



Australian Government



The costs of Joint Activities in the Murray Darling Basin

MDBA submission to Essential Services Commission of South Australia 'Inquiry into Reform Options for SA Water's Drinking Water and Sewerage Prices'



September 2014



Author information



Overview

The Murray Darling Basin Authority (MDBA) welcomes this opportunity to make a submission to the ESCOSA *Inquiry into Reform Options for SA Water's Drinking Water and Sewerage Prices*.

The MDBA manages River Murray Operations (RMO) and a number of other activities in the Murray Darling Basin on behalf of the Australian Government and the governments of New South Wales, Victoria and South Australia. The construction, operation and maintenance of water storage and delivery assets of the River Murray System ensure the delivery of state water shares to New South Wales, Victoria and South Australia. Water from regulated flows, and at times unregulated flows, from the Murray Darling Basin is distributed in South Australia to bulk rural water users, irrigators, and urban and retail customers by SA Water.

It is important that a review of water prices in South Australia, including the scope for pricing reform and efficiency improvements, have an accurate picture of River Murray Operations and the relevant functions of the MDBA. The purpose of this submission is to provide detailed information to ESCOSA on the nature of the Joint Activities and in particular River Murray Operations. Another key objective is to clarify for ESCOSA the nature of the South Australian contribution to the MDBA for South Australia's share of the Joint Activities. The contribution is predominantly for River Murray Operations and not Water Planning and Management as suggested in the Draft Inquiry Report.¹ This may have implications for ESCOSA's consideration of cost recovery and pricing options for SA Water.

This submission provides detailed information on the Joint Activities, including River Murray Operations assets, the funding arrangements, and costs. Further information is available on our website, and we would be happy to provide any additional information that may be of assistance to this Inquiry.

The Joint Activities – Background and Historical Context

The River Murray System encompasses the waterways and regulating structures of the River Murray in the southern Murray-Darling Basin. The rivers in the River Murray System pass through three jurisdictions, and management and use of the rivers in one jurisdiction can affect river flows, water availability and water quality elsewhere in the river system. For this reason there are advantages in collectively managing these rivers.

The River Murray Waters Agreement of 1914 (the Agreement) was the first formal agreement covering the collective management of the waters of the River Murray System. This Agreement allowed the River Murray to be managed and assets to be constructed to provide for water sharing between NSW, Victoria and South Australia. It set out agreed water shares for the River Murray, initiated the construction of jointly owned assets — dams, locks and weirs — for water storage, regulation and navigation, and enabled the joint management of the river for irrigation, municipal and industrial uses, and navigation.

The Agreement continued to develop over the next 70 years. In 1987, the first version of the Murray-Darling Basin Agreement (the MDB Agreement) was signed by the governments of the Commonwealth, New South Wales, Victoria and South Australia. It incorporated much of the previous Agreement, but also sought to address the emerging environmental problems of the Murray-Darling Basin, in particular salinity and land degradation, and established the Murray-Darling Basin Commission (the Commission).

Queensland and the Australian Capital Territory joined the MDB Agreement in 1996 and 1998 respectively. Whilst the MDB Agreement applied to all jurisdictions in the Basin, it remained heavily focussed on sharing the surface water resources of the River Murray System and on addressing the problem of salinity. It provided a vehicle for joint action for improved management of water and related natural resources where they are of Basin-wide significance.

¹ ESCOSA (2014), *Inquiry into Reform Options for SA Water's Drinking Water and Sewerage Prices- Draft Inquiry Report*, July 2014



In 2008, the Basin governments (also referred to as the partner governments) agreed to a new version of the MDB Agreement, which is set out as Schedule 1 to the *Water Act 2007* (Cth) (Water Act). The Water Act introduced a number of reforms and transferred the functions of the Commission to a new Murray-Darling Basin Authority (a Commonwealth statutory body established under the Water Act).

Despite the many changes and variations to the agreement over the years, the core elements, outlining the fundamental water sharing principles and arrangements between New South Wales, Victoria and South Australia have remained largely unchanged for a century.

Today's Joint Activities

The Joint Activities now include both River Murray Operations and a number of natural resource management programs which have evolved as a shared response to the need to manage some of the environmental consequences of water use in the Basin. Joint Activities in the River Murray System ensure:

- the delivery of state water shares to NSW, Victoria and South Australia
- the regulation of river flows to ensure the supply of water for irrigation and other consumptive uses, management of flood risks, and delivery of environmental flows
- the operation of water markets.

The MDB Agreement:

- sets out funding arrangements for the construction, operation and maintenance of works necessary to supply water and to maintain water levels for navigation.
- provides a vehicle for joint action for improved management of water and related natural resources where they are of Basin-wide significance and there is potential benefit from a collaborative or coordinated approach.

Under the MDB Agreement the MDBA manages the Joint Activities on behalf of the partner governments through an unincorporated joint venture.² The Joint Activities include:

- River Murray Operations (RMO). This is the largest of the Joint Activities, accounting for around two-thirds of the current Joint Activities budget. RMO includes the head office functions undertaken by the MDBA, and the day to day management undertaken by the State Constructing Authorities.
- The Living Murray program - coordinating the management of around 500GL of entitlements and the Living Murray environmental works and measures to achieve best environmental outcomes at 6 icon sites.
- Salinity management - achieving the Basin salinity target through the Basin Salinity Management Strategy

A number of other Joint Activities known as the natural resource management (NRM) programs are also overseen by the MDBA. Some of these relate directly to river operations (such as water quality management) while others relate more broadly to water resource management (for example the Murray-Darling Freshwater Research Centre, and monitoring and evaluation). Over the past few years the Ministerial Council has decided to end a number of programs – the Native Fish Strategy, the Sustainable Rivers Audit, and the Murray Lower Darling Rivers Indigenous Nations – as a result of reduced funding.

River Murray Operations (RMO)

RMO functions broadly include:

- Asset management - renewing and maintaining the suite of River Murray system assets; and

² MDBA functions related to Basin Planning are managed separately and are not discussed in this paper.

- River operations - the operation of the assets to deliver water shares and environmental outcomes in the River Murray system.
- accounting for interstate water trade – including adjustments of state shares to reflect interstate entitlement and allocation trades and audits of these trades. This function is critical to the integrity of the water market.

Specific RMO functions include:

- collaborative management by the MDBA with the State Constructing Authorities of Victoria, NSW and South Australia for the renewal and planned maintenance of the River Murray Operations assets
- operation of Salt Interception Schemes (SIS)
- construction, operation and maintenance of environmental works
- operation of the River Murray system assets
- implementing the sharing of River Murray waters as set out in the MDB Agreement
- ensuring the reliability of entitlement flows and allocations to jurisdictions
- management of River Murray unregulated flows to optimise environmental benefit
- undertaking annual environmental watering actions within the River Murray System
- addressing the impacts of river operations on foreshore lands at major storages and riparian health, particularly upstream of Yarrawonga
- cultural heritage programs, particularly at Lake Victoria
- hydrologic modelling
- running the hydrometric network. The hydrometric network is a series of gauges that measure flow and quality of water in the River Murray and Lower Darling systems. They provide real time data on river levels, flows, storages and water quality that are essential to the delivery of state water shares.

Overview of RMO Assets

RMO assets are the water storage and delivery assets through which state water shares are delivered. Other assets include locks and weirs, barrages, salinity mitigation schemes, river bank restoration and other management works. RMO assets also include a number of new environmental works built to enable the delivery of water under the Living Murray program.

The RMO assets remain under the ownership of the states in which they are located but are managed and operated collectively on behalf of the partner governments. Day to day management, operation, maintenance and renewal of the physical assets is undertaken by the SCA's of NSW, Victoria and South Australia, under the direction of the MDBA. The MDBA provides oversight of the whole program to ensure a consistent standard of asset maintenance and risk management across the program delivered by SCAs as well as providing head-office functions such as technical and modelling support, and coordinates and directs river operations to deliver water to users. The MDBA receives funding for RMO from the partner governments.

