
9 Institutional and governance issues

Key points

- Governance arrangements for the recovery and management of environmental water in the Murray-Darling Basin are fragmented between government agencies at the local, state and Commonwealth level.
- The referral of state powers to the Murray-Darling Basin Authority should improve coordination in water planning, by setting targets for water recovery, and requiring that all entities manage their Basin water resources in accordance with water plans accredited under the Basin Plan. Environmental water recovery and its management will continue to be conducted by multiple parties.
- In the short term, while the Commonwealth Environmental Water Holder's (the CEWH's) portfolio of water entitlements is being established, the CEWH should have the appropriate budgetary resources to purchase additional water products that allow it to best meet its immediate environmental objectives.
- Transparency and accountability in environmental water recovery under the Restoring the Balance (RTB) program would be improved by providing clear and public information summarising the existing provisions for environmental water in each catchment, and clarifying how RTB purchases take into account environmental water recovered under the Sustainable Rural Water Use and Infrastructure (SRWUI) program, and environmental water provisions in state water sharing plans.
- The CEWH is establishing institutional arrangements to coordinate its actions with state and local environmental water managers. Where an effective and accountable local environmental water manager exists, and there are no significant spillovers from water use, the CEWH should delegate use of an appropriate quantity of its environmental water to that manager, and require the manager to coordinate the use of Commonwealth water with other inputs that best achieve agreed outcomes.
- Recovering water is not always sufficient to achieve desired environmental outcomes. Other inputs, such as capital works to direct environmental flows, and changes to land management practices, are also required. Mechanisms for coordinating these inputs are limited.

Currently, many different government agencies are involved in the recovery and management of environmental water. This is partly a reflection of the distribution of powers between the states and the Commonwealth and the fact that the Basin crosses several state borders. In addition, non-government organisations and private

individuals may be involved in environmental water recovery and use. Many of these organisations are interdependent, and hence mechanisms may be needed to ensure the achievement of common environmental objectives, and the reconciliation of competing environmental objectives.

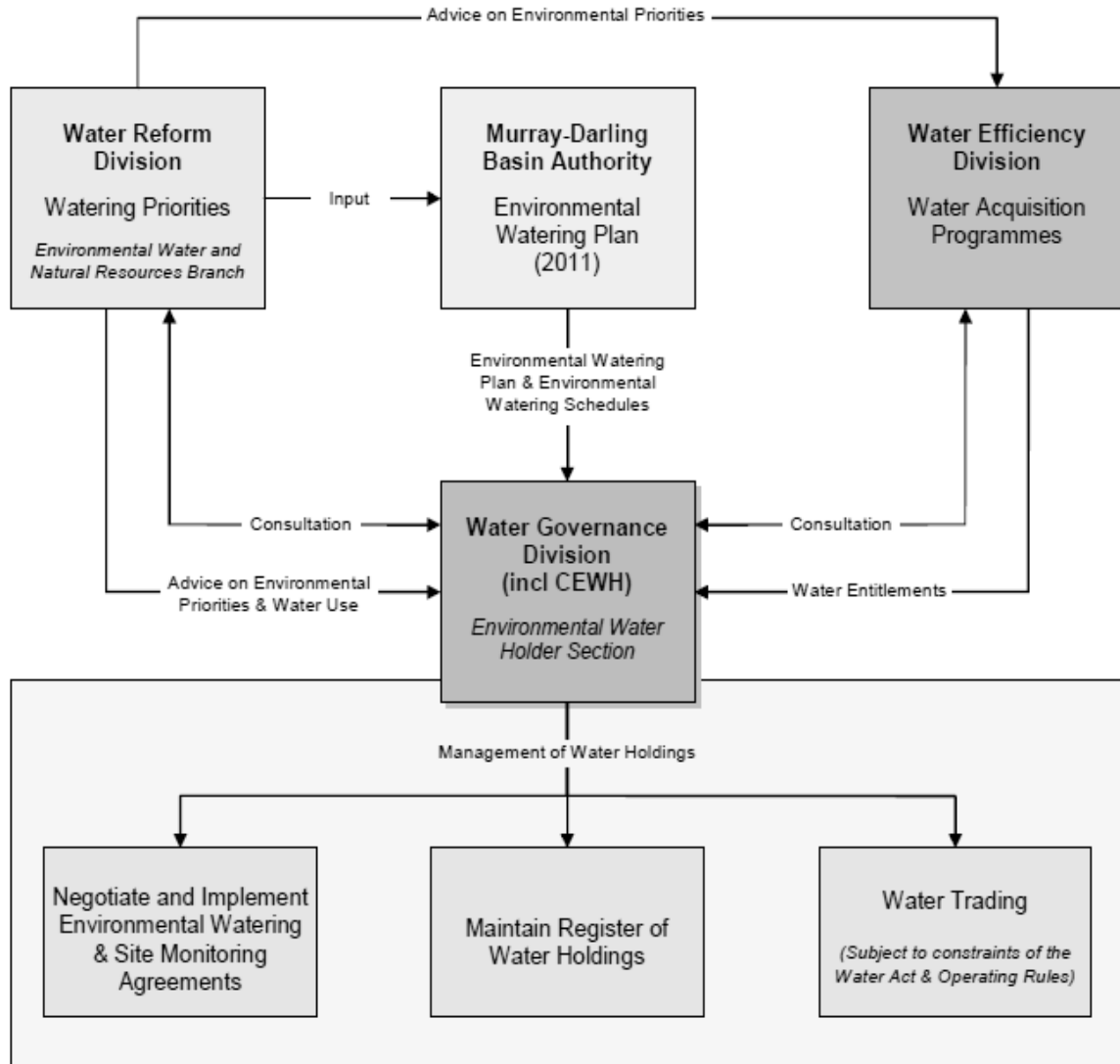
9.1 Who is involved in managing water resources?

