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# 1 Introduction

## **Key points**

- The Productivity Commission has been asked to report on market mechanisms that the Australian Government could use to diversify its water purchasing program.
- Under the broad framework of its Water for the Future Initiative, the Australian Government has been recovering water for the environment through:
  - the \$3.1 billion Restoring the Balance in the Murray-Darling Basin (RTB) program. The RTB program commenced in 2007-08 and is primarily purchasing water entitlements from willing sellers through a tender process. As of 31 January 2010, the Australian Government had purchased 797 GL of entitlements of varying reliabilities at a cost of about \$1.3 billion
  - the \$5.8 billion Sustainable Rural Water Use and Infrastructure (SRWUI) program. The SRWUI is a ten-year program to subsidise investment in irrigation infrastructure intended to create water efficiency savings to be shared between irrigators and the environment.
- In addition to the RTB and SRWUI programs, the Murray-Darling Basin Authority is developing a Basin Plan that will administratively recover water for the environment by setting Sustainable Diversion Limits (SDLs) on water use in the Murray-Darling Basin (the Basin). It will also include an environmental watering plan that will set environmental objectives and targets for ecosystems across the Basin
- The objectives of the RTB and SRWUI programs are similar in that they both aim to ease the transition to lower SDLs likely under the Basin Plan, and obtain water entitlements for environmental needs. The SRWUI program has the additional objectives of securing a long-term sustainable future for irrigation communities and helping to provide for food security.
- The Commission considered the effectiveness and efficiency of market mechanisms in the context of all possible methods for recovering water, including administrative methods, and subsidising investment in irrigation infrastructure.
- The Commission also considered the purchase of water products other than water entitlements, including seasonal allocations, options contracts and leases, but recognises that the approach taken should depend on the objectives being pursued.

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Notwithstanding recent heavy rains in parts of the Murray-Darling Basin, water shortages are placing considerable stress on the environment, agriculture, and regional and rural communities. To help alleviate the pressure on the environment, Australian governments have been collectively and individually acquiring water through various means. For its part, the Australian Government has commenced buying entitlements from irrigators on a large scale, through a program called Restoring the Balance in the Murray-Darling Basin (RTB). It is also investing in water saving infrastructure through a program called Sustainable Rural Water Use and Infrastructure (SRWUI), and it is developing a Basin Plan to recalibrate water use in the Basin.

The Australian Government has asked the Commission to undertake a study into alternative market mechanisms that it could use to diversify its RTB water buyback program.

## **1.1 What the Commission has been asked to do**

The Productivity Commission has been asked to report on market mechanisms for recovering water in the Basin. This includes identifying appropriate, effective and efficient mechanisms that could be used to diversify the range of options to purchase water entitlements under the RTB program. It is also required to review mechanisms used nationally and internationally to purchase water (and to this end has reviewed programs that have been operating in Australia and the United States in appendixes B and C respectively), and identify impediments to the use of water purchase mechanisms and how these could be overcome.

In undertaking the study, the Commission has been asked to consider a number of issues including:

- the proposed pace of environmental water recovery and the depth of the water markets in the Basin
- transaction and compliance costs for participants in the buyback and the Government
- the impact on the water market, particularly where the Government may be the dominant buyer
- the implications of a developing water market and limited market price information
- the potential to use existing or developing water exchanges, auction houses or on-line water trading platforms

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- the potential methods to maximise synergies between water purchase and the SRWUI program
  - the capacity to use different mechanisms to purchase a mix of high, general and low security entitlements to meet identified environmental needs
  - the requirements of the Commonwealth Procurement Guidelines and the *Financial Management and Accountability Act 1997* (Cwlth).

The full terms of reference are in the front of this report.

## 1.2 The Commission's approach

The Government has asked the Commission to consider the effectiveness and efficiency of market mechanisms to purchase water entitlements, which requires clarity of the program's objectives and an understanding of the reasons why it was designed as it was. The Commission is also required under its Act to consider the community-wide impacts of the issues it reviews. As such, the Commission has felt it necessary to take a broad approach to the scope of this study by considering:

- market mechanisms for recovering water for the environment in the broader context of all possible methods for recovering water, including administrative methods and subsidising investment in water saving infrastructure, such as through the SRWUI program
- the case for using not only various market mechanisms (such as tenders) but also for purchasing water products other than water entitlements, including seasonal allocations, options contracts and leases.

