

## Chapter 2

### Background

#### Introduction

2.1 This chapter provides background and history of the Murray-Darling Basin, (MDB) the legislative frameworks that underpin water management in the basin, and the development, implementation and evolution of the Murray-Darling Basin Plan ('the Plan').

#### Background and history of the basin

2.2 The Murray–Darling Basin’s streams and rivers sit in a shallow basin, which is very old, very flat, contains large stores of salt, and with respect to groundwater is very nearly blind in that it has no outlet to the sea.<sup>1</sup>

2.3 The MDB catchment covers an area of 1.06 million km<sup>2</sup> or 14 per cent of the Australian land area through Queensland, New South Wales, the Australian Capital Territory, Victoria and South Australia. The basin provides 'essential water for its 2.1 million residents including supplying another 1.3 million people outside the basin.'<sup>2</sup>

2.4 The economies of many regional centres rely on the basin, which produces one-third of all Australia's food from 20 per cent of Australia's farming land. The basin also has a significant historic and natural tourism industry.<sup>3</sup>

**Table 2.1. Major land use activities in the MDB region by area<sup>4</sup>**

Land use activity	Area (km2)	Total area (%)
Grazing	727,800	69
Dryland agriculture	133,300	13
Conservation and natural environments	107,600	10
Forestry	34,000	3
Irrigated agriculture	24,700	2
Urban	14,300	1
Water	12,400	1
Other intensive uses	1,200	<1
Mining	300	<1
<b>Total</b>	<b>1,055,600</b>	<b>100</b>

1 John William, Understanding the Basin and its Dynamics, Basin Futures Water reform in the Murray-Darling Basin, ANU Press.

2 MDBA, <http://www.mdba.gov.au/discover-basin/people> (accessed 12 February 2016).

3 MDBA, <http://www.mdba.gov.au/discover-basin/people> (accessed 12 February 2016).

4 Bureau of Meteorology, Murray-Darling Basin, Physical information, <http://www.bom.gov.au/water/nwa/2012/mdb/contextual/physicalinformation.shtml> (accessed 26 February 2016).

2.5 Prior to European settlement, the basin was home to numerous Indigenous groups, and some of their descendants continue to have a strong connection with the rivers and land within the basin.

2.6 European settlement of the basin commenced in the early 1800s with farming—both stock and agricultural production—enhanced by trade on the rivers, irrigation schemes and the Snowy Mountains Hydro-electric Scheme.

2.7 The basin and its rivers are significant in that they provide substantial support to the Australian economy and have major cultural, social, ecological and environmental significance to the nation.

### **Water management in the basin**

2.8 Water management across the basin is a complex endeavour. Historically, water management was controlled by the individual basin states. This has evolved over the past decade, with the Commonwealth taking a more active role in promoting and leading a basin-wide management and reform of water resources.

2.9 Following concerns about increasing levels of surface and ground water extraction from the basin during the 1980s-90s, water regulation and water use reform became a national issue.

2.10 In 1994, the Council of Australian Governments (COAG) agreed to a water reform framework in recognition that management of Australia's water resources was a national issue that would require cooperation between the Commonwealth and basin states. A fundamental change with this agreement was the separation of entitlements to water from land titles and the separation of the functions of water delivery from regulation while still making provision for environmental water.

2.11 Following the agreement in 1995, a basin-wide cap was agreed limiting the volume of surface water to be diverted for consumptive use to 1993-94 levels.<sup>5</sup>

2.12 In 2004, the National Water Initiative (NWI) was agreed to by COAG to further improve Australia's water efficiency. From this, the Commonwealth-funded National Water Commission (NWC) was established to 'monitor and audit water reform policy implementation and management'.

2.13 The establishment of the NWI also saw the commencement of a commitment to recover 500 gigalitres (GL) of water for the environment, including making available \$500 million of investment to enable this water recovery to occur.<sup>6</sup> This was the first time that water had been allocated solely for environmental purposes.

