Wales Farmers Association

Ms Louise Burge, Chairman, Conservation and Resource Management Committee

Australian Conservation Foundation

Dr Arlene Buchan, Coordinator, Healthy Rivers Program

Murrumbidgee Irrigation Ltd

Mr Richard (Dick) Thompson, Chairman

Plug the Pipe

Mr Robert Richardson, Organiser

Mr Kenneth Pattison

Mr Christopher Harrison

Australian Floodplain Association

Mrs Deborah Kaluder, Committee Member

Murray-Darling Basin Commission

Dr Wendy Craik, Chief Executive

Mrs Jody Swirepik, Director, Living Murray

Mr Alan (David) Dreverman, General Manager, River Murray Water

Murray-Darling Basin Authority

Mr Robert Freeman, Acting Chair and Chief Executive

Victorian Farmers Federation

Mr Richard Anderson, Chair, Water Council

Mr Graeme Ford, Executive Manager, Policy

Snowy Hydro Ltd

Mr David Harris, Executive Officer, Regulatory Strategy, Legal and Water

Mr Andrew Nolan, Manager, Water

The long term sustainable management of the Murray-Darling Basin

Tuesday 10 March 2009, Parliament House, Canberra

Murray-Darling Basin Water Crisis Management Council

Mr Patrick Byrne, Committee member

Mr Ken Trewin, Committee member

Namoi Catchment Management Authority

Mr Bruce Brown, General Manager

Namoi Water

Mr John Clements, Executive Officer

Australian Conservation Foundation

Dr Arlene Buchan, Healthy Rivers Campaign Coordinator

Australian Floodplain Association

Mr Terence Korn, Publicity Officer

Wentworth Group of Concerned Scientists

Mr Peter Cosier, Member

Dr John Williams, Member

Friday 13 March 2009, Parliament House, Canberra

National Farmers' Federation

Mrs Deborah Kerr, Natural Resource Manager

Department of the Environment, Water, Heritage and the Arts

Ms Mary Harwood, First Assistant Secretary, Water Efficiency Division

Mr Ian Robinson, First Assistant Secretary, Water Governance Division

Mr Tony Slatyer, First Assistant Secretary, Water Reform Division

Professor Michael Young, Executive Director, Environment Institute, University of Adelaide. Private capacity

Australian Network of Environmental Defender's Office

Ms Ruth Beach, Solicitor

Inland Rivers Network

Ms Beverley Smiles, Executive Committee

Murray-Darling Basin Authority

Mr Rob Freeman, Chief Executive

Dr Tony McLeod, General Manager, Water Planning

Monday 16 March 2009, Parliament House, Canberra

CSIRO

Dr Tom Hatton, Director, Water for Healthy Country Flagship

Dr Bill Young, Principal Research Scientist, CSIRO Land & Water

Professor Richard Kingsford (private capacity)

Torrumbarry Reconfiguration & Asset Modernisation Strategy (TRAMS)

Mr Geoff Williams, Chair, TRAMS Working Group

Bourke Shire Council

Councillor Andrew Lewis, Mayor

Mr Geoff Wise, General Manager

Mr Trevor Randall (private capacity).

Appendix 3
Documents tabled at public hearings

The long term sustainable management of the Murray-Darling Basin

Tuesday 10 March 2009, Parliament House, Canberra

Lodged By	**Title/Description**
Murray-Darling Basin Water Crisis Management Council	*Federal Murray-Darling Basin water plan could wipe $28 billion off GDP*, Brochure, 8 pages. *Appendix 1: Analysis of the 2007 federal water plan*, 5 pages.
Murray-Darling Basin Water Crisis Management Council	Murray-Darling Basin Water Crisis Management Council, Recommendations to Committee, 1 page.
Murray-Darling Basin Water Crisis Management Council	*Naïve Trade balance, Food and Beverage, Australia 1998 to 2009, Monthly*, Graph, 1 page.
Murray-Darling Basin Water Crisis Management Council	*Food and Beverage Imports*, Jan 1988 to Jan 2009, Graph. *Food and Beverage Exports*, Jan 1988 to Jan 2009, Graph. 1 page.
Murray-Darling Basin Water Crisis Management Council	Copy of 'The Customs House Agreement', Agricultural Production Destination Committee, Queensland Nationals, dated 9 May 2009, 6 pages.
Murray-Darling Basin Water Crisis Management Council	*National Background*, Murray-Darling Basin Water Crisis Management Council, 3 pages.
Murray-Darling Basin Water Crisis Management Council	Copy of newspaper article, Herald Sun, *Fill'er up, say voters*, October 25 2006, 5 pages.
Namoi Water	*Briefing Note to Senator the Hon. Penny Wong, Minister for Climate Change and Water, Northern Basin Tour, Moree, Monday 2 March 2009*, Naomi Water, 3 pages.
Australian Conservation	Australian Conservation Foundation, *Land and*