The interaction between different approaches to recovering water can have considerable implications for efficiency and effectiveness. Obtaining water through purchases or by investing in water saving infrastructure needs to be seen in the context of the Basin Plan — which will ultimately apportion water between consumptive and environmental uses — and the other objectives the Government has in mind.

The Commission's approach to interpreting the meaning of effectiveness and efficiency is important to the scope of the study.

*Effectiveness* refers to how well the outputs of the Australian Government's purchasing program achieve the stated or implied objectives. A first step in identifying effective mechanisms is, therefore, to clarify objectives. This is important in matching policy instruments to objectives to achieve the best possible result. Where there are multiple objectives it may be more effective to have multiple

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policy instruments. Effectiveness is often measured in terms of cost, that is as cost effectiveness. This can involve comparisons of the cost of alternative methods of achieving the same or similar outcomes. Alternatively, it could involve comparisons of the effect produced by alternative methods that have the same or similar cost. Effectiveness is an important criterion in this study, as there are many environmental needs for water and different options for delivering that water.

*Efficiency* refers to maximising the net benefit to the community of the purchasing program. It involves having regard to all of the costs and benefits, including the environmental and social impacts. In this project, the most efficient outcome would occur where the net benefits of applying water to competing end uses was maximised, having regard to any adjustment costs that might be involved. Market-based mechanisms for recovering water have the potential to improve efficiency by acquiring water from willing sellers and applying it to a more valuable end use from the community's perspective. The interaction between efficiency and effectiveness can be important. For example, water may be recovered efficiently through a market mechanism, but this may not be effective if the water cannot easily be delivered to a valued environmental asset.

The Commission's analytical framework is addressed in more detail in chapter 5. The objectives of the main methods for recovering water are discussed below.

### **1.3 Background to the study**

The availability and use of water have always been topical policy issues, none more so than where the Basin is concerned. In the initial stages of the development of the Basin, little specific regard was given to the environment; the focus was more on the use of rivers for navigation, and as a source of water for irrigation and urban development. While some recognition was given to the need to maintain base flows, environmental needs tended to be otherwise met only when dams spilled and water was abundant.

The shortfall to the environment has been explicitly recognised since the late 1980s. But it has been compounded over the last decade by a prolonged drought that has decreased inflows into the rivers and streams, meaning much less water is available for any purpose. And increasingly, it seems that climate change induced reductions are likely to make droughts more prevalent in the future. Market failures in the provision of environmental goods, and the competing priorities of the Basin jurisdictions, add to the challenges of managing the Basin's water resources.

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Ideally, water would be allocated among competing uses and jurisdictions to maximise the returns to the whole community. Water used in agriculture or for urban purposes has benefits for the community, but so does the restoration and maintenance of the environment. The development of markets for water is helping improve the efficient allocation of water among irrigators and between agriculture and urban users. But without government intervention, water allocations to the environment are likely to be severely compromised. In both of these respects — the development of markets, and the more explicit recognition of the environment’s needs — water policy has developed substantially over the last 20 years (box 1.1).

**Box 1.1      Development of Murray-Darling Basin water policy**

While agreements about sharing the Basin’s water resources date back to the 1915 River Murray Waters Agreement (between the Commonwealth, NSW, Victorian and SA Governments), it was not until the 1980s that environmental issues started to be addressed at a Basin-wide level. The emergence of irrigation-induced environmental problems that were beyond the control of any one jurisdiction — including impacts on water quality and land salinisation — emphasised the need for an inter-jurisdictional approach. This led to the adoption of the Murray-Darling Basin Agreement in 1987 and the eventual participation of all Basin jurisdictions.

This Agreement aimed to promote and co-ordinate planning and management of the water, land and other environmental resources of the Basin, and established new institutions including the Murray-Darling Basin Ministerial Council, and the Murray-Darling Basin Commission (MDBC). However, while it set out procedures to be followed for natural resource management and water distribution, among other things, its implementation relied on the cooperation of the jurisdictions (MDBC 2009).

The next step in water reform occurred in 1994, when the Council of Australian Governments (COAG) agreed to the Water Reform Framework (subsequently incorporated into National Competition Policy). Under this framework, governments committed to a number of reforms, including more explicitly allocating water specifically for use by the environment, and a range of market-based measures (COAG 1994).

In 2003, COAG agreed that there was a need to extend its 1994 water reform agenda, and in June 2004 the Commonwealth, NSW, Victoria, Queensland, SA, the ACT and the NT Governments signed the Intergovernmental Agreement on a National Water Initiative (NWI) (the Tasmanian Government joined the Agreement in June 2005 and the WA Government joined in April 2006).