2.14 The commission was later abolished in 2014 as part of the Abbott Government budget measures.<sup>7</sup> A full chronology of key events in water management

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5 Department of the Environment, *Submission 50*, p. 1.

6 MDBA submission to the Productivity Commission's inquiry study into mechanisms to purchase water entitlements, September 2009  
<http://www.pc.gov.au/inquiries/completed/murray-darling-water-recovery/submissions/sub040.pdf>, p. 1 (accessed 15 March 2016).

7 NWC, <http://www.nwc.gov.au/organisation/closure-in-2014> (accessed 12 February 2016).

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policy was provided by the Department of the Environment. This table is reproduced at Appendix 3.

### ***Water Act 2007***<sup>8</sup>

2.15 In early 2007, in response to the millennium drought, the Howard Government announced that \$10 billion over ten years would be provided for the *National Plan for Water Security*.<sup>9</sup> As part of the commitment to this package, the basin states agreed to refer their powers to the Commonwealth.

2.16 Subsequently, the *Water Act 2007* was enacted establishing the Murray–Darling Basin Authority (MDBA) and providing for development of the Basin Plan ("the Plan"). Central to the Plan is the establishment of sustainable diversion limits (SDLs)—limits on the volumes of water available for consumptive water use to ensure there are sufficient water resources available to maintain key environmental assets.<sup>10</sup>

2.17 The *Water Act 2007* provides the legislative framework for major water management reforms. It marks the first time that the Commonwealth has had a dominant role in water management, as decisions were previously made by states and decisions on cross-jurisdictional issues required agreement from all states. The Act enables a basin-wide approach to setting sustainable limits on water that can be taken from surface and groundwater systems and sustainably managing water resources in the national interest.

2.18 The Act legislated for:

- the establishment of the Murray-Darling Basin Authority (MDBA) to manage basin water resources;
- the requirement for the MDBA to develop a national basin plan;
- the establishment of the Commonwealth Environmental Water Holder (CEWH) to manage Commonwealth environmental water and the restoration of environmental assets in the basin;
- the Australian Competition and Consumer Commission (ACCC) to develop and enforce water charge and water market rules; and
- the Bureau of Meteorology to have additional water information functions.<sup>11</sup>

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8 *Water Act 2007*, <https://www.comlaw.gov.au/Details/C2015C00272> (accessed 12 February 2016).

9 The Australian, January 25, 2007, John Howard's full speech to the National Press Club, (accessed 24 February 2016).

10 Murray-Darling Basin Authority, <http://www.mdba.gov.au/basin-plan-roll-out/sustainable-diversion-limits> (accessed 16 March 2016).

11 Department of the Environment, <https://www.environment.gov.au/topics/water/australian-government-water-leadership/water-legislation/key-features-water-act-2007> (accessed 12 February 2016).

2.19 The objects of the Act were to:

- a) enable the Commonwealth, in conjunction with the basin states, to manage basin water resources;
- b) give effect to international agreements relevant to the use and management of basin water resources;
- c) promote the use and management of basin water resources 'in a way that optimises economic, social and environmental outcomes';
- d) without limiting the previous two points,
  - i. ensure the return to environmentally sustainable levels of extraction for water resources that are over allocated or overused;
  - ii. protect, restore and provide for the ecological values and ecosystem services of the basin; and
  - iii. subject to the above two points, 'maximise the net economic returns to the Australian community from the use and management' of basin water resources;
- e) improve water security for all uses of basin water resources;
- f) ensure the management of basin water resources is in accordance with the broader management of natural resources in the basin;
- g) achieve 'efficient and cost effective water management and administrative practices' for basin water resources; and
- h) provide for the 'collection, collation, analysis and dissemination' of information on Australia's water resources and the use and management of water in Australia.<sup>12</sup>

2.20 The Act was amended in 2008 by the *Water Amendment Act* following the 2008 *Intergovernmental Agreement on the Murray-Darling Reform* which set out the arrangements for implementing the 2007 Memorandum of Understanding between the Commonwealth and the basin states on the principles for co-operative management of the basin resources. This amendment subsumed the role and functions of the Murray-Darling Basin Commission into the MDBA, made some consequential changes to governance arrangements of MDBA, expanded the role of basin state governments in the development of the Plan, provided for the Plan to include 'arrangements for meeting critical human water needs' and broadened the role of the ACCC with regard to water charge and market rules.<sup>13</sup>

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12 Section 3 of the *Water Act 2007*, [https://www.comlaw.gov.au/Details/C2015C00272/Html/Text#\\_Toc422739796](https://www.comlaw.gov.au/Details/C2015C00272/Html/Text#_Toc422739796) (accessed 15 February 2016).