The SCAs are:

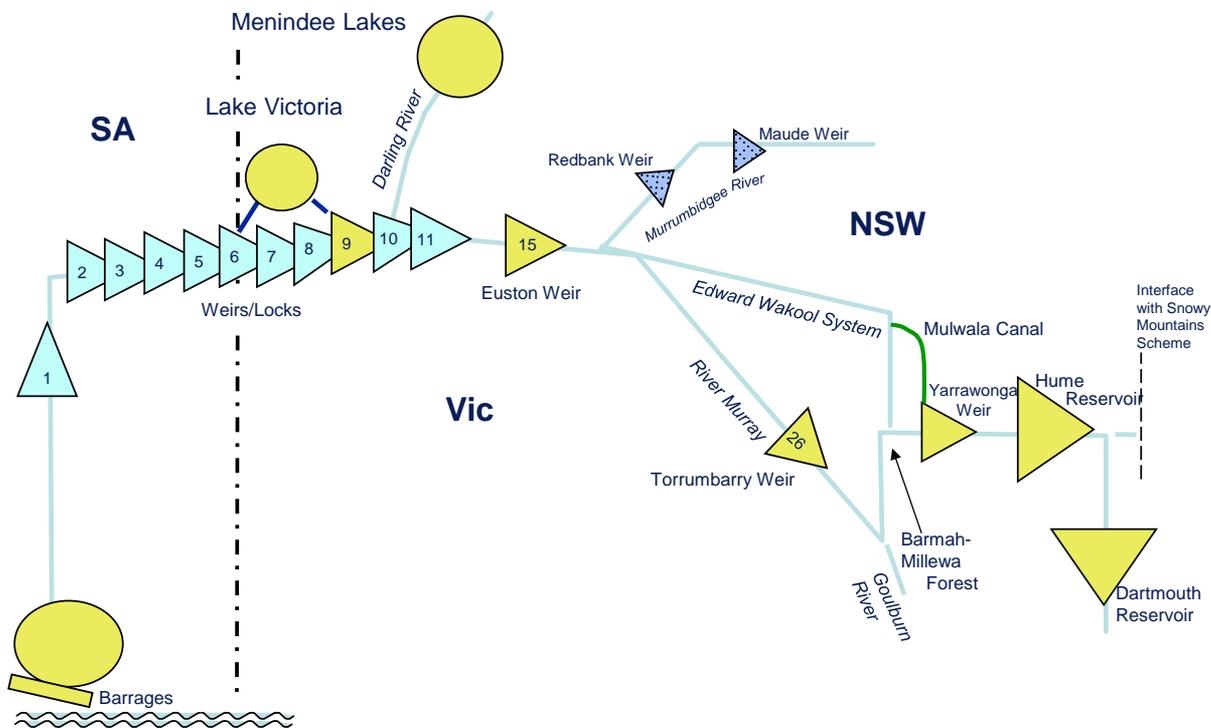
- New South Wales - State Water Corporation (and the NSW Office of Water)
- Victoria - Goulburn-Murray Water
- South Australia - SA Water, as agent for the Minister for the River Murray

As at June 2014, the RMO assets were valued at \$2.589 billion³, with a replacement cost of \$4.0 billion. The RMO assets are divided into four major categories:

- Category 1a: the major water storages upstream of Murrumbidgee Junction, which are essential to system wide water delivery management.
- Category 1b: the major water storages downstream of Murrumbidgee Junction, which are essential to system wide water delivery management.
- Category 2a: locks and weirs that provide local benefits rather than serving a whole of river function, where NSW and Victoria are the local beneficiaries.
- Category 2b: locks and weirs that provide local benefits rather than serving a whole of river function, where South Australia is the agreed local beneficiary.

An engineering view of the River Murray System, showing the RMO assets, is shown in Figure 1.

Figure 1: The River Murray System



Category 1 assets include:

- the key water assets required to share the waters of the River Murray between three states:
 - Dartmouth and Hume are the core storages on the River Murray System. Dartmouth is a long term carryover storage and drought reserve. Hume supplies water for irrigation, riparian use and town water supply, and in conjunction with other RMO assets supplies South Australia’s water entitlement.
 - Lake Victoria and Lock 9 provide en-route storage for the water supply to South Australia as well as salinity management and re-regulation of water released from Hume Dam. Menindee Lakes, leased from NSW, is also used for supplying water to South Australia. Both lake Victoria and Menindee Lakes help to reduce channel capacity constraints in the mid Murray during the peak irrigation season.

³ Indexed valuation based on independently assessed written down value in 2013-14 by SMEC Australia Pty Ltd.

- Yarrawonga is used to re-regulate freshes from the Ovens and Kiewa Rivers and to protect the Barmah-Millewa Forest from unseasonal flooding. It also supplies Mulwala Canal (the largest irrigation offtake) and the Yarrawonga Main Channel. Water from the Torrumbarry weir pool is diverted into both the National Channel (into Victoria) and the Koondrook-Perricoota Forest, a TLM Icon Site (now the second largest off-take in the River Murray System). Euston Weir (Lock 15) can be used (to some extent) as a mid-river storage and assist in alleviating channel capacity constraints, although it also has significant local benefits for irrigators and private diverters.
- the Barrages make up the remainder of the ‘Category 1’ suite of assets. They maintain a freshwater pool at the Murray Mouth, preventing salt water incursion into the River Murray and ensuring Adelaide’s water supply in times of drought. While the additional flows to be realised under the Basin Plan will improve the ability to avoid high salt loads in the Lower Lakes on average, the Barrages will still be required to maintain a freshwater pool from which water can be diverted in times of low flow (ie as an insurance asset).
- The hydrometric network is included as a category 1 asset.

Category 2 assets provide significant local benefits, and have historically been less important to the whole of river operation of the River Murray System. The 13 locks and weirs (from Echuca in northern Victoria to Blanchetown in South Australia) were built mainly to facilitate navigation but also provide weir pools for the delivery of water allocations to local irrigation networks, river pumpers and for stock and domestic use. The weir pools also support tourism and recreation activities, and are increasingly being used for the delivery of environmental water under the Basin Plan. Environmental works are being constructed which utilise the weir pools to provide environmental water to nearby environmental assets during regulated periods, so that watering can be achieved at appropriate frequencies without being dependent on flood flows.

Other RMO assets include:

- salt interception schemes (SIS) - consisting of bores, pumps, pipelines and salt disposal basins - built to address the impacts of rising river salinity as upstream diversions increased
- river bank restoration and other management works to address the range of impacts on the environment of changed flow regimes, including cultural heritage impacts
- under the Living Murray (TLM) program a number of environmental works have been built to deliver water to the TLM icon sites to address floodplain and wetland degradation. New water management structures – channels, regulators, weirs and levees - at Gunbower Forest, Koondrook-Perricoota Forest, Hattah Lakes, and the Chowilla Floodplain and Lindsay-Wallpolla Islands will enable large-scale watering of over 37,000ha of forests and wetlands. In addition, the Sea-to-Hume fishways will enable fish migration along 2,000km of the River Murray channel, allowing native species to migrate as a fish community rather than focusing on only one or two species of economic or social significance. The completion of the TLM environmental works in 2014-15 has increased the value of RMO assets by around 10 percent.

The Living Murray

The Living Murray (TLM) was established in 2002 in response to evidence of the declining health of the River Murray System. In November 2003 the Murray–Darling Basin Ministerial Council announced The Living Murray First Step Decision which called for the recovery of 500 Gigalitres (GL) of water to be used to protect and restore the environment. An environmental works program was also established to assist with environmental water delivery and optimise the environmental benefits from this water.

The focus of The Living Murray is to improve the environmental health at six ‘icon sites’ along the River Murray through the use of environmental water. These six highly valuable ecological and cultural sites icon sites are:



- Barmah–Millewa Forest
- Gunbower–Koondrook–Perricoota Forest
- Hattah Lakes
- Chowilla Floodplain, and Lindsay–Wallpolla Islands
- Lower Lakes, Coorong and Murray Mouth (LLCMM)
- River Murray channel.