Foundation	*water reform in the Murray-Darling Basin*, 16 October 2008, 9 pages.
Wentworth Group of Concerned Scientists	Wentworth Group of Concerned Scientists, *Opening Statement*, 10 March 2009, 4 pages.
Wentworth Group of Concerned Scientists	*Murrumbidgee River: inflow, outflow and water use for irrigation*, Graph. *Murray River Flow at Mouth*, Graph sourced from Professor Shahbaz Khan, CSIRO Land and Water/ Charles Sturt University. 2 pages.

Friday 13 March 2009, Parliament House, Canberra

Lodged By	**Title/Description**
Professor Mike Young	M. Young and J. McColl, *Double Trouble: the importance of accounting for and defining water entitlements consistent with hydrological realities*, The Australian Journal of Agricultural and Resource Economics, vol. 53, pp 19-35.
Professor Mike Young	M. Young and J. McColl, *Grounding connectivity: Do rivers have aquifier rights?* Droplet No. 13, 1 page.
Professor Mike Young	M. Young and J. McColl, *Shepherding water: unregulated water allocation and management*, Droplet No. 15, 3 pages.
Professor Mike Young	*Downsize and reconfigure?* Schematic diagram, 1 page.
Inland Rivers Network	Inland Rivers Network, *Current Opportunities in NSW for environmental water*, 2 pages.
Inland Rivers Network	Inland Rivers Network, *Recommendations for improving the ecological resilience of the Darling River system*, 2 pages.
Inland Rivers Network	Map of Castlereagh, Macquarie and Bogan Valleys, 1 page.

Inland Rivers Network	Inland Rivers Network, *The Darling: a valuable friend*, Brochure, 16 pages.
Inland Rivers Network	Inland Rivers Network, *Freshwater Protected Areas: new and existing tools for conserving freshwater ecosystems in Australia*, National Conference 2004, Statement, Recommendations and Supporting Papers, 100 pages.
Senator Mary Jo Fisher	Response to Senate order that the Minister for Climate Change and Water, by 10 March 2009, lay certain documents on the table in relation to section 86A of the *Water Act 2007*, 1 page.

Monday 16 March 2009, Parliament House, Canberra

Lodged By	**Title/Description**
CSIRO	CSIRO, *Water Availability in the Murray-Darling Basin: a report from CSIRO to the Australian Government*, October 2008, 67 pages.
CSIRO	CSIRO, *Water Availability in the Murray-Darling Basin: a summary of a report from CSIRO to the Australian Government*, October 2008, 11 pages.
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Water Management in the Coorong and Lower Lakes

Tuesday 9 September 2008, Parliament House, Canberra

1. **Queensland Department of Natural Resources and Water**: Answers to Questions on Notice.

Wednesday 10 September 2008, Stamford Grand Hotel, Adelaide

2. **Professor Mike Young**: Answers to Questions on Notice, received 1 October 2008.

Thursday 18 September 2008, Parliament House, Canberra

3. **New South Wales Department of Water and Energy**: Answers to Questions on Notice, received 9 October 2008.

Friday 19 September 2008, Parliament House, Canberra

4. **Wentworth Group of Concerned Scientists**: Answers to Questions on Notice.

5. **Dr Matt Hipsey**: Answers to Questions on Notice, received 19 September 2008.

6. **Department of the Environment, Water, Heritage and the Arts**: Answers to Questions on Notice and updated submission information, received 2 October 2008.

Friday 26 September 2008, Parliament House, Canberra

7. **Murray-Darling Basin Commission**: Answers to Questions on Notice.

The long term sustainable management of the Murray-Darling Basin

Tuesday 10 March 2009, Parliament House, Canberra hearing

8. **Australian Conservation Foundation:** Answers to Questions on Notice, received 23 March 2009.

9. **Australian Floodplain Association:** Answers to Questions on Notice, received 16 March 2009.

Friday 13 March 2009, Parliament House, Canberra hearing

10. **Department of Environment, Water Heritage and the Arts:** Answers to Questions on Notice, received 9 April 2009.

11. **Murray-Darling Basin Authority:** Answers to Questions on Notice, received 28 April 2009.

12. **National Farmers Federation Water Task Force:** Answers to Questions on Notice, received 1 April 2009.

13. **Professor Mike Young:** Answers to Questions on Notice, received 18 March 2009.

Monday 16 March 2009, Parliament House, Canberra hearing

14. **CSIRO:** Answers to Questions on Notice, received 1 April 2009.