Market failures associated with water use can be profound and often warrant government intervention. But the interconnected nature of the Basin and the number of jurisdictions involved, have meant a complex set of institutions, entities and arrangements have developed, which in turn create other problems. In the context of this study, some organisations are involved in recovering water, others are responsible for achieving environmental outcomes, primarily through the use of water, and some undertake both functions.

At the Commonwealth level, the key players relevant to this study all come under the Minister for Climate Change and Water (figure 9.1):

- The Water Efficiency Division (WED) of the Department of the Environment, Water, Heritage and the Arts (DEWHA), which is recovering water through the two programs discussed extensively in this report, Restoring the Balance (RTB) and Sustainable Rural Water Use and Infrastructure (SRWUI).
- The Commonwealth Environmental Water Holder (CEWH), which is a semi-independent statutory entity created under the *Water Act 2007* (Cwlth), tasked with the ongoing management of the Australian Government's environmental water holdings (the CEWH is housed within DEWHA). Water entitlements acquired by the WED are passed to the CEWH for management. The CEWH has powers to buy and sell water products and can enter into contracts with other parties for the cooperative use of its water holdings and the undertaking of infrastructure work that might be needed to use that water (such as a pumping station or earthworks).
- The Murray-Darling Basin Authority (MDBA), a statutory authority created under the *Water Act 2007* (Cwlth) that is responsible for the development, implementation and monitoring of the Basin Plan. While its primary responsibility is in allocating water through the Basin Plan, it has also been involved in water recovery in fulfilling the Commonwealth's part of the Living Murray Initiative (for example, it conducted a tender to purchase water entitlements).

Figure 9.1 Key Commonwealth water governance arrangements



Source: DEWHA (2008a).

At a state and local level, relevant organisations or entities include:

- Departments of water and other agencies that oversee the allocation of water within the state and set and enforce property rights. Under the National Water Initiative (NWI), Basin jurisdictions have been implementing water sharing plans that, to varying degrees, specify environmental objectives and set aside statutory environmental water to meet those objectives. Statutory environmental water can be in the form of rules-based water, such as a minimum-flow regime, or held as water entitlements.

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- Irrigation infrastructure operators, who in managing the water allocated to them may be required to achieve certain environmental objectives, such as maintaining minimum flow requirements.
 - Environmental managers, which can include catchment management authorities, state government wetlands and rivers conservation officers and the like, that are responsible for managing (but rarely acquiring) environmental water at a local catchment level under a water sharing plan.
 - Water purchasing entities such as Riverbank in New South Wales and SA Water in South Australia, that then hand the water over to other agencies for management.

And in between, other federal organisations or arrangements include:

- Water for Rivers, a public company established by the Commonwealth, NSW and Victorian Governments to recover water to increase environmental flows into the Snowy River and the River Murray. Recovered entitlements are managed by the NSW Government for jointly agreed objectives (appendix B).
- The Living Murray Initiative. Although this is not strictly an entity, the relevant jurisdictions have entered into an agreement for recovery and management of water that is held by the states but managed to achieve jointly agreed objectives (appendix B).