The MDBA coordinates TLM activities on behalf of the partner governments (New South Wales, Victoria, South Australia and Commonwealth). These activities include planning and delivery of environmental water; construction and commissioning of environmental works; monitoring environmental watering outcomes; water modelling to support planning and decision making, and engagement with local and Aboriginal communities.

The Basin Salinity Management Strategy

The Basin Salinity Management Strategy (BSMS) provides a framework for communities and governments to work together to implement salinity control activities to protect assets and natural resource values across the Murray–Darling Basin. The strategy is coordinated by the MDBA and provides transparent accountability arrangements for partner governments. Its mandatory elements are incorporated into Schedule B of the Murray–Darling Basin Agreement.

A key outcome sought from the BSMS is to maintain the river salinity at Morgan South Australia at 800 EC ($\mu\text{S}/\text{cm}$) at least 95% of the time. This salinity outcome has been declared as essential to ensure water quality for all water users particularly in South Australia, and including the supply of good quality water to the city of Adelaide.

The partner governments have agreed to share responsibility for actions to meet the end-of-valley salinity targets at various valleys and the Basin salinity target at Morgan in South Australia. The MDBA is responsible for coordinating the BSMS under Schedule B of the MDB Agreement with responsibilities including:

- establishing and maintaining salinity registers to record salinity impacts and to allocate salinity credits and salinity debits to contracting governments
- monitoring, assessing, auditing and reporting on progress in implementing the strategy
- setting and reviewing salinity targets
- constructing and operating joint works and measures and coordinating other actions to reduce or limit the rate at which salinity increases in rivers, tributaries and landscapes within the Basin.

Funding for the BSMS coordination activities varies between \$1.6 and \$2.0 million per year excluding the operation and maintenance cost of salt interception infrastructure.

Other Joint Activities

The Murray Darling Freshwater Research Centre

The Murray Darling Freshwater Research Centre (MDFRC) was established in 1986 to conduct research into freshwater ecology. The MDFRC receives between \$2m and \$2.5m annually from Joint Program funds under an Agreement between CSIRO, LaTrobe University and the MDBA.

Monitoring and evaluation

The MDBA is responsible for monitoring under a number of programs on behalf of the partner governments:

- The Living Murray environmental monitoring program provides information on the responses to environmental watering, and the environmental condition of the icon sites and River Murray system. There are three types of monitoring conducted in partnership with the jurisdictions:
 - River Murray system-scale monitoring assesses the effectiveness of TLM activities on the overall health of the system. It includes floodplain tree condition assessments and annual aerial waterbird surveys.
 - Icon site condition monitoring provides information on the environmental condition of the icon sites including how the condition changes through time. This information is used to determine progress toward the ecological objectives of each icon site. Condition monitoring is focused on fish, waterbirds and vegetation consistent with icon site ecological objectives.
 - Intervention monitoring is designed to assess the ecological responses to The Living Murray watering and management actions. This provides a major link in understanding how specific environmental management actions result in changes at icon sites.
- The Sustainable Rivers Audit (SRA) provided baseline data on the ecological condition of the Basin by monitoring the ecological health of the Basin's 23 river valleys. The SRA was discontinued at the end of 2012-13 because of funding constraints.
- River Murray Water Quality Monitoring Program (WQMP) – this program periodically assesses water quality to provide information on the background condition of the River Murray. The MDBA works closely with state and local governments and natural resource managers on the WQMP, and has developed strong ties with scientific organisations and academic institutions through research partnerships. The maintenance of an effective and uniform water quality monitoring system for the River Murray is a statutory responsibility of the MDBA under the Agreement.

South Australian Water Access and Reliability

The MDB Agreement provides South Australia with access to some of the most secure water in the Murray-Darling Basin.

South Australia is entitled to receive flows of 1850 GL/year, which are comprised of 696 GL/year of dilution and loss entitlement, and 1154 GL/year of diversion entitlement. An additional dilution flow (ADF) of up to 1095 GL/year is also available under certain conditions when water is abundant, to reduce the salinity of water in the lower Murray. Often, the total flow to South Australia is unregulated, particularly in winter and spring, and in excess of these entitlements.

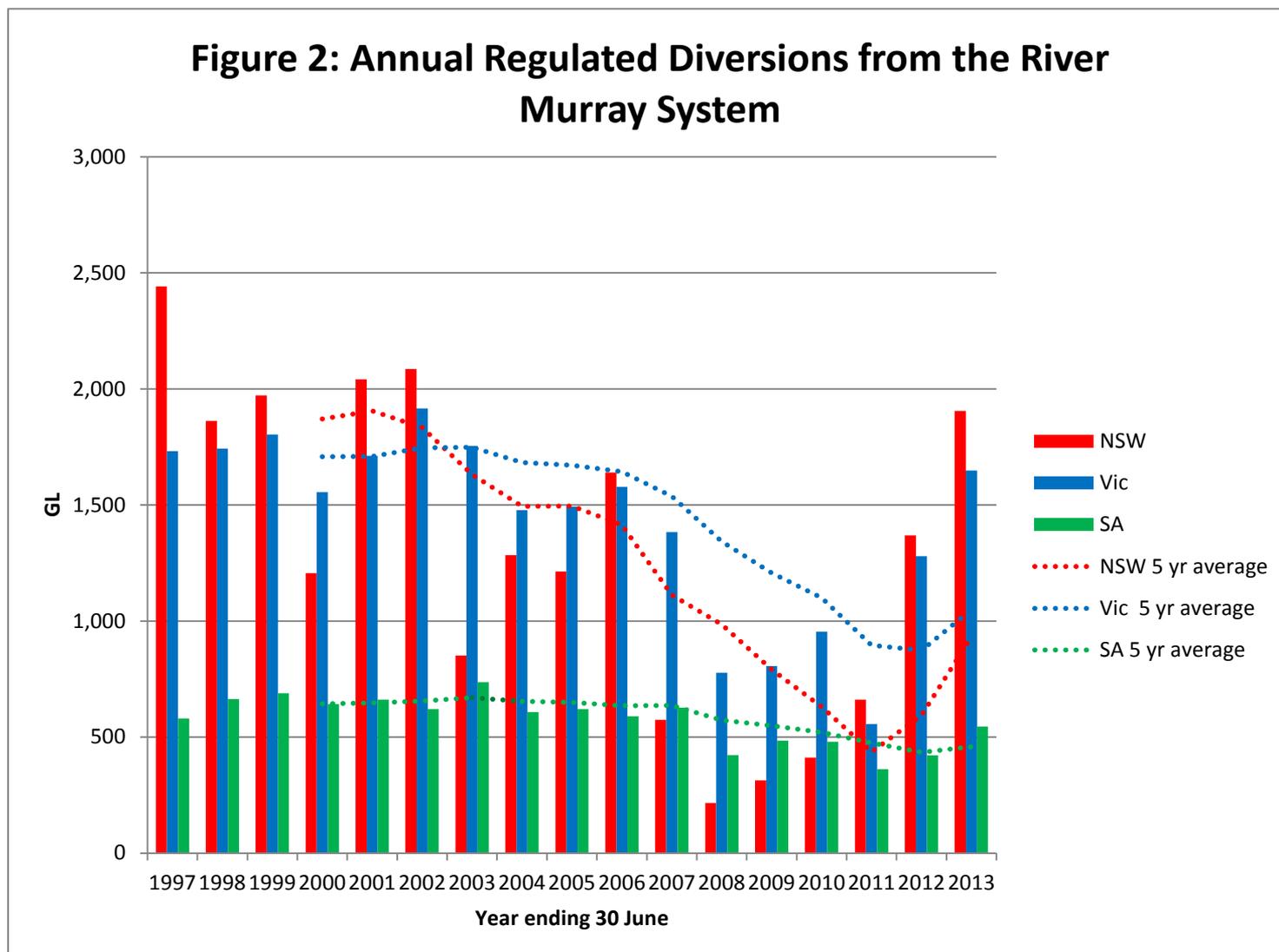
'Special accounting' provisions protect South Australia's share of the resource during periods when water availability and forecast reserves are low. Under these circumstances, South Australia is entitled (in simple terms) to a one-third share of the available shared resource, up to its diversion entitlement (in addition to its dilution and loss entitlement). In addition, during periods of extremely low water availability, Tier 2 and 3 water sharing arrangements (set out in the Basin Plan and the MDB Agreement) exist to reduce the risk that insufficient water will be available to meet and deliver critical human water needs to all three states. Accordingly, even when water is so scarce that no water is available for irrigation, South Australia should still receive its critical human water needs volume of 204 GL/year.