13 Department of the Environment, *Submission 50*, p. 3.

2.21 Two further amendments were brought forward in 2015. The Water Amendment Bill 2015 [Provisions]<sup>14</sup> which proposed to:

- amend the *Water Act 2007* to impose a duty on the Commonwealth not to exceed the 1500GL limit on surface water purchases in the Murray-Darling Basin at the time of entering into a water purchase contract; and
- amend the Murray-Darling Basin Plan 2012 to provide increased flexibility in the recovery of 450GL of water through efficiency measures funded under the Water for the Environment Special Account.

2.22 Followed by the *Water Amendment (Review Implementation and Other Measures) Bill 2015* that proposes to amend the *Water Act 2007* in relation to: reviews and reporting requirements for the Plan; accreditation of first generation state water resource plans with further accreditations linked to Plan review outcomes; incorporation of Indigenous expertise and knowledge in the governance of the basin's water resources; trading by the CEWH; and the redundancy of the Murray-Darling Basin Water Rights Information Service; and technical and consequential amendments

2.23 This amendment makes the legislative changes required to implement the government's response to the *Report of the Independent Review of the Water Act 2007* (the Water Act Review). The provisions of the bill are still before the Senate.

### ***Roles and responsibilities***

2.24 Water management is now carried out by a variety of Commonwealth and state agencies that work collaboratively to manage the basin's water resources. The MDBA's submission to the inquiry included a table that detailed the roles and responsibilities for water reform in the basin.<sup>15</sup> This table is reproduced at Appendix 4. They are:

- the Minister for Water;
- the Department of Agriculture and Water Resources (DAWR);<sup>16</sup>
- the Murray-Darling Basin Authority;
- the Commonwealth Environmental Water Holder (CEWH); and
- the basin states.

2.25 As such, DAWR now provides policy advice and program implementation, and is responsible for the water recovery strategy and national partnership agreement for implementing the Plan.

2.26 The MDBA's key role is to oversee the implementation of the Plan at the basin scale and liaise with the basin states. The MDBA also carries out some river

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14 Royal assent received 13 October 2015.