Last, there are some philanthropic organisations that recover and use water for the environment, and private land owners that may own and manage key environmental assets on their land.

The interdependencies between Commonwealth water recovery and existing organisations and individuals are complex and require coordination in one form or another. For example, water recovery should ideally take into account the amounts of water already held by other environmental managers. Similarly, water allocation to environmental assets may involve use of multiple different parcels of water held by different entities and under different conditions or property rights (for some as statutory water, some as discretionary entitlements), hence requiring coordination in its delivery and use.

The referral of powers to create the MDBA and to give it the power to develop and enforce a Basin-wide plan for the use of water resources should improve coordination in water planning across the Basin. This will principally be achieved by requiring that all entities manage their Basin water resources in accordance with water resource plans accredited under the Basin Plan. Thus, water recovery and allocation actions by local environmental managers will need to be consistent with

these plans. But the powers to manage land and enforce property rights remain with the states.

The Basin Plan focuses only on the use of water resources, so cooperative arrangements will still be needed to manage all of the inputs required to achieve environmental outcomes. Even the well coordinated delivery of a sufficient quantity and quality of water will not always be enough to guarantee environmental outcomes.

Establishing the best governance structures for Commonwealth water recovery (under the RTB and SRWUI programs) and environmental water management by the CEWH, within such a fragmented existing system is difficult. This chapter applies governance principles (box 9.1) to the existing Commonwealth arrangements for water recovery and management, and considers what improvements to institutional arrangements could be made to produce a more effective and efficient outcome. While this chapter focuses mostly on Commonwealth arrangements that impact on the buyback, there are implications for the states as well.

9.2 Institutional options for water recovery at the Commonwealth level

The RTB and the SRWUI programs broadly share two common objectives:

- to manage the transition to lower levels of water availability for irrigators under the Basin Plan
- to obtain water for the environment in a cost-effective manner to meet environmental needs, particularly short-term needs (chapter 1).

In addition, the SRWUI program has the objectives of securing a long-term sustainable future for irrigation communities and underpinning food security. Achieving the objectives of the two programs in the most effective and efficient way will depend, in part, on the institutional structures adopted to implement them. This section discusses how governance principles can inform the choice of institutional arrangements that best meet each of these objectives.

Box 9.1 **Governance principles for the water sector**

The Australian Public Service Commission (APSC) has articulated a general governance framework that includes accountability, transparency, integrity, stewardship, efficiency and leadership (APSC 2008). The National Water Initiative (NWI) 2004 and the Agreement on Murray-Darling Basin Reform 2008 committed Basin jurisdictions to a number of water governance principles including:

- the integrated and complementary management of environmental water between all water holders and managers and different levels of government
- clearly identified environmental objectives
- transparency in water use decisions, and accountability of the environmental manager in managing water and achieving environmental outcomes
- independent management of environmental water from competing uses.

Lockwood et al. (2009) have articulated governance principles, inclusive of the APSC's principles and the NWI and MDB Agreement, specifically for natural resource management in Australia. The eight core principles are:

- Legitimacy — an agency has clear objectives and authority for its responsibilities.
- Transparency — decision making processes are visible, clearly communicated, and information about the performance of a governing body is accessible.
- Accountability — responsibility for decisions and actions is allocated and accepted, and it is possible to demonstrate how these responsibilities have been met.
- Inclusiveness — opportunities to participate in and influence decision making processes and actions are made available to stakeholders.
- Fairness — attention is given to stakeholders' views, personal bias is absent from decision making, and costs and benefits are considered in decision making.
- Integration — there is coordination across different levels of water governance, and there is alignment of priorities, plans and activities across governing bodies.
- Capability — the skills, leadership, experience, resources, knowledge, plans and systems enable organisations to deliver on their responsibilities.
- Adaptability — learning is incorporated into decision making and implementation, threats, opportunities and risks are anticipated and managed, and there is systematic reflection on individual, organisation and system performance.

In addition, the principle of efficiency should be used to assess governance arrangements. Efficiency is of particular importance where transaction costs or the existence of economies of scope result from a given arrangement.

Achieving the transitional objective

To achieve the objective of managing the transition to lower levels of water availability under the Basin Plan, the RTB program is only purchasing water entitlements, and is operated by the WED in DEWHA. Entitlements purchased by the WED are passed to the CEWH for ongoing management. DEWHA has indicated that it is using internal transitional targets to guide entitlement purchases in each catchment based on its own estimates of the sustainable diversion limits to be adopted under the Basin Plan (chapter 8).