South Australia also has access to a Storage Right, which enables private carry-over and assists in the long-term management of critical human water needs.

Long-term usage by South Australia under these rules is capped by the MDB Agreement. Under the Basin Plan, the Cap will transition to the new SDL by 2019, however, in the interim the long-term Cap for South Australia is defined as:

- a total of 650 GL over any five-year period for urban water supply delivered to Metropolitan Adelaide and Associated Country Areas;
- 50 GL/year to supply water to Country Towns;
- 94.2 GL/year for the Lower Murray Swamps, part of which forms a non-tradable environmental entitlement; and
- a long-term average diversion for 'All Other Purposes' of Water from the River Murray (including stock, domestic, environmental, industrial and recreation entitlements) of 449.9 GL/year.

The form of South Australia's cap is unique. In particular, the Metro-Adelaide component is designed to provide a water supply with 99% security to a major urban city of over 1 million people. This allocation has been based on a 200-year simulation of the amount needed from the River Murray to supplement the primary source from the Mount Lofty Ranges. Actual demand from the River Murray varies from between about 20 GL (or 10% of Adelaide's needs) to about 190 GL (or about 95% of demand). Unlike an irrigation-driven demand pattern, under which diversions would typically increase with allocations (as inflows increase), South Australia's diversions from the Murray are driven by urban demand and peak when it is dry in the Mount Lofty Ranges (which may also coincide with low inflows to the River Murray System).



Combined, all of the above provide South Australia with a very high reliability of supply. Figure 2 illustrates that, whilst on average less is diverted each year in South Australia than in the upstream States, the high reliability has been

maintained regardless of inflows. In fact, in a number of years during the severe drought from 2006 to 2010, South Australia diverted more water from the River Murray than NSW did.

The Costs of the Joint Activities

The programs funded through the Joint Activities and the budgets provided for each program through the MDBA in 2013/14 are shown in Figure 3.

The benefits of the Joint Activities

The Joint Activities provide a number of benefits to industries and communities within the Basin. Some of these are direct benefits while others are indirect. For example:

- Employment - RMO provides employment for around 150 full time employees in the State Constructing Authorities and state agencies in regional areas, primarily at Dartmouth, Albury, Menindee, Mildura, Berri and Goolwa. The other components of the Joint Activities such as TLM, indigenous engagement, native fish demonstration reaches and scientific research also support regionally-based staff – such as the 47 staff employed by the Murray-Darling Freshwater Research Council (32 in Wodonga and 15 in Mildura).
- Water supplies - water supplied through RMO has enabled the development of an extensive irrigated agricultural sector. In 2011-12 the gross value of irrigated agricultural production (GVIAP) in the Basin was \$6.7 billion. RMO also underpins the water markets in which, for example, \$13 billion of entitlements and \$6 billion in allocations were traded in 2012-13.⁴
- Human water needs - there are around 1.6 million people (including 1.2 million in Adelaide) dependent on water supply from the River Murray System for normal household, municipal and industrial use. Special arrangements have been agreed to reduce risks to the provision of Critical Human Water Needs under extremely dry conditions (discussed earlier in this submission).
- Environmental outcomes – environmental flows delivered through the Living Murray (TLM) program have opened up 2,000 km of river channel to native fish movement.⁵ Some of these flows are diverted to more than 276,000 hectares of environmental assets and wetlands such as the Barmah-Millewa, Gunbower, Koondrook, Hattah Lakes, Chowilla, and the Lower Lakes, Coorong and Murray Mouth. Environmental flows also assist with maintaining a connection between river channels and floodplains, support the lifecycles of many species of native fish and birds, and improve water quality through increased dilution flows.
- Recreation and tourism – significant boating and fishing occurs along the River Murray System, including the use of weir pools and lakes. Some 11,000 vessels (around 65,000 people through 7,500 lock operations) used the locks in 2012-13.

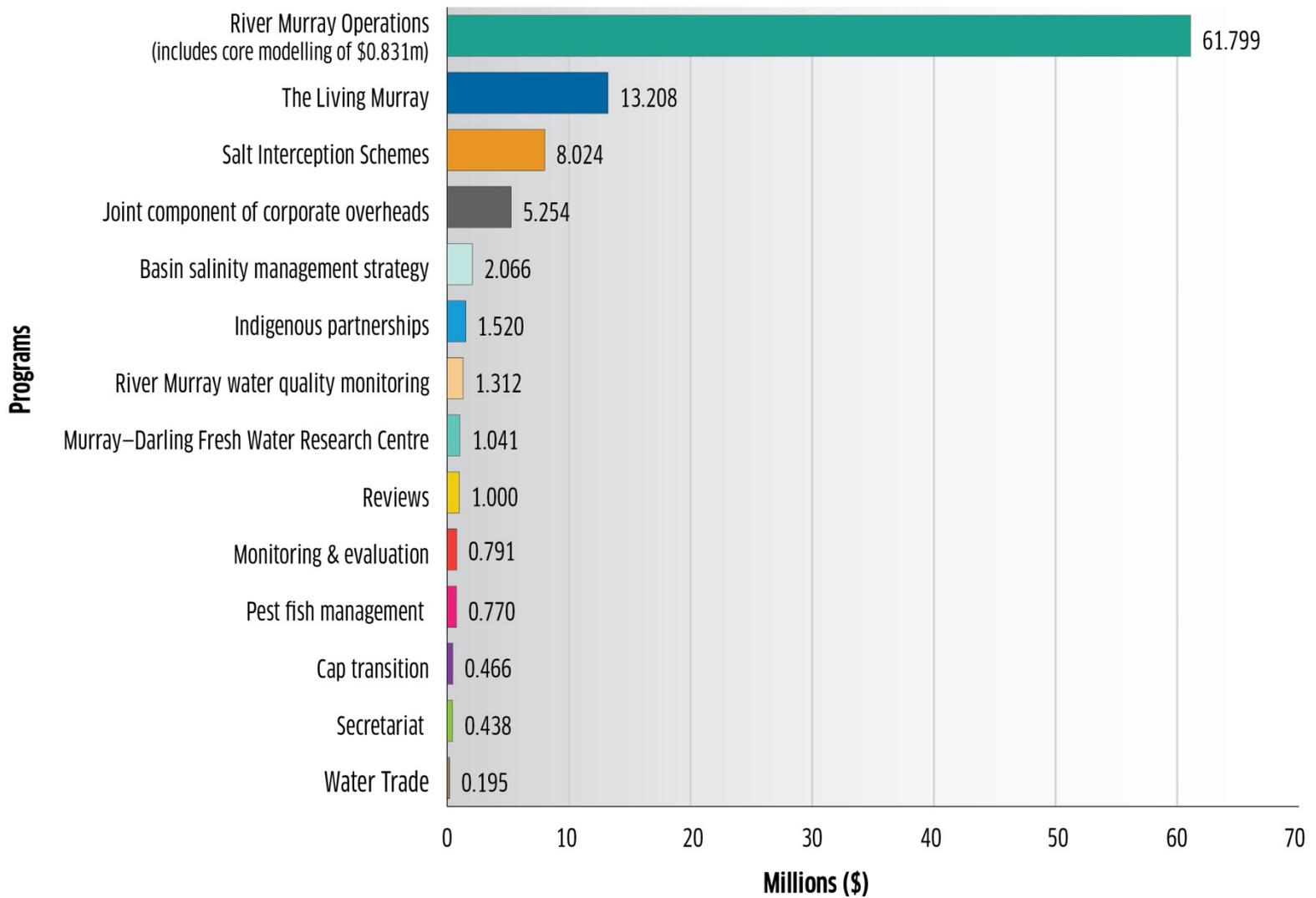
The direct spending on RMO, including the maintenance and operation of the SIS, is shown in Figure 4. Some 90 per cent of the RMO costs are spent by the three states through their SCA's. In 2013-14 almost \$30 million of the RMO budget was spent in South Australia through SA Water. This does not include expenditure on NRM activities nor does it include the indirect benefits to South Australia from water supplies for agricultural or municipal use, from improved water quality, or from recreational uses of locks and weirs. The combined benefits to South Australia from Joint Activities significantly exceed its contribution.