15 MDBA, *Submission 243*, p. 43.

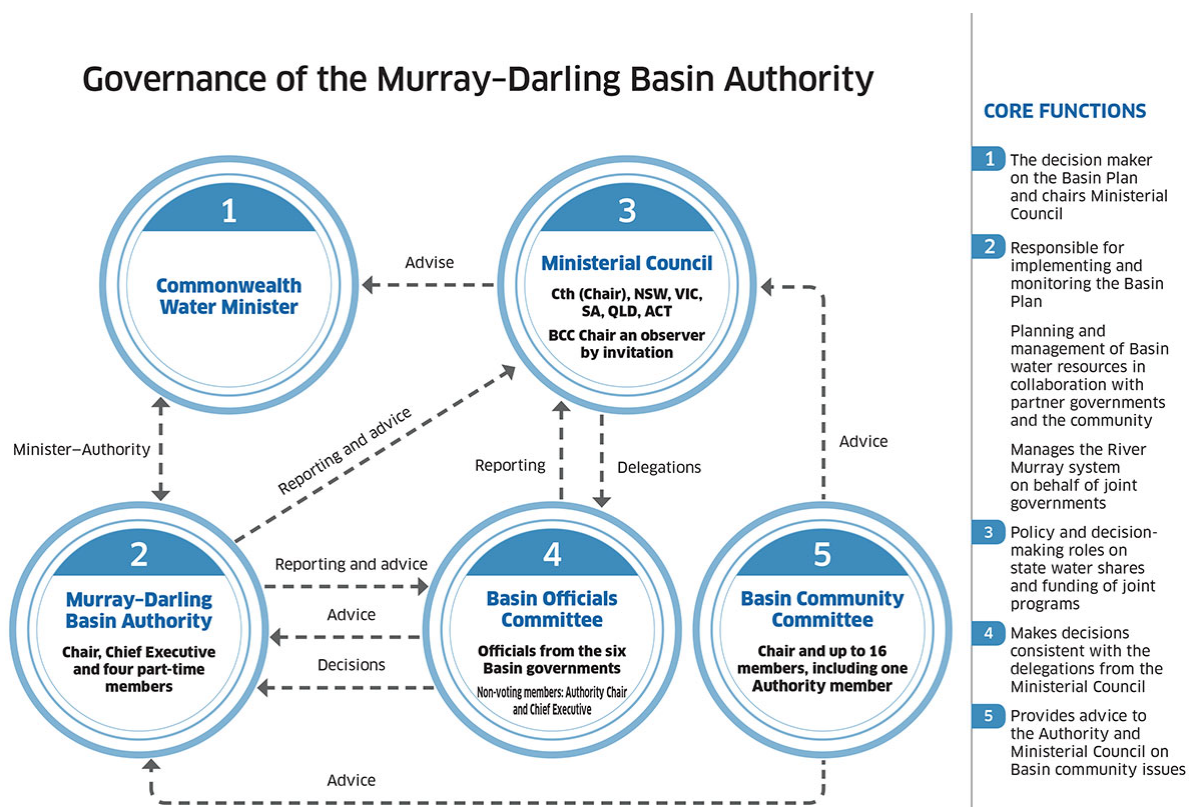
16 Previously water policy was located in the Department of the Environment.

operations functions, particularly in the southern basin, on behalf of state governments. The MDBA's governance structure is outlined in Figure 2.1 below.

2.27 The CEWH manages environmental water held by the Commonwealth.

2.28 The basin states have various responsibilities, including owning water, allocating it to entitlement holders, holding and delivering environmental water, and implementing the Plan in their own jurisdictions. This includes projects under the SDL adjustment mechanism and the constraints management strategy.<sup>17</sup>

**Figure 2.1 Governance of the Murray-Darling Basin Authority<sup>18</sup>**



2.29 The MDBA also supports a number of subcommittees that provide support and guidance; the Basin Officials Committee and the Basin Community Committee and the Northern Basin Advisory Committee.

2.30 The MDBA also manages the Basin Plan Implementation Committee (BPIC) that was established by the basin governments and the MDBA under the MDBP 2012 Implementation Agreement to help implement the Plan.

2.31 The BPIC oversees Working groups have been established to undertake tasks at the request of BPIC and to provide advice on particular aspects of Plan implementation.

<sup>17</sup> MDBA, *Submission 243*, p. 10.

<sup>18</sup> MDBA, <http://www.mdba.gov.au/about-us/governance> (accessed 3 March 2016).

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2.32 These working groups are the:

- Water Resource Plan Working Group
- Environmental Watering Working Group
- Water Trade Working Group
- Monitoring and Evaluation Working Group.

### **The Murray-Darling Basin Plan**

2.33 The Plan is the key instrument that implements the *Water Act 2007*. The Act requires the MDBA to develop the Plan and manage its implementation.