The conduct of a major purchasing operation within a government department has its advantages and disadvantages from the point of view of good governance.

Applying the governance principles set out in box 9.1 suggests that the advantages of this arrangement include:

- It allows the potential for a clear focus on achieving the transitional objective.
- It has valid authority, in the sense that the Department can enter into contracts with irrigators.
- There are some integration and efficiency advantages in having the WED and the CEWH in the same organisation. This decreases transaction costs and encourages some synergies between the two sections.
- The WED can readily adapt its purchasing strategy to meet updated transitional targets as better information becomes available.

But there are also some disadvantages:

- The arrangements are not particularly transparent:
 - Many participants have expressed concern over the lack of clear volumetric targets and environmental objectives under the RTB tender, including at the catchment level (chapter 8).
 - Sellers have expressed frustration over a lack of information as to why tender bids are rejected. Transparency can be important in creating trust and a willingness to participate in the buyback. Murrumbidgee Irrigation (sub. 39, p. 7) stated that ‘shortcomings [in the tender process do] ... little to overcome the fundamental problem of mistrust associated with Government intervention that has the capacity to significantly affect relative economic, social, and environmental welfare across and within regions’.
- There is the issue of the capability of a government department to conduct a buyback efficiently and effectively, though with four rounds now more or less completed, considerable experience and skills would have now built up in the

WED. And there has been some contracting out of key tasks, such as undertaking the due diligence process.

- The RTB tender is operating in an intensely political environment. For example, the Victorian Government has only exempted some areas from the 4 per cent cap on trade of entitlements. This impairs the effectiveness and efficiency of the buyback and its fairness. Establishing a neutral and independent body to undertake water recovery would have helped to ensure the buyback was run solely to achieve its stated objectives.

Alternative approaches

If the purchasing of entitlements is seen as a transitional measure only, there would be some sense in allocating this task to a dedicated group. But it need not be the WED. One alternative would be to transfer the purchasing to the CEWH. This might have some advantages in allowing the water holder to match purchases against environmental priorities, but this may only confer minimal advantages over current arrangements, given that informal feedback occurs between the two groups anyway.

Another approach would be to transfer this function to an independent organisation. For example, the MDBA has recovered water before and has a degree of statutory independence, but transferring the RTB to it would have created a conflict of interest with the setting of the Basin Plan.

A more radical alternative would have been to create a dedicated corporate entity for the purpose. With appropriate powers, accountability arrangements, and a clear transitional objective, this would have advantages over the current system in creating a more neutral environment for the buyback that operates at arms length from the Minister. It would also be able to recruit specialist staff for the purpose. When the transition has been achieved and the RTB terminated, the organisation could be dissolved. In many ways, Water for Rivers is an example of this approach.

However, some participants did not support outsourcing the RTB to a new body. They note that it could result in higher costs to irrigators and slow the pace of water recovery.

... we do not relish bearing the additional cost that would inevitably be transferred, in one or form or another, to irrigators were such a body created. (Colleambally Irrigation sub. DR77, p. 6)

The establishment of a semi-government quango would undoubtedly lead to more costs and subsequently less money available for purchases, probably with little overall

benefit to irrigators or the government. The time taken for the establishment of such a body would also be an issue. (NIC, sub. DR65, p. 8)

Operating the buyback through a dedicated independent body may cost the same, more or less than the existing arrangements within DEWHA. However, it could well result in changes to the sharing of the cost of running such a body.

The National Irrigators Council offered limited support for purchases to be handed over to the CEWH once the Basin Plan becomes operational:

... there might be some advantage in the CEWH taking control of the purchasing plan to ensure that purchases are in line with, but do not exceed, the needs of the environment as set out in the environmental watering plan. (sub. DR65, p. 9)

The Commission notes the example of Water for Rivers as an effective alternative institutional arrangement to recover water entitlements on behalf of the government (appendix B). However, given that more than one third of the RTB budget has been expended already, the transaction costs of changing the purchasing arrangements mid-program, and the lack of support from submissions for alternative arrangements, the Commission sees the WED as the most appropriate institutional arrangement to achieve the transitional objective.