⁴ NWC (2013), *Australian water markets report 2012-13*, December 2013 (chapter 3)

⁵ Other environmental flows are delivered by environmental water holders such as the Commonwealth Environmental Water Holder (CEWH) and State environmental water holders to meet environmental watering requirements across the MDB. These activities are not part of the Joint Activities.

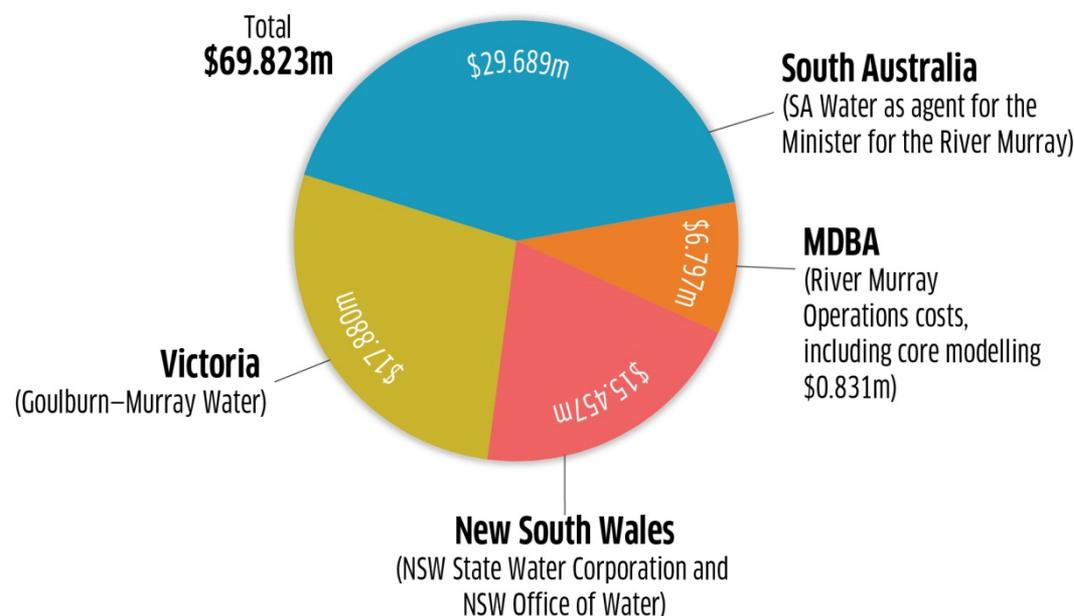
Figure 3: 2013–14 Joint Activities budget (\$m)^a

Total \$97.884m



^a the budget for 2013-14 included contributions of \$91.144m plus use of underspends from previous years, interest income and other minor sources of income.

Figure 4: Expenditure by state – River Murray operations and SIS 2013–14 (\$m)



How the Costs of Joint Activities are shared

Funding

The Joint Activities are funded collectively by the partner governments. The process by which the budget for the joint activities is determined is highly complex.

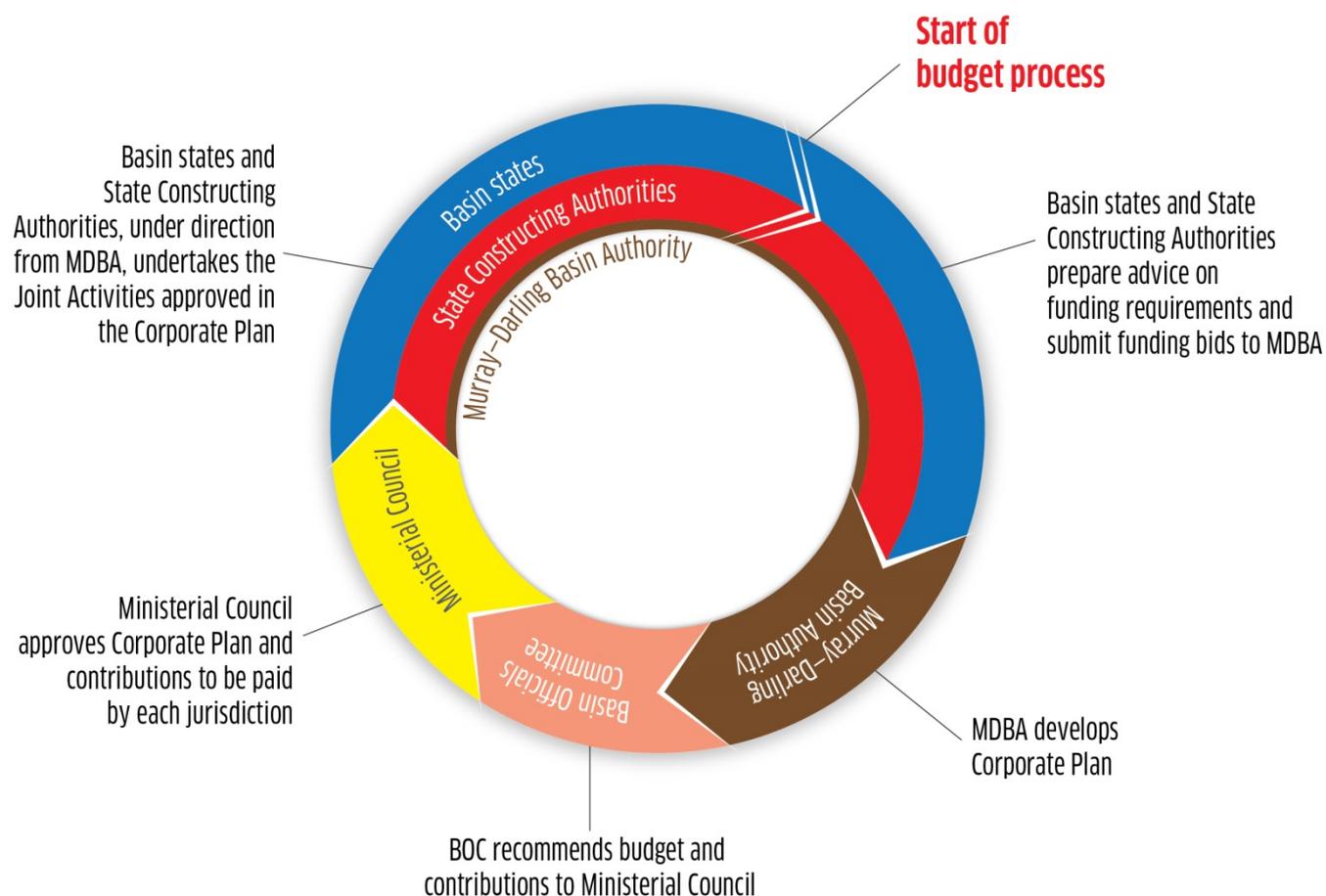
To determine the annual budget for River Murray Operations, the SCAs advise the MDBA of the recommended construction, operation and maintenance activities for the coming year based on an Asset Management Plan agreed to by the Ministerial Council. The MDBA then prepares a draft budget which outlines the four year budget (annual plus three out-years) for Joint Activities. The draft budget is incorporated into the MDBA Corporate Plan.