The overall objective of the NWI was to achieve a nationally compatible market, regulatory and planning based system of managing surface and groundwater resources for rural and urban use that optimised economic, social and environmental outcomes.

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Box 1.1 (continued)

NWI reforms aim to:

- achieve nationally compatible characteristics for secure water access entitlements
- implement statutory-based water planning
- introduce statutory provision for environmental outcomes and water to meet those outcomes
- improve environmental management practices
- return all currently over-allocated or overused systems to environmentally sustainable levels of extraction
- remove barriers to trade in water
- assign the risk arising from future changes in the availability of water
- implement water accounting to meet the information needs of water systems including for planning, monitoring, trading and environmental and on-farm management
- improve water use efficiency and innovation in urban and rural areas
- recognise the connectivity between surface and groundwater resources.

It was not until a referral of powers by the states and the passage of the *Water Act 2007* (Cwlth) that powers to manage the water resources of the Basin were consolidated under Australian Government control. This created the necessary institutional structure to provide for the statutorily enforceable Basin Plan now being developed by the Murray-Darling Basin Authority (MDBA). The Act also:

- created a semi-independent Commonwealth Environmental Water Holder
- established the MDBA (which absorbed the MDBC)
- charged the Bureau of Meteorology with the task of publishing the National Water Accounts and periodic reports on water resource use and availability
- extended the remit of the Australian Competition and Consumer Commission (ACCC) to include rural water market rules and water charge rules.

In 2008, all Basin jurisdictions (the Commonwealth, Queensland, NSW, Victorian, SA and the ACT Governments) signed the Agreement on Murray-Darling Basin Reform 2008 (the Basin Agreement), which, among other things:

- affirmed the new governance arrangements for water planning in the Basin
- allocated the initial round of Commonwealth funds for infrastructure-based water recovery projects under the SRWUI program and the purchase of water entitlements under the RTB program
- established due diligence criteria for the Australian Government's investment in SRWUI irrigation infrastructure projects
- expanded the ACCC powers over water market and charge rules.

The reforms and water recovery programs enacted under the Act, and through the Basin Agreement, combine to form the main rural water components of the Australian Government's Water for the Future Initiative.

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## Recovering water for the environment

Recovering water for the environment can be achieved in three main ways:

- by administratively changing the rules by which water is allocated among competing uses through state water sharing plans (chapter 6). These are called rules-based or administrative methods. Now that the Australian Government has the necessary powers to implement a Basin Plan, the next generation of water sharing plans will need to be certified by the Commonwealth Minister for Water as consistent with the Basin Plan, as they expire and are replaced (box 1.2)
- by investing in water-saving infrastructure (chapter 6). Such projects might include irrigation delivery infrastructure, and on-farm infrastructure
- by purchasing water through market mechanisms, including tenders and on-market purchases (chapters 7 and 8).

### Box 1.2     **The Basin Plan is central to water recovery in the Basin**

To help change the allocation of water within the Murray-Darling Basin, the Murray-Darling Basin Authority (MDBA) is required to develop and implement a Basin Plan by 2011. It will set (long-term average) environmentally sustainable diversion limits (SDLs) on quantities of surface water and groundwater extraction and the conditions under which such diversions can occur. It is widely expected that SDLs will be much lower than the status quo, to allow a substantially higher proportion of available water to be allocated for meeting ecosystem requirements.

A key part of the Basin Plan will be an environmental watering plan that will set environmental objectives and targets for water-dependent ecosystems across the Basin. This will govern the management of water held by the Commonwealth Environmental Water Holder and other planned environmental water provided for under the Basin Plan.

The Basin Plan will set requirements that must be met under new state water resource plans to be introduced in 2014 in all affected jurisdictions, except Victoria, which is scheduled to introduce its next water plan in 2019. Based on advice from the MDBA, the Commonwealth Water Minister must accredit these plans, but only if satisfied that they are consistent with the Basin Plan. While SDLs will start to have effect from 2014, 'temporary diversion provisions' can be introduced to provide a further five-year transition period.

In the meantime, the Australian Government's water purchasing priorities have been guided by the findings of Basin-wide scientific studies on water availability and ecosystem health, information on the specific needs of particular environmental assets, and by the perceived difference between current levels of use and the anticipated SDLs, due to be established in 2011.