Achieving the environmental watering objective

The RTB tender run by the WED is also being used to purchase water for the environment, particularly to meet short-term needs (chapter 1). Under current institutional arrangements, the WED is purchasing a portfolio of water entitlements that are then given to the CEWH to manage toward meeting its environmental objectives. Purchases of water entitlements by the WED are being guided by DEWHA's own estimates of environmental water needs based on the 'best available information' and advice from the MDBA and the CEWH (chapter 4).

DEWHA has indicated that, in the longer term, once the CEWH has a sufficiently large portfolio of entitlements, it will begin to use its powers to buy and sell a full range of water products (including allocations, leases and options contracts) to balance its water holdings with its environmental watering objectives (DEWHA sub. DR85 p. 20). However, in the short term, the CEWH is relying on the water entitlements recovered by the WED to meet environmental objectives, including immediate ones (chapter 1).

Consideration of the appropriate institutional arrangements to meet the environmental water recovery objective must be divided into the longer term arrangements under a fully operational CEWH, and the current short-term

arrangements, where purchases of water entitlements are made by the WED and handed over to the CEWH.

Applying the governance principles set out in box 9.1 to the longer term arrangements for managing (trading and use of) environmental water by the CEWH suggests this arrangement has a number of advantages, including:

- integration of water trading (buying and selling) and use with environmental watering objectives
- capability to adapt water holdings to changing environmental needs through the purchase and sale of a range of water products (although the CEWH's ability to trade is subject to the *Water Act 2007* (Cwlth) and ministerial trading rules)
- independence in water trading decisions (although the CEWH is also a First Assistant Secretary in DEWHA)
- transparency and accountability through reporting requirements (the CEWH is required to report on water holdings, trade, use and outcomes of watering actions)
- adaptability through the CEWH's powers to negotiate on the use of inputs other than water such as infrastructure investments and changes to land practices.

There are some constraints on the ability of the CEWH to trade its water portfolio under the *Water Act 2007* (Cwlth) and the Ministerial operating rules, and the CEWH is only partially independent. However, the Commission considers the CEWH is an appropriate institutional arrangement to undertake environmental water management in the longer term.

The current short-term arrangements for recovering environmental water, whereby the WED purchases water entitlements for the environment on behalf of the CEWH, has many of the advantages and disadvantages already identified in the previous section on the best institutional arrangements to meet the transitional objective. The advantages of the short term purchasing arrangements include:

- The WED has the authority to enter into contracts with irrigators.
- There are integration and efficiency advantages in having the WED and the CEWH in the same organisation.
- The WED can readily adjust its purchases of entitlements to better match environmental objectives as better information becomes available.

Disadvantages of this approach include:

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- Participants have expressed concern over a lack of transparency around identification of environmental assets and objectives for which water entitlements are being recovered (chapter 8).
 - There are concerns over the DEWHA's capability to purchase the right mix of water products to meet short-term environmental needs.
 - There is no clear mechanism to ensure the independence of water purchases by the WED from political pressures.

Some participants to the study supported the idea of merging of environmental water recovery and management functions in the one body:

G VIA does not understand why there is, or needs to be a separation, between the Commonwealth Water Purchasing group and the CEWH, and suggests there may be efficiencies in merging these two entities. (GVIA, sub. DR69, p. 10)

MI would suggest that the over-arching environmental water manager should include the environmental water buyer role and the environmental water holder role. (MIL, sub. DR86, p. 11)

As noted earlier, a fully operational CEWH with the powers to trade its environmental water portfolio is an appropriate longer term arrangement to meet the environmental watering objective. The Commission also sees merit in keeping the purchase of entitlements to help meet transitional objectives separate from the management of environmental water holdings.

However, a more important issue for the short-run institutional arrangements for water purchases by the WED, is the potential inefficiency of using one approach (the WED buying water entitlements) to meet the two objectives of aiding transition and recovering water for the environment. Having the WED buy water entitlements may be the most appropriate approach to meet the longer term transitional objective. However, in an ongoing dry period where there are low allocations (even to high reliability entitlements) restricting the WED to buying only water entitlements may mean the CEWH does not have sufficient water to meet immediate environmental needs (chapter 7). And currently, the CEWH is not trading its entitlement portfolio and does not have its own budget to allow it to purchase other water products, such as seasonal allocations, that may better meet current environmental needs.

To address the conundrum of achieving the longer run transitional objective and the short-run environmental water recovery objective, the Commission sees merit in the CEWH being allocated an appropriate budget, commensurate with the benefits of short-term watering options. This would allow it to purchase any complementary water products, such as seasonal allocations, to meet environmental needs that can not be met using its existing portfolio of entitlements. This would improve the

ability of the CEWH to achieve the environmental watering objective, while its water portfolio is being established through purchases of water entitlements by RTB (and recovered under SRWUI).