A similar process is followed for the funding of NRM activities. In conjunction with advice from the MDBA, the states determine which activities are required for the coming year for each program, and how these activities should be delivered. A budget is then prepared as part of the MDBA Corporate Plan and is approved by the Ministerial Council.

Basin Ministers, through the MDB Ministerial Council agree the amounts to be contributed by each partner government and authorise this funding and the activities to be undertaken by approving the Corporate Plan. The MDBA then funds the Joint Activities to be undertaken by SCAs and State agencies through the Joint Program budget. This process is summarised in figure 5.

The services provided by the SCAs for on-ground operation of the RMO assets are at cost to the joint venture. The SCAs generally procure significant components of work via the open market to allow competition and ensure cost efficiency and effectiveness. The efficiency of such arrangements has been previously tested by the Cost Efficiency and Effectiveness Review in August 2006 and the Report for Benchmarking of River Murray Water Operations in December 2007, both of which were independent assessments undertaken for the Murray-Darling Basin Commission. Another independent review of the efficiency of RMO, using the methodology of the Water Charge Infrastructure Rules, is currently underway and will be completed by February 2015.

Figure 5: Joint Activities planning cycle



Cost shares

The agreed budget for the Joint Activities is shared between the partner governments according to agreed cost shares.

The 1915 River Murray Waters Agreement contained relatively simple cost sharing arrangements between the Australian Government and the states of New South Wales, Victoria and South Australia. The four governments agreed to share the costs of investigation and construction of the works equally. The subsequent costs of operation and maintenance of the assets would be shared equally between the three states.

In the early 1950s an administration function was established for the River Murray Commission to direct the operation of the River Murray. The four governments agreed to share the cost of administration equally.

In 1998, in response to the 1994 COAG water reforms, the Ministerial Council agreed to the basis of the current RMO cost sharing arrangements that reflect a combination of a “user (or impactor) pays” principle and a “shared responsibility” approach:

- the Australian Government continued to meet one quarter of the cost of investigations and construction costs (I&C) and MDBA administration
- the balance of I&C costs are met by the states

- operations and maintenance (O&M) costs are met by the States in proportions that take account of the cap equivalent of Murray Valley entitlements in each State, the five year average water use in the Murray Valley by each State, the share of local beneficiary for locks and weirs, and equal shares for salt interception, environmental works and Murray Mouth dredging.

The cost shares derived from these rules have been relatively stable, although minor changes may occur due to the changes in volumes of water diverted or in the program mix. The principle that the Commonwealth contributes a share of I&C and administration costs, but makes no contribution to O&M costs for RMO, is longstanding and remains to this day.

In 2006, drought changed the relative use of water by the states, and there was a change in the program mix, which resulted in the cost shares between states being revised. Also in 2006, the Australian Government invested \$500 million into the former Murray-Darling Basin Commission, to:

- progress major construction activities such as navigable passes, fishways, salt interception schemes, and investigations for the dam improvement program without further calls on jurisdictions
- expand the TLM Environmental Works and Measures Program
- accelerate water recovery measures under TLM (notionally \$200 m)

In return, Basin governments agreed to continue their 2006-2007 funding commitment in real terms for the following four years. The review of cost shares undertaken in February 2006 used the principles outlined above, and determined that the appropriate cost shares between states in 2006-07 for operating and maintenance costs were NSW 38%; Victoria 35% and South Australia 27%.

In 2009, governments extended the cost shares that were agreed in 2006 for a further three years, from 2011-12 to 2014-15. As cost shares have been fixed until 2014-15, final cost sharing arrangements are yet to be confirmed for the TLM environmental works which are gradually coming on-line. To date any costs for operation and maintenance of environmental regulators have been incorporated into the total cost of the nearest asset (generally a lock and weir).⁶

Cost shares for NRM programs

The costs of the NRM joint activities are shared between all the partner governments. After allowing for contributions from Queensland and ACT (which were typically negotiated based on relevant interest by each jurisdiction in the various NRM programs), the cost of NRM programs are shared equally between the Australian Government, NSW, Victoria and South Australia.

Reviewing the cost shares

Under the Murray–Darling Basin Agreement, the cost shares for Joint Activities must be reviewed every five years. The most recent review was completed in April 2014.

The 2014 Review found that the cost share arrangements for RMO are broadly appropriate and are consistent with NWI pricing principles. The Review noted that while expenditure on some assets does provide local benefits (such as recreational and employment benefits), the fact that a benefit is recognised at a given location does not mean it does not also provide system wide benefits. While river structures operate at specific locations along the rivers, they are part of a complex set of assets which collectively deliver water entitlements and address environmental outcomes Basin-wide.

The Review acknowledged that it is appropriate for upstream users to contribute to the costs of downstream assets and vice versa, because the assets collectively deliver State water shares to the three states and allow diversions for

⁶ Note that, as the main purpose of the Barmah-Millewa forest regulators is to minimise losses, they are considered essential to river operations, and a Category 1 asset.

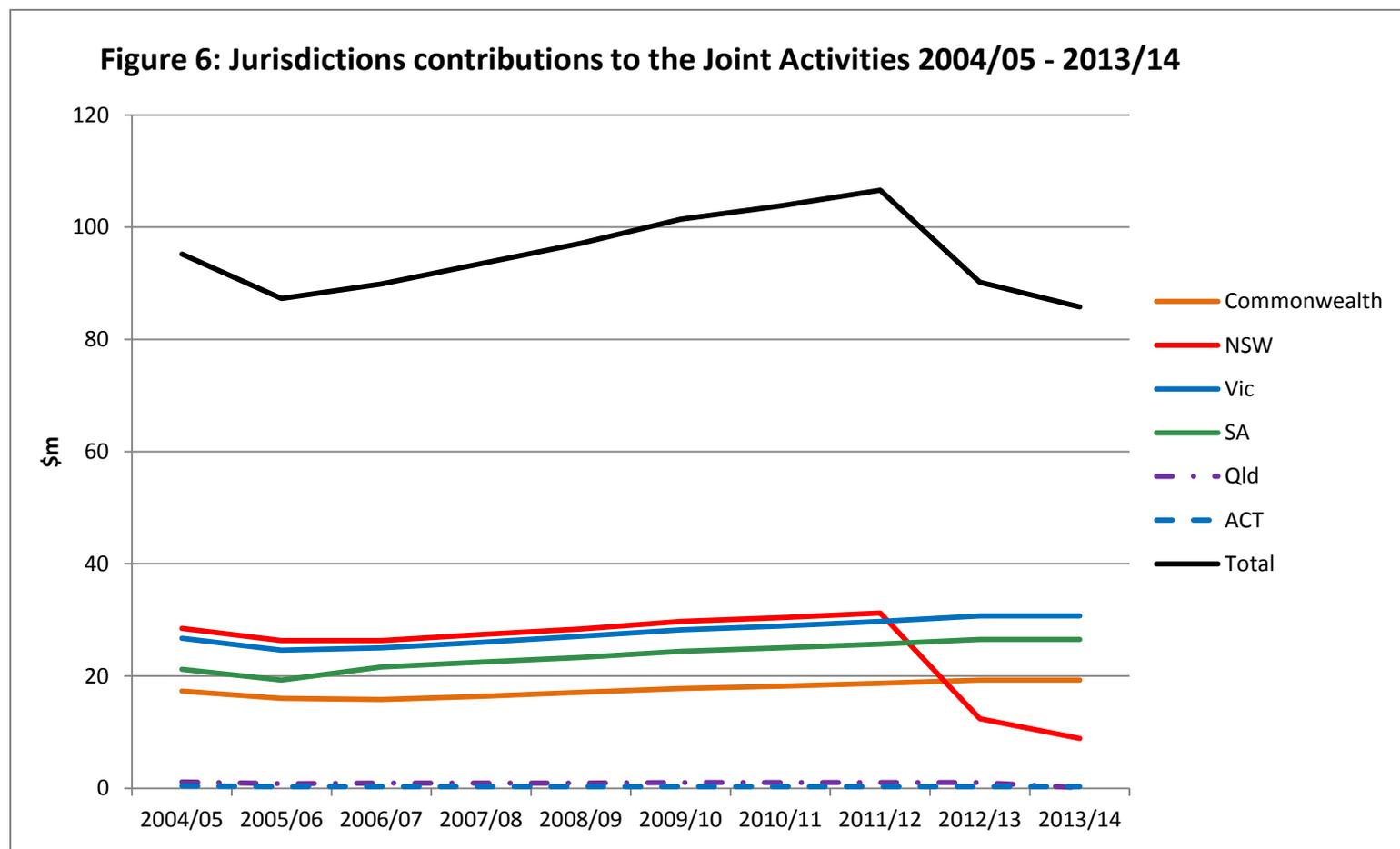
irrigation and other consumptive use to be higher than they otherwise would be without an unacceptable deterioration in water quality.