*Sources:* MDBA (2009a; 2009b).

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Basin states have, to varying degrees, been developing water sharing plans that define environmental objectives and establish statutory provisions for environmental water through rules-based flows and environmental entitlements. Some Basin states have also established environmental water managers to manage state environmental water (NWC 2009a) (chapter 2).

In addition, a number of water recovery programs have been established to recover and, in some cases, manage water for specific environmental assets in the Basin. The most notable example is the Living Murray Initiative, under which 500 GL of average annual flows is being obtained, through a mix of infrastructure investments, water buybacks and regulatory changes to improve environmental outcomes at six ‘icon’ sites along the River Murray. Other smaller water recovery programs have also been operating concurrently with the Living Murray Initiative to recover water for environmental flows (chapter 2 and appendix B).

### **Water recovery under the Water for the Future Initiative**

The two largest components of the Australian Government’s Water for the Future Initiative — the Restoring the Balance in the Murray-Darling Basin program and the Sustainable Rural Water Use and Infrastructure program — focus on water recovery in rural areas.

#### *Restoring the Balance in the Murray-Darling Basin program*

Under the RTB program, the Australian Government has committed \$3.1 billion from 2007-08 to 2016-17 to purchase water entitlements from willing sellers in the Basin (table 1.1). The program has used a mix of purchasing arrangements, the principal instrument being a series of tenders. This is to be complemented by ‘irrigator-led group proposals’. The Australian Government has also acquired entitlements under the RTB program through partially funding state government purchases of land and water in the northern Basin and ‘exit grant packages for small block irrigators’<sup>1</sup> (DEWHA, sub. 56, p. 6).

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<sup>1</sup> A condition of the exit grant packages was that entitlements had to be offered for sale (and accepted) in a subsequent tender. Applications for exit grants closed at the end of June 2009.

**Table 1.1 Budgeted expenditure for the RTB program<sup>a</sup>**

<i>Financial years</i>	<i>Budgeted expenditure</i>		
	<i>Original<sup>b</sup></i>	<i>1st revision<sup>c</sup></i>	<i>2nd revision<sup>d</sup></i>
	\$m	\$m	\$m
2007-08	50	45.5	45.5
2008-09	157	612.6	432.5
2009-10	466	464.0	1 237.8
2010-11	468	509.6	254.4
2011-12	346	445.1	249.5
2012-13	..	506.8	510.5
2012-13 to 2016-17	1 633	..	..
2013-14 to 2016-17 <sup>e</sup>	..	516.4	369.8

<sup>a</sup> Budgeted funding comprises departmental funding and administered funding. <sup>b</sup> Figures sourced from Hyder Consulting (2008). <sup>c</sup> Revised budget figures from DEWHA (pers. comm., 14 August 2009). <sup>d</sup> Revised budget figures from DEWHA (sub. 85, p. 26). <sup>e</sup> PC estimate derived from total program expenditure. .. Not applicable.

Source: *Appropriation (Water Entitlements) Act 2009* (Cwlth); DEWHA (Canberra, pers. comm., 14 August 2009); DEWHA (Canberra, pers. comm., 21 November 2009); Hyder Consulting (2008).

### *The tenders*

The principal mechanism used in the 2007-08 and 2008-09 rounds of the RTB program was a rolling tender, under which the Department of Environment, Water, Heritage and the Arts (DEWHA) invited holders of entitlements to bid the price and quantity of entitlements they were willing to sell (chapter 8). Bids were assessed against common criteria (chapter 4) throughout the tender period. If bids were considered to be value for money, in compliance with the program guidelines and subsequently passed due diligence, DEWHA proceeded to an exchange of contracts.

Four rolling tenders have now been completed. The first tender occurred in 2008 and purchased approximately 24 GL of entitlements of varying reliability. Subsequently, three further tenders were conducted in 2008-09, one focusing on the southern part of the Basin, the other two on the northern part of the Basin. Although these tenders closed at the end of June 2009, trades are still being settled. As at 31 January 2010, 797 GL of entitlements of varying reliabilities had been recovered (DEWHA 2009j).

In December 2009, it was announced that DEWHA would run three new tenders in the first half of 2010 in the southern connected Basin using a modified tender design (Garrett 2009). In particular, each tender would be open for only three weeks, would face an explicit budget constraint, and bids would be assessed at the

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close of the tender round (chapter 8). The first of the newly designed tenders ran from 11 January to 29 January 2010. No data on purchases are available as yet.