RECOMMENDATION 9.1

In the short term, while the portfolio of water entitlements is being established, the Commonwealth Environmental Water Holder should be allocated an appropriate budget to purchase additional water products that best meet its immediate environmental objectives.

Sustaining rural communities

With regard to the third objective currently addressed through the SRWUI program — helping to secure a long-term sustainable future for irrigation communities — irrigation infrastructure upgrades may not be the best means of achieving this goal (chapter 6).

A range of Commonwealth and state government policies and programs already exist to assist individuals and communities to adjust to changes in economic and social conditions. To the extent that existing government policies and programs are deemed insufficient to achieve the objective of helping to secure a long-term future for irrigation communities, the Australian Government should examine options for a more targeted adjustment program. As this is a matter that lies outside of DEWHA's normal portfolio responsibilities, there would seem to be advantages in conducting this through another agency. There are many potential routes to secure sustainable communities in the Basin beyond water policy, and these should continue to be explored.

9.3 Coordination issues

The governance principle of integration requires the coordination of actions across different levels of water governance and between various governing bodies (box 9.1). Clear institutional arrangements for coordination also improve transparency and accountability, where there are multiple parties involved in achieving the same objective. Coordination in the recovery and management of environmental water is crucial in the Murray-Darling Basin given the involvement of multiple parties and that their activities can often overlap (section 9.1).

Coordination of environmental water recovery

Coordination of the RTB and SRWUI programs with other water recovery activities is particularly important, as these programs are recovering water on top of existing provisions for environmental water in state water sharing plans and other water recovery programs. Good coordination can improve the effectiveness and efficiency of water recovery by avoiding the recovery of too much, too little or the wrong type of water within a given catchment. Coordination is important not only for calibrating the recovery of water for use on particular sites for which water may be held by other parties, but also in setting purchasing priorities across different environmental assets.

To avoid recovering too much or the wrong type of water, DEWHA first estimates the environmental water requirements for each catchment in the Basin (chapter 4). Subsequently, it adjusts these environmental water recovery targets for the volume of water already set aside for the environment through:

- other government water recovery programs such as the Living Murray Initiative and RiverBank
- planned savings from SRWUI projects
- existing state water sharing plans.

Finally, it adjusts the RTB recovery target for delivery constraints that may limit the use of environmental water in a catchment. RTB targets are not published but guide water purchases by DEWHA in each catchment (sub. DR85, p. 9).

Adjustment of the RTB targets for entitlements recovered through other water recovery programs is a relatively transparent process. Information on environmental entitlements recovered under the various government water recovery programs are publicly available through the MDBA Water Recovery Report (MDBA 2010). While the report provides aggregated data on the volumes of environmental water entitlements held by different parties, it does not show the volume or type of environmental entitlement recovered in a given catchment.

DEWHA also states that purchases under RTB are adjusted for the volume of water recovered or expected to be recovered by SRWUI projects. However, it is unclear how this occurs in practice. For example, would the RTB purchase target in a catchment be adjusted for a proposed SRWUI project announced but not yet approved or implemented? The majority of SRWUI projects are yet to pass the due diligence process (chapter 6).

More importantly, it is unclear how DEWHA takes into account the volume of environmental water set aside under state water sharing plans. Where a state plan

uses environmental water entitlements, the volume and type of water is generally clear. However, water sharing plans also contain significant rules-based provisions for environmental flows that are not easily translated into volumetric amounts. If DEWHA is taking rules-based flows into account when setting their water recovery targets in a catchment, they could explain how they do this.

Clearer information on how DEWHA coordinates water recovery under the RTB program would improve the transparency of the buyback process and accountability for the volume and type of water recovered in each catchment. It would also better inform market participants in deciding whether to sell into the tender or apply for irrigation infrastructure subsidies.

As mentioned earlier, some public information on existing provisions for environmental water are available in the Murray-Darling Basin Water Recovery Report (MDBA 2010). However, the report does not show the volume or type of entitlement recovered in a given catchment. Nor does it list environmental water set aside in state water sharing plans through rules-based flows, or as entitlements.