2.34 The Plan has two core requirements that differ from previous water management arrangements:

- sustainable limits on water extractions for all basin water resources; and
- whole-of-basin management to ensure a basin-wide approach to managing water resources.<sup>19</sup>

### ***Need for the Plan***

2.35 The MDBA's submission reasoned the need for the Plan is to ensure a sustainable basin that delivers social, economic and environmental outcomes. The aim of the Plan is to ensure a balance between these three competing demands to ensure triple bottom line outcomes are met, including:

...to support productive industries, farmers and towns into the future, while leaving sufficient water in the basin's river system to ensure a healthy environment for the benefit of basin communities.<sup>20</sup>

2.36 The MDBA noted that the development, use and management of water in the past century have changed the pattern of flows in the rivers and had unintended consequences for the environment:

Rivers in the southern basin once flowed more strongly in winter and spring; now their flows peak in summer and autumn to match the demands of irrigators. Changes to seasonal peaks can affect breeding and feeding opportunities for most of the water-dependent native animals in the basin, and seasonality of flooding is important for most flood-dependent vegetation. While very large floods can still occur, small to medium floods are commonly constrained, typically by in-stream dams in the more regulated south, or captured in large on-farm storages in the less regulated north. The reduction in smaller flood events adversely affects the basin environment, as these smaller floods are important in ensuring that the basin's environment is resilient and able to survive through drought years.<sup>21</sup>

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19 MDBA, *Submission 243*, p. 1.

20 MDBA, *Submission 243*, p. 3.

21 MDBA, *Submission 243*, p. 3.

2.37 Gradual changes to water use and management have meant that some land and water resources in the basin are periodically under stress. The basin plan was developed to address these issues and to ensure that the environment could support productive, sustainable industries and communities.

### ***Development of the Plan***

2.38 The development of the Plan involved extensive consultation with governments, communities and industry.<sup>22</sup> Almost 12 000 submissions were received during the initial consultation period.<sup>23</sup> The MDBA conducted extensive community consultation as the Plan was developed, and incorporated feedback received into the various drafts of the Plan.<sup>24</sup>

2.39 Developed through several phases, the Plan commenced with the Guide to the proposed Basin Plan, released in October 2010. The Proposed Basin Plan was released in November 2011 and a revised draft released in May 2012. The ministerial council then provided comments to MDBA, and an Altered Proposed Basin Plan was released in August 2012. Further feedback was provided including by the then Commonwealth Minister, the Hon Tony Burke MP, and the Final Basin Plan was presented to Parliament on 26 November 2012.

### ***Key features of the Plan***

2.40 In addition to managing the basin as a single system, rather than as separate state-based systems, the Plan involves:

- implementing limits on surface and groundwater extraction, known as sustainable diversion limits (SDLs);
- coordinated environmental watering arrangements and water quality targets to optimise environmental outcomes;
- increased certainty for water users and entitlement holders through more transparent water resource planning;
- implementing reforms for a more flexible water market; and
- implementing a one-off adjustment process to improve economic and environmental outcomes (through the SDL adjustment mechanism and the northern basin review).<sup>25</sup>

2.41 The Plan includes a set extraction limit, which means that 2750GL of water has to be taken from consumptive use and made available to the environment each year.<sup>26</sup>

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22 MDBA, *Submission 243*, p. 8.

23 Department of the Environment, *Submission 50*, p. 5.

24 MDBA, *Submission 243*, p. 8.

25 MDBA, *Submission 243*, pp 4–5.

26 MDBA, *Submission 243*, p. 1.



2.42 The Plan also involves a seven-year transition period to enable time for adjustment across the basin, opportunities to review and improve the Plan during the implementation phase (including the SDL adjustment mechanism, a constraints management strategy, the Northern Basin review, and three groundwater extraction reviews).<sup>27</sup>

### ***Implementation and ongoing work***

2.43 The committee notes that the Plan is three years into a seven-year implementation period ending in 2019<sup>28</sup> and that the MDBA has completed preparatory work that includes the Plan's first environmental watering strategy, three sets of annual watering priorities, a constraints management strategy and a monitoring and evaluation strategy in this time.<sup>29</sup>

2.44 The committee also notes that as at 30 June 2015, 1951GL of the 2750GL per year recovery amount (due by 2019) has been recovered or contracted out by the Commonwealth and state governments for environmental use.<sup>30</sup> This amount equates to approximately 71 per cent of the required water environmental recovery.