Although purchases have been made throughout the Basin, one single purchase stands out. This was the purchase of a package of water entitlements amounting to 240 GL of varying reliability for \$303 million from the Twynam Agricultural Group.

### *Irrigator-led group proposals*

The irrigator-led group proposal component of the RTB program allows groups of irrigators to develop a coordinated bid to sell water to DEWHA, which could lead to the decommissioning or reconfiguration of shared off-farm infrastructure that is causing high losses of water. The Australian Government is inviting irrigators to work with their irrigation operator and other directly affected parties to develop these proposals. It expressed its interest in purchasing not only the entitlements, but also any share of the conveyance water savings that become available. The Australian Government may make a contribution to infrastructure costs, where this contributes towards the objectives of the Water for the Future Initiative (DEWHA 2009c).

The Commission understands that several proposals have been discussed but none have yet come to fruition. The Australian Government has not set a deadline for the receipt of irrigator-led proposals.

### *Purchases of land and water*

Under a purchase of land and water component of the RTB program, DEWHA is partly funding state government purchases of irrigation properties and their water entitlements in the northern Basin. The most notable example of this to date was the purchase of Toorale station in September 2008 for \$23.75 million (chapter 7). This property held 14 GL of unregulated water entitlements from the Warrego and Darling Rivers, along with rights to harvest water from the floodplain. The NSW Government has taken responsibility for preserving the land, and the rights to take water have been transferred to the Australian Government (DEWHA 2009d).

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### *Small Block Irrigators Exit Grant Package*

The Small Block Irrigators Exit Grant Package<sup>2</sup> was designed to assist Basin irrigators with blocks of 40 hectares or less to exit the irrigation industry, while remaining in their communities. The package included a one-off grant of up to \$150 000 for eligible irrigators if they agreed to leave irrigation and abide by certain conditions (including that they sell all of their irrigation entitlements to the Australian Government through the RTB tender) (DEWHA 2009e). Applications for the exit grant package closed at the end of June 2009. DEWHA reports that as at 31 December 2009, 16.8 GL of entitlements had been recovered with a total of 21.2 GL expected to be recovered (sub. 85, p. 26).

### *Water purchases to date*

The combined outcome of the RTB program has, to the end of 31 January 2010, yielded just under 797 GL of entitlements of varying reliabilities at a cost of approximately \$1.3 billion (table 1.2) (DEWHA 2009j).

Because it is not particularly meaningful to sum the purchases of entitlements of different reliability, DEWHA also presented the results in terms of the expected average annual volume of water that should become available. This suggests that, on average over the long term, around 532 GL per year should be available from holding this bundle of entitlements. This compares to long term average inflows into the Basin of around 11 000 GL per year (chapter 3) and a Living Murray Initiative assessment that found increased environmental flows of 1500 GL per year — combined with improvements in structural, operational and water quality management — would provide considerable ‘whole-of-river and local ecological habitat benefits in the southern Basin’ (chapters 4 and 11).

Nominally, over 549 GL of entitlements have been sourced from New South Wales, or about 69 per cent of the total volume of entitlements purchased. In long term equivalent terms, the purchases from New South Wales amount to just over 317 GL, or about 60 per cent of the corresponding total.

Around 90 per cent of water entitlements purchased under the RTB program have come from three of the four high priority catchments identified under the RTB tender assessment criteria in 2008-09 (the Gwydir, Macquarie and Southern Connected Murray System catchments).

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<sup>2</sup> The grant is funded through the SRWUI program but eligibility is ultimately dependent on applicants selling their water to the Australian Government through the RTB tender.