FINDING 9.1

Transparency and accountability in environmental water recovery under the Restoring the Balance (RTB) program would be improved by:

- *the Murray-Darling Basin Environmental Water Recovery Report including a summary of all existing provisions for environmental water by catchment. The summary should include environmental water set aside under state water sharing plans as rules-based flows and water entitlements, as well as environmental water entitlements recovered through government-funded water recovery programs.*
- *the Department of the Environment, Water, Heritage and the Arts clarifying how RTB water recovery targets in a catchment take into account environmental water to be recovered under the Sustainable Rural Water Use and Infrastructure program, and rules-based environmental water provisions in state water sharing plans.*

Coordination of environmental water management

Environmental water is being held and managed by multiple parties across the Basin. Their activities can often overlap, and responsibilities for environmental outcomes are dispersed across different agencies and managers at all levels. Hence, mechanisms for coordinating the management and release of environmental water are important. The role of the CEWH as the largest holder of discretionary

environmental water in the Basin, and the only holder of environmental water with a Basin-wide focus, is especially important.

Coordination of water delivery is required where different holdings of water may be used to support the same environmental asset or assets. Coordination can allow water under the control of different managers to be combined to maximise an environmental outcome, for example by extending a flood event further into a wetland. Alternatively, coordination can prevent too much water from being delivered to a jointly targeted asset, or an environmental flow from causing damage to third parties (for example, through flooding or bank erosion).

States have, to varying degrees, established environmental water managers to distribute discretionary environmental flows in accordance with objectives set out in catchment level water use plans. For example, in New South Wales, the Department of Environment, Climate Change and Water decides how to distribute seasonal allocations from environmental entitlements established under state water sharing plans and other entitlements purchased through RiverBank. Water use decisions are based on the recommendations of regional DECCW wetlands and rivers officers, under advice from local consultative committees.

Government-funded water recovery programs also have their own arrangements for prioritising environmental flows between targeted assets. For example, the Living Murray uses the Environmental Watering Group (EWG) to decide how to distribute seasonal allocations across the six icon sites based on environmental objectives laid out in site management plans, and under advice from a consultative committee (appendix B).

The CEWH is now operating alongside these state and local environmental water managers in deciding how to use water accruing to Commonwealth environmental entitlements. Under the *Water Act 2007* (Cwlth), the CEWH will be required to manage its water in accordance with the EWP when this is finalised, and receives advice on this from the Environmental Water Scientific Advisory Committee (DEWHA 2009b).

In the context of these fragmented institutional arrangements for environmental water management in the Basin, the Agreement on Murray-Darling Basin Reform 2008 committed governments to the complementary management of all environmental water. Overall, the Basin Agreement requires that:

... the use of environmental water should be coordinated across all types of environmental water and between all holders of environmental water entitlements to achieve agreed environmental objectives in the most cost efficient and effective way possible (p. 36).

Under the Basin Plan and EWP, there will be a convergence between state and Commonwealth watering priorities. However, in the interim, there may be divergent views about environmental watering goals. Even once the Basin Plan comes into effect, environmental water will still be managed by different parties (the CEWH, various state agencies and the Living Murray EWG) and held in different forms (both non-discretionary rules-based flows and discretionary water entitlements) across the Basin. Mechanisms to coordinate the complementary use of all environmental water holdings are needed.

Some of these mechanisms are already in place. The CEWH has a representative on the Living Murray EWG and some state environmental water advisory committees, and has participated in joint environmental watering actions resulting in 76 gigalitres (GL) of Commonwealth water being used with 140 GL provided by water delivery partners. (DEWHA, sub. DR85)

In deciding whether to make Commonwealth water available, the CEWH considers watering proposals from state and local environmental managers and determines the best use of Commonwealth environmental water against its own priorities. To do this, the CEWH receives information from jurisdictions and local environmental managers on environmental asset characteristics, state ecological objectives, water requirements, monitoring approaches, and costs and management regimes associated with watering actions (DEWHA 2009b). DEWHA observed:

For each ‘round’ of Commonwealth watering, input for environmental watering decisions is sought from Basin jurisdictions who in turn consult with Catchment Management Authorities and other local stakeholders, such as environmental watering groups. This input informs the CEWH’s consideration and includes delivery arrangements and costs for proposed uses. Jurisdictions provide this input in the context of their own planned use of environmental water and that of the TLM. (DEWHA, sub. DR85, p. 22)

The CEWH notifies jurisdictions or local managers of its decisions and approved watering action proceeds. In most cases, the jurisdiction or local manager delivers the water and undertakes monitoring and evaluation (DEWHA, sub. DR85, p. 23).