The Review concluded that cost shares for RMO should be based on the contribution of assets to the delivery of 'system wide' benefits, rather than whether they provide local benefits.

For NRM activities, the Review argued that there could be merit in adopting a more flexible basis to cost sharing. It recommended that these activities be developed on an opt-in basis, where each jurisdiction assesses its interest in and capacity to support the program.

Contributions by partner governments

Figure 6 shows that total funding to the Joint Activities has fluctuated significantly over the last ten years, from a high of almost \$107 million in 2011-12 down to slightly less than \$86 million in 2013-14. The reduction of the total budget since 2012-13 has been driven by funding constraints, which has led to activities being either scaled back or discontinued. South Australia's contribution increased from \$21.2 million in 2004-05 to \$26.5 million in 2013-14, but has been reduced to \$15.5 million in 2014-15.



The charts below show the contribution of each state to all of the joint activities, relative to cap entitlement (Figure 7) and regulated diversions (Figure 8). They show that South Australia pays a premium rate for the water it is entitled to under the Cap, but in return receives certainty and high security (even in severe drought), which is essential for its large urban customer base. Given that the need for such high security is driven primarily by the urban demand, if South Australia's contribution to the Joint Activities costs is to be recovered from South Australian consumers, it could be argued that urban water users should pay a higher rate than rural water users.

Figure 7: Trend in rate of contribution to Joint Activities by each State, relative to its Cap entitlement

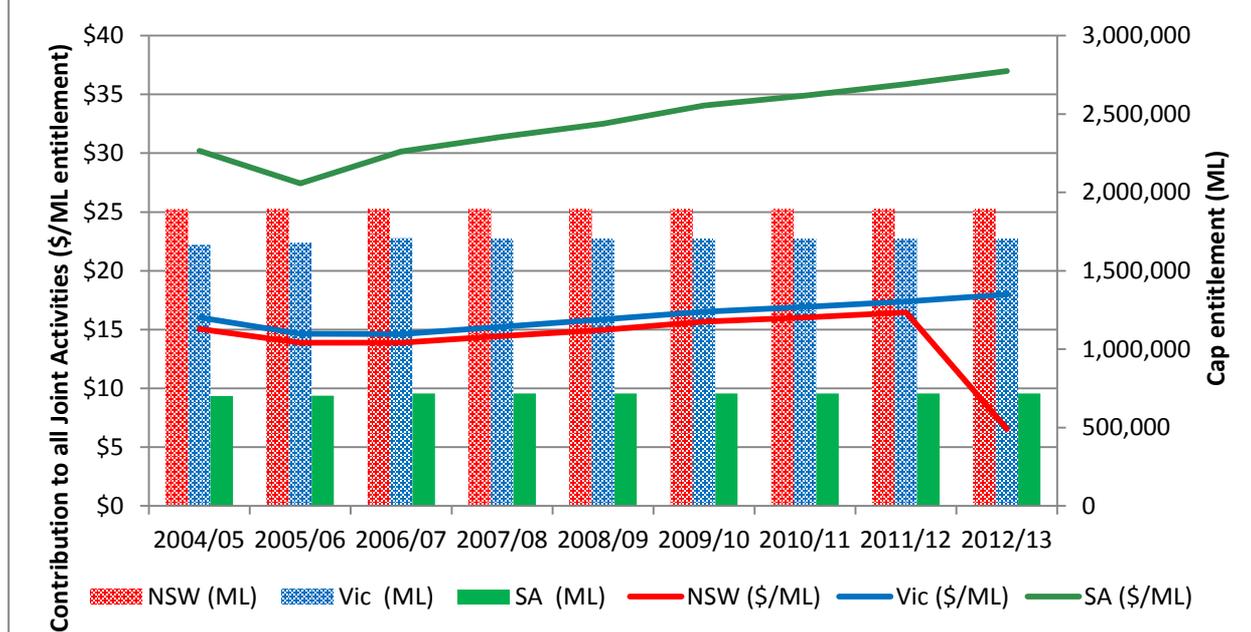
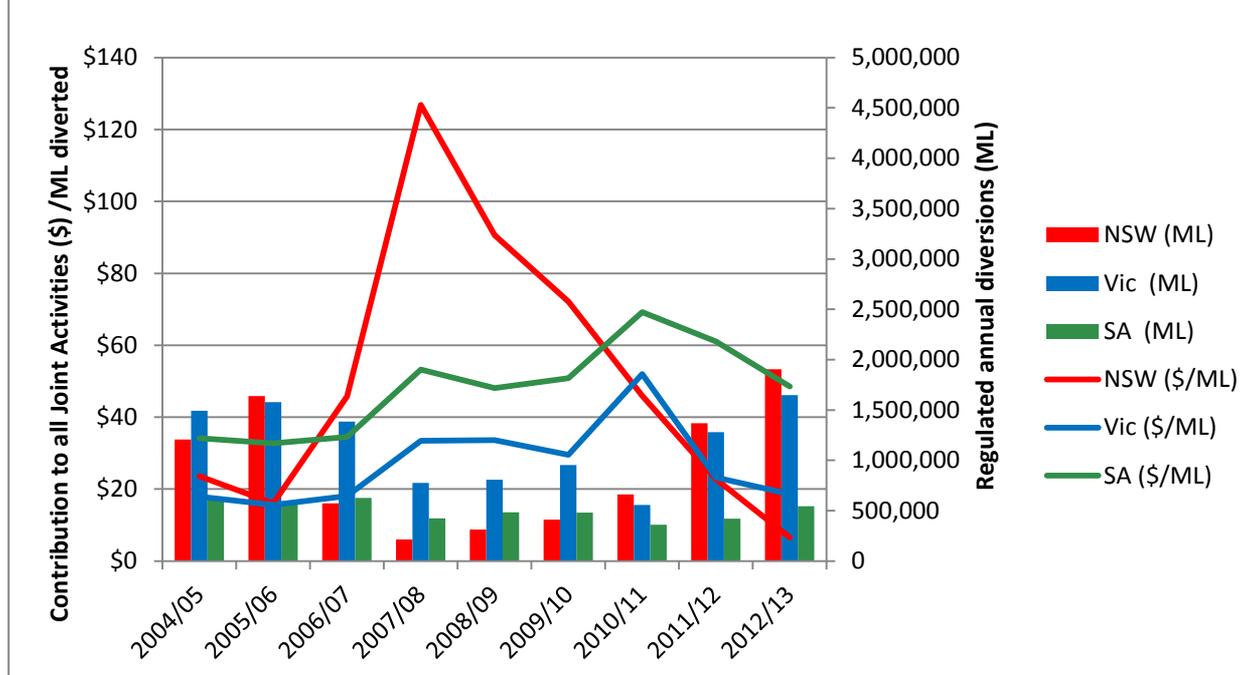


Figure 8: Trend in rate of contribution to Joint Activities by each State, relative to its annual regulated diversions



Principles for passing through MDBA costs

The COAG Water Reform Framework of 1994 established the principles of consumption based pricing, full cost recovery, and elimination of cross subsidies between water users. The 2004 National Water Initiative (NWI) reaffirmed the commitment to the principles of user pays and pricing transparency for water storage and delivery, and cost recovery

for water planning and management. The NWI principles were extended in 2010 and are now embodied in the Water Act through the Water Charge (Infrastructure) Rules (WCIR) and the Water Charge (Planning and Management) Rules (WCPMIR).