**Table 1.2 Entitlements secured under the Restoring the Balance program as at 31 January 2010<sup>a</sup>**

Catchment	Entitlement type	Purchases <sup>b</sup>	Expected average annual volume of water <sup>c</sup>	Average price paid per ML <sup>d</sup>
		ML	ML	\$
<b>New South Wales</b>				
Gwydir	General security	88 520	31 867	2 242
	Supplementary	16 324	3 102	na
Barwon-Darling <sup>e</sup>	Unregulated	30 381	30 381	na
Namoi	General security	5 777	4 448	2 057
Macquarie	General security	61 215	25 710	1 266
	Supplementary	1 888	397	161
Lachlan	High security	300	300	na
	General security	81 671	34 302	692
Murrumbidgee	General security	64 359	41 190	1 118
	Supplementary	20 821	2 915	218
Murray above choke	General security	145 785	118 086	1 320
Murray below choke	General security	28 803	23 330	1 276
Murray below choke	High security	318	302	2 279
Other	Various	3 210	961	na
<b>Total</b>		<b>549 372</b>	<b>317 291</b>	
<b>Victoria</b>				
Campaspe	High reliability	5 051	4 799	2 375
Goulburn-Broken	High reliability	81 137	77 080	2 391
	Low reliability	9 590	3 356	195
Lodden	High reliability	1 029	987	2 383
Ovens	High reliability	50	48	na
Murray above choke	High reliability	35 954	34 156	2 188
	Low reliability	5 940	1 426	191
Murray below choke	High reliability	59 358	56 390	2 377
	Low reliability	5 450	1 308	200
Other	Various	851	317	na
<b>Total</b>		<b>204 409</b>	<b>179 856</b>	
<b>Queensland</b>				
Border rivers	Medium security	6 832	2 255	2 276
<b>Total</b>		<b>6 832</b>	<b>2 255</b>	
<b>South Australia</b>				
Murray	High security	36 116	32 504	2 384
<b>Total</b>		<b>36 116</b>	<b>32 504</b>	
<b>Basin total</b>		<b>796 729</b>	<b>531 905</b>	

<sup>a</sup> For contracts exchanged as at 31 January 2010. <sup>b</sup> Includes purchases from 2007-08 and 2008-09. <sup>c</sup> DEWHA's calculation of the expected average seasonal allocation to a given water entitlement. Equivalent to the Living Murray Initiative's Long Term Cap Equivalent measure. <sup>d</sup> Average prices paid in 2008-09. <sup>e</sup> Includes entitlements acquired from Toorale Station. **na** Not available.

Source: DEWHA (2009j).

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The reliability profile of the Australian Government's portfolio of water entitlements acquired under the RTB program is heavily weighted to general and high security entitlements. In long term equivalent terms, the NSW general security entitlements are expected to provide approximately 279 GL (52 per cent) of average annual flows while the NSW, Victorian and SA high security entitlements are expected to deliver average flows of 206 GL (39 per cent) per year (table 1.2) (DEWHA, 2009j).

#### *Water deliveries to date*

In 2008-09, the Commonwealth Environment Water Holder (CEWH) undertook its first environmental water actions, distributing 11 GL of water across 10 wetlands and floodplains in the Basin. As of 30 January 2010, the CEWH had delivered a further 65 GL of water to 18 sites (DEWHA 2010).

#### *Sustainable Rural Water Use and Infrastructure program*

The SRWUI program encompasses various component programs, most of which subsidise investment in irrigation infrastructure projects to generate water efficiency savings (chapter 6). Water entitlements to the recovered water are shared between the Australian Government and its project partners (usually irrigators and irrigation water providers). The projects may invest in state or private off-farm infrastructure or private on-farm systems. The Australian Government has allocated \$5.8 billion to the SRWUI program over ten years under the Water for the Future initiative. SRWUI component programs include:

- State Priority Projects — the 2008 Intergovernmental Agreement on the Murray-Darling Basin earmarked \$3.7 billion for state infrastructure projects and established a set of due diligence criteria the Australian Government would use to assess projects for implementation. Most projects have yet to pass the due diligence process.
- Irrigation Modernisation Planning Assistance — helps irrigation water providers develop modernisation plans for their districts. The program is ongoing until 29 October 2012 unless available funds are spent.
- On-Farm Irrigation Efficiency Program — up to \$300 million to assist irrigators in the Lachlan and southern connected system modernise on-farm irrigation infrastructure. Applications closed 17 November 2009.
- Private Irrigation Infrastructure Operator Program in New South Wales — up to \$650 million to assist private irrigation infrastructure operators modernise and upgrade irrigation infrastructure. Applications closed 27 November 2009.

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- Private Irrigation Infrastructure Operator Program in South Australia — up to \$110 million to fund irrigation infrastructure efficiency improvements. Applications close 8 April 2010.
  - Menindee Lakes and Aquifer Recharge — up to \$400 million to reduce evaporation and improve water efficiency at Menindee Lakes to secure Broken Hill’s water supply and return up to 200 GL per year to the environment. As at January 2010, implementation studies were ongoing.
  - Water Meter Test Facility Upgrading and Accreditation — a program to improve water metering and monitoring in the Basin (DEWHA, sub. 56).