2.45 As per the *Water Amendment Bill 2015*, the committee understands that Commonwealth water recovery purchases have now been capped at 1500GL and that any future environmental recovery volumes will primarily be achieved through infrastructure projects.<sup>31</sup>

2.46 The Department of Environment states in its submission that the current focus of Commonwealth programmes is on supporting irrigators to 'improve the operation of off-farm delivery systems and helping irrigators improve the efficiency of their water use on-farm.'<sup>32</sup> Off-farm programmes, the Department notes, are aimed at reducing loss of water from seepage, evaporation and other losses, and rationalising irrigation schemes, whereas on-farm programmes aim to modernise infrastructure in order to increase productivity and adjust to reduced water availability.

2.47 In addition to ensuring environmental outcomes,<sup>33</sup> the MDBA says it continues to monitor the social and economic effects of the Plan on basin communities and industries, noting that the Plan is just one of many factors that can impact on communities and industries, and that its effects can be both positive and negative in different areas.<sup>34</sup>

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27 MDBA, *Submission 243*, p. 1.

28 MDBA, *Submission 243*, p. 9.

29 MDBA, *Submission 243*, p. 11.

30 Department of the Environment, *Submission 50*, p. 8.

31 MDBA, *Submission 243*, p. 11.

32 Department of the Environment, *Submission 50*, pp 8–9.

33 MDBA, *Submission 243*, p. 12.

34 MDBA, *Submission 243*, p. 11. See also MDBA, <http://www.mdba.gov.au/socio-economic-profile-murray-darling-basin> (accessed 15 February 2016).

2.48 New water trading rules came into effect in 2014 to improve the operation and transparency of the water market. They remove barriers to trade and give water traders better access to market information. The MDBA indicated that an increasing number of people are participating in the water market.<sup>35</sup>

2.49 The SDL adjustment mechanism was included in the Plan at the request of state governments, and gives 'an opportunity to increase the water extraction limits in the Basin Plan if states could develop projects that can achieve equivalent environmental outcomes to the Basin Plan with less water'.<sup>36</sup> These are called supply measures and would lead to a reduction in the recovery target (i.e. amount removed from consumptive use). SDLs apply to both surface water and ground water. Early assessment of supply measures has indicated that the SDLs could be increased by up to 500GL.<sup>37</sup>

2.50 A constraints management strategy was also included in the Plan at the request of governments. Constraints are 'river rules, practices and structures that govern the volume and/or timing of regulated water delivery through the river system'.<sup>38</sup> The Plan is said to be capable of being delivered without any constraints, however addressing constraints can improve the effectiveness of environmental flows. The MDBA is involved in undertaking preliminary work on constraints in some areas.<sup>39</sup>

2.51 A review of the Northern Basin was built into the Plan to assess and amend, if required, the extraction limits for the Northern Basin, with a particular focus on the Condamine-Balonne and Barwon-Darling systems. This work is being conducted by the MDBA in concert with federal, state and local entities and is due to conclude in 2016.<sup>40</sup>

2.52 State governments also requested the Plan include reviews of sustainable groundwater extraction limits in three areas in NSW and Victoria. This work is ongoing and may lead to an amendment to the Plan in 2016.<sup>41</sup>

2.53 Furthermore, all basin states are developing water resource plans for accreditation by the Commonwealth, outlining their water management plans from 2019 to 2029.

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35 MDBA, *Submission 243*, p. 14.

36 MDBA, *Submission 243*, p. 14.

37 MDBA, *Submission 243*, pp 14–15. See also MDBA, <http://www.mdba.gov.au/basin-plan-roll-out/sustainable-diversion-limits> (accessed 15 February 2016).

38 MDBA, *Submission 243*, p. 15. See also MDBA, <http://www.mdba.gov.au/basin-plan-roll-out/managing-constraints> (accessed 15 February 2016).

39 MDBA, *Submission 243*, pp 15–16.

40 MDBA, *Submission 243*, p. 16. See also MDBA, <http://www.mdba.gov.au/basin-plan-roll-out/northern-basin> (accessed 15 February 2016).

41 MDBA, *Submission 243*, p. 16.