Water Charge (Infrastructure) Rules (2010)

The Water Charge (Infrastructure) Rules (WCIR) regulate fees and charges that can be levied by irrigation infrastructure operators (IIOs) and bulk water operators. There are three tiers of WCIR depending on the ownership and size of irrigation operator:

- Tier 1 rules are light handed regulation and apply to all irrigation operators in the Basin. Under Tier 1, all operators are required to publish their regulated water charges, with additional requirements on operators that provide over 10GL of water from managed water sources
- Tier 2 rules apply to large member-owned and medium sized non-member owned infrastructure operators.⁷
- Tier 3 operators are required to have their prices approved (determined) by the ACCC or accredited State Pricing Regulator (SPR). The tier 3 rules apply to Goulburn-Murray Water, Lower Murray Water, and State Water.

The MDBA is not regulated under the WCIR. RMO does not have direct customers – it delivers bulk water shares to the states, and is funded through the system of contributions from partner governments rather than through user charges to customers. The delivery of water supplies to customers - agricultural, municipal and other water users in the Basin - is undertaken by the SCAs and other bulk water operators, and does not form part of RMO. The SCAs of NSW (State Water) and Victoria (Goulburn Murray Water), in their capacity as bulk water operators, do levy charges and can therefore be regulated under the WCIR. State governments are able to recover a component of their contribution to the MDBA for RMO through cost recovery arrangements for bulk water – effectively making the state contribution to RMO a part of the SCAs cost base.

Despite the full cost recovery principles of the WCIR, the approach to cost recovery, and the level of recovery of RMO costs, varies considerably between jurisdictions:

- In NSW, State Water cost recovers some of its contribution to RMO from irrigators and passes these revenues 'through' NSW Treasury to the MDBA.
- Victoria cost recovers from irrigators but funds are paid to the Victorian government which then pays MDBA out of consolidated revenue – there is no direct link between costs to irrigators and their use of RMO services.
- In South Australia, the bulk water operations of SA Water are not currently regulated by ESCOSA. As such, SA Water is not subject to the WCIR and MDBA costs are not included in SA Water charges for cost recovery purposes. South Australia does apply some of its River Murray levy income to meet some of its contributions to the MDBA, but the levy is applied to all water users and is not a cost recovery charge within the meaning of the WCIR.

Water Charge Planning and Management (Information) Rules (2010)

Water planning and management (WPM) are activities taken to ensure long term sustainability of water resources by balancing consumptive and non-consumptive uses of water (economic, environmental and public benefit outcomes), managing externalities, providing clear mechanisms for allocating rights to water, and addressing over-allocation and over-use. The pricing and cost recovery principles under the WCPMIR include:

- *Principle 3 – cost effectiveness test:* WPM activities should be tested for cost effectiveness by independent third parties. The results of these tests are to be made public

⁷ For example, Central Irrigation Trust (CIT), Coleambally Irrigation Co-operative Ltd (CICL), Murray Irrigation Ltd (MIL)

- *Principle 4 - Cost allocation:* costs are to be allocated between water users and governments using an impactor-pays approach
- *Principle 5 – differentiation of costs:* WPM costs are to be differentiated by catchment, valley or region, and by water source where practicable
- *Principle 6 - Community Service Obligation (CSOs):* jurisdictions should aim to reduce or eliminate CSOs. Shortfalls between the revenue required for full cost recovery, and actual costs recovered through water charges, should be made public

The WCPMIR require the jurisdictions to provide information on WPM charges, who determines the charge, which water users the charge is applied to, the activities associated with the charges, and the relationship between the charge and the relevant activities (costs). WPM activities should be assessed for cost effectiveness and their costs allocated according to the principle of impactor pays.

MDBA costs

The Joint Activities managed by the MDBA on behalf of the partner governments involve the management and operation of a significant infrastructure network that underpins the delivery of state water shares from the River Murray System, the operation of water markets that are critical to the Basin's irrigated agriculture sector, and the management of a number of NRM programs that protect ecosystem functions and other environmental values in the Basin.

The costs of the Joint Activities managed by the MDBA were described earlier in this submission. The current practice is for RMO costs to be 'passed through' by pricing regulators in their assessment of applications for price determinations by SCAs.

The MDBA is not regulated under the WCIR because of the way in which the Joint Activities and the MDBA are funded through contributions from partner governments, and because RMO is a service provider to the partner governments for the delivery of state water shares rather than a direct supplier of water to irrigators or other water users. For this reason the MDBA is not required to report costs or demonstrate its asset base is efficient and prudent in accordance with the WCIR. Nor is it required to adopt the WCPMIR for the NRM-joint activities.

Nevertheless, the Ministerial Council does commission regular efficiency assessments of the RMO business as part of its commitment to transparency. A 2007 review concluded that RMO efficiency was comparable with similar businesses in the water infrastructure sector. A new review is currently underway that will apply the building blocks and efficiency methodology specified in the WCIR to RMO to assess the RMOs cost efficiency and prudence. This review will be completed in February 2015 and will enable direct comparison of the costs of RMO with other bulk water operators and provide an independent and transparent estimate of the costs of RMO. It is intended to conduct such a review every five years and to report the results on the MDBA website.

Summary

The Joint Activities are overseen and managed by the MDBA on behalf of the partner governments in accordance with the MDB Agreement. RMO – the operation and maintenance of the infrastructure assets - is by far the largest component of the Joint Activities. It enables the delivery of state water shares, underpins the operation of the water market in the Basin, and provides critical input to the management of salinity and water quality, and environmental objectives. Some RMO assets – in particular the weirs – also provide recreational opportunities for communities in the Basin. Other joint activities known as the NRM programs, while significantly smaller than RMO in funding terms, also play a key role in protecting water quality, managing salinity, and maintaining ecosystem functions.

ESCOSA's draft report characterises South Australia's contribution to the Joint Activities as a WPM charge (see s 9.1.4). This submission has sought to clarify that the bulk of South Australia's contribution to the MDBA is not a WPM charge - it is a payment towards RMO. It has been shown that RMO is critical for the supply of water to South Australia for both rural and urban users, and for the maintenance of water quality in the South Australian part of the River Murray System. The reliability of the water supplied to urban users in South Australia is extremely high.

ESCOSA's draft report also comments that there is 'no current formal process for the independent review of the efficiency or prudence of these costs' (s 9.1.1). However, the NWI and the Water Charge Rules do provide an agreed framework for an independent assessment of efficiency and prudence of infrastructure assets as well as cost effectiveness and cost allocation principles for WPM activities.

The Water Charge Infrastructure Rules (WCIR) provide an appropriate set of pricing principles for SA Water bulk water and its treatment of MDBA costs. Under the WCIR and WCPMIR the costs of RMO could, should South Australia choose, be included in the cost base of SA Water for the purposes of cost recovering the South Australian contribution to Joint Activities from both urban and rural water users. Regulating SA Water in accordance with the WCIR and WCPMIR would improve consistency with the NWI and assist in meeting efficiency and prudence objectives. It is noted however, that as ESCOSA does not currently regulate SA Water's rural and bulk water operations there may be issues of equity if there are different approaches to the recovery of RMO costs between SA Water's rural and urban customers.