## 1.4 Clarifying objectives

The effectiveness of any government policy or program needs to be assessed against its stated or implied objectives. In this study the objectives of the Water for the Future Initiative and its two major components — the RTB and the SRWUI programs — need to be considered. The stated aims of Water for the Future include using water wisely, securing water supplies for all Australians and supporting healthy rivers (DEWHA 2009f).

### Restoring the Balance program

The stated objectives for the RTB program vary depending on the policy documentation referred to. One recurring theme is that the program is intended as a means for easing the transition to the lower diversion limits expected under the Basin Plan. But it is also apparent that the Government expects the buyback to provide water for the environment to meet short-term needs. DEWHA has also stated that purchases should ‘represent value for money’ (DEWHA 2009n).

The dual objectives — obtaining water for the environment in the short term in a cost effective manner and easing the transition to lower levels of water under the Basin Plan — are evident in a statement by the Minister:

A significant part of the Australian Government’s plan for reform is to purchase water entitlements, from willing sellers, to help restore the rivers and water resources of the Basin and to ease the transition to the lower diversion limits expected under the Basin Plan. (Wong 2009d)

The short term needs are sometimes described as being urgent or immediate. For example, a DEWHA Fact Sheet stated that:

... excessive consumptive use and declining river health are urgent priorities and these are to be addressed immediately by the Restoring the Balance in the Murray-Darling

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Basin program. The goal of Restoring the Balance in the Murray-Darling Basin is to purchase water entitlements so that the water allocated to them can be used for the environment. This will improve the health of the Basin's rivers, wetlands and floodplains. (DEWHA 2010)

A slightly different picture again emerges from DEWHA's submission to this study in which the Department states that the program's objective is 'to achieve a permanent rebalancing of the system' implying that this is the only objective (sub. DR85, p. 19). This has some parallels with the idea of transitioning to the Basin Plan but seems to go further, as if to imply that the RTB will by itself achieve the rebalancing that the Basin Plan is designed to achieve.

The overall picture is one of multiple, poorly defined, and at times, conflicting objectives. For the purposes of this report the Commission has concluded that the objectives that might reasonably be ascribed to the program are:

- to help ease the transition to the lower levels of water availability likely under the Basin Plan
- to provide some water for the environment, particularly to meet short-term needs
- to obtain water cost effectively.

### **Sustainable Rural Water Use and Infrastructure program**

In explaining the SRWUI, DEWHA states that investment will be principally directed towards projects that:

1. deliver substantial and lasting returns of water for the environment
2. secure a long-term future for irrigation communities ...
3. deliver value for money in the context of the first two tests. (DEWHA 2009I)

This statement appears to be derived from the 2008 Agreement on Murray-Darling Basin Reform (the Basin Agreement) (box 1.3), and, as such, might be implied to summarise the government's objectives in implementing this program.

The first point to note about these objectives is that like the RTB program, there is a focus on obtaining water for the environment in a cost-effective manner. Given that the intention is to allocate the recovered water to the environment as entitlements, this objective is similar to that of the RTB program. The second is that investment should help secure a long-term future for irrigation communities, in the context of climate change and reduced water availability in the future (box 1.3). Again this is meant to be done cost effectively.

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The reference to reduced water availability hints at the importance of the SRWUI program as a transitional measure to the lower levels of water availability expected to result from the imposition of the Basin Plan, and hence might be considered to have a similar purpose to the RTB program. Indeed, the Minister has indicated that, like the RTB, the SRWUI program is also a transitional measure (Wong 2009d).

**Box 1.3 The objectives of investing in State Priority Projects**

The objectives of the Sustainable Rural Water Use and Infrastructure program can be imputed from the 2008 Agreement on Murray-Darling Basin Reform, which states that the objectives of Australian Government investments in 'Priority Projects' are to:

- (a) implement water saving infrastructure projects;
- (b) return water to the environment and restore river health; and
- (c) adapt to climate change in an environment of reduced water availability. (clause 4.9.1)

These are given meaning by the investment principles also set out in that agreement:

- (a) projects must be able to secure a long-term sustainable future for irrigation communities, in the context of climate change and reduced water availability in the future;
- (b) projects must deliver substantial and lasting returns of water to the environment to secure real improvements in river health; and
- (c) projects must be value for money in the context of the first two tests. (clause 4.10.1)

*Source:* Agreement on Murray-Darling Basin Reform 2008.

But the Basin Agreement also states that securing a long-term future for irrigation communities should be '... in the context of climate change ...' (clause 4.10.1). How this should be interpreted is debatable. One interpretation might be that the intention is at least in part to underwrite the risks to irrigators from climate change by subsidising investment in water-saving infrastructure. But another interpretation would be that the reference to climate change is a reference to the water availability benchmark against which the claimed water savings of projects must be measured.

For the purposes of this report, the Commission imputes that one of the objectives of the SRWUI program is the same as that applying to the RTB program, namely, that it should ease the transition to the lower levels of water that will be available under the Basin Plan. There is also some similarity in that the SRWUI program should be a cost effective way of obtaining water for the environment, though in this case, in recognition of the lead times involved in investment in capital goods, this might be only achievable in the medium to longer term. Then there are the additional, but ill-defined, objectives of securing the long-term sustainability of irrigation communities and underpinning 'food security' (Wong 2009b).

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## Basin Plan

As noted, the Basin Plan will provide the institutional framework for an administrative reallocation of water, through the imposition of sustainable diversion limits at the Basin-wide and catchment levels (through state water plans).

The purposes of the Basin Plan are set out in the *Water Act 2007* (Cwlth). Both the purposes of the Basin Plan and the objectives of the Act set up some seemingly conflicting requirements. The objectives of the Act include that the Basin be managed in the ‘public interest’ (s. 3(a)). And the purposes of the Basin Plan include that it provide for, inter alia, ‘... the use and management of the Basin water resources in a way that optimises economic, social and environmental outcomes’ (s. 20(d)). But the Basin Plan must also provide for ‘... the establishment and enforcement of environmentally sustainable limits on the quantities of surface water and ground water that may be taken from the Basin water resources (including by interception activities)’ (s. 20(b)).

One interpretation of these clauses might be that environmental sustainability would be consistent with a use of the water resources that gave the greatest overall return to the community. But the MDBA has stated that SDLs will take into account ‘...the best available science, and the precautionary principle’ and that ‘... SDLs will be set at levels ... at which water in the Basin can be taken from a water resource without compromising key environmental assets, key ecosystem functions, key environmental outcomes or the productive base of the water resource’ (MDBA 2009a, p. 7). The implication seems to be that the primary objective of the Basin Plan is to manage the Basin resources in a way that will promote environmental sustainability defined in a technical sense (chapter 6).

Clarifying objectives helps develop a conceptual framework for addressing issues raised during this study, including identifying the best policy instrument(s) for achieving particular objectives. While these issues are taken up in greater detail in chapter 5, it is worthwhile highlighting some of the internal tensions that can be created by trying to address multiple objectives with one instrument. Thus the government has placed considerable emphasis on recovering water through the acquisition of water entitlements, and while this helps address the objective of transitioning to the lower SDLs expected under the Basin Plan, it potentially conflicts with the objective of providing water for the environment in the short term. There is therefore a need to distinguish between appropriate responses for achieving different objectives in both the short term and the long term.

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## 1.5 Conduct of the study

The terms of reference for this commissioned study were received from the Assistant Treasurer on 24 July 2009. Under the terms of reference, the Commission was to report within six months of commencing the study and publish the report. On 15 October 2009, the Assistant Treasurer agreed to extend the reporting date for the study to 24 March 2010.

To ensure broad community input and transparency, the Commission consulted and invited feedback in the following ways:

- After the study was announced, the Commission advertised nationally and promoted the study on its website.
- A circular was mailed to people and organisations that the Commission considered might be interested in the study. Subsequent circulars were sent to those who had expressed an interest in the study to keep them updated on progress.
- Informal discussions were held with a wide range of organisations and individuals.
- In July and August 2009 a series of meetings and round tables were held in Brisbane, Sydney, Canberra, Melbourne and Adelaide to canvas particular issues and options for reform.
- An issues paper was released on 19 August 2009 to assist interested parties in preparing submissions to the study.
- In August and September 2009, a series of meetings were held in rural centres in southern Queensland, New South Wales and Victoria to canvas issues and options for reform. In February 2010, an additional series of public roundtables and meetings were held in New South Wales, Victoria, South Australia and Canberra to receive feedback on the draft report.
- The Commission received 57 submissions prior to releasing the draft report, and 34 submissions between the draft report and the final report.
- The Commission hosted a blog site from December 2009 to late February 2010 that attracted 22 comments and suggestions.

The Commission thanks all study participants for meeting with Commissioners and staff, facilitating visits to many industry sites and making submissions to the study (appendix A).