Other mechanisms to coordinate Commonwealth watering are under development or yet to be implemented. For example, the CEWH is working with jurisdictions and river operators to put in place appropriate institutional arrangements to integrate environmental flows with river operations and to facilitate shepherding of environmental water. The CEWH can also enter into agreements with recipients of Commonwealth water regarding how the water is used, including changes to land management practices and for the undertaking of capital works (DEWHA, 2009b).

Finally, it is unclear how the CEWH will coordinate the use of Commonwealth water with unplanned releases by local managers that typically piggy back on natural flow events. The use of discretionary environmental water, to some degree, can be planned in advance and coordinated through Commonwealth watering ‘rounds’ run by the CEWH. However, local managers who wish to access Commonwealth water rapidly (within 48 to 72 hours of a local rain event) to augment a natural increase in river flow may not have time to submit a proposal. It is unclear how the CEWH intends to coordinate timely Commonwealth water releases in these cases. So far, informal networks seem to have sufficed. However, as the volume of water available for release rises this will become increasingly difficult and costly to maintain.

FINDING 9.2

Holdings of environmental water and the management of those holdings in the Murray-Darling Basin are fragmented between various state and local environmental water managers and the Commonwealth Environmental Water Holder (CEWH). Some institutional arrangements for coordinating the CEWH’s environmental watering activities with other environmental water managers have been implemented. However, mechanisms for the full coordination of environmental water management are still evolving.

Achieving the effective and efficient use of all types of environmental water under existing fragmented institutional arrangements requires the CEWH to undertake an ongoing and complex central coordination role including:

- acquiring sufficient knowledge of each catchment it operates in (water infrastructure delivery systems, channel constraints, local water markets)
- facilitating the transfer of accurate and timely local information (on the condition of environmental assets, weather conditions) from local managers
- accessing the required water management and scientific expertise to process information
- undertaking timely consultations, decision making and water deliveries
- maintaining clear lines of responsibility and accountability with water delivery partners.

The Gwydir Valley Irrigators Association raised concerns about the ability of the CEWH to incorporate local information in its decision making process and manage centrally environmental water:

It is clear from the Gwydir experience that effective (environmental water) management requires local management, backed by local knowledge and experience. It will be impossible to effectively manage environmental water for the Gwydir, from

Canberra. ... The Gwydir has a long established ECA Advisory Committee, that makes recommendations on the management of the ECA and DECC&W water, while the Commonwealth is developing a parallel system. The Commonwealth does have observer status on the ECA committee, and has indicated a willingness to work with the committee, but at the same time is maintaining its independence ... (sub. DR69, p.10)

The Goulburn Broken Catchment Management Authority also noted the importance of local information in making sound environmental management decisions:

... catchment management authorities ... are the bodies with local knowledge to ensure appropriate design and implementation, identify and raise unintended impacts and to coordinate the many existing activities at both state and regional levels ... (sub. DR70, p. 2)

Local environmental managers can have better knowledge of local environmental conditions, channel capacity constraints, and the potential to achieve desired outcomes in more efficient ways by trading off inputs such as more water against changes to land management practices or investments in water infrastructure. In addition, where the manager is closer to the environmental asset, he or she may be able to act in a more timely manner in undertaking opportunistic watering. Better accountability for the achievement of environmental objectives may result from closer contact with the local community and clearer lines of responsibility. Local management can also generate gains from innovation and experimentation, and reduce the potential for duplication, and the transaction costs of coordination mechanisms needed when different organisations are involved in environmental watering.

The Commission recognises that local environmental management may not produce an optimal Basin-wide outcome where there are significant spillovers from water use between catchments. In addition, the states have a mixed track record of setting aside environmental flows and managing those flows to meet environmental targets (NWC 2007), and hence the Australian Government may be reluctant to hand over control of its entitlements. To address these issues, broader institutional arrangements, such as the CEWH, are needed to coordinate Basin-wide water use to maximise overall environmental outcomes.

However, some submissions support the delegation of some of the CEWH's decision making responsibilities for the release of Commonwealth water to local environmental water managers where they exist and are appropriately governed:

[The CEWH] ... should be able to devolve service provision to catchment based environmental service providers if devolution to specific catchments is appropriate. (MIL, sub. DR86, p.11)

... where there are mature and efficient environmental water managers in place (such as the Gwydir ECA Advisory Committee), then the CEWH should delegate the

management of its water resources to that committee, rather than trying to replicate a management system. ... The ECA committee would have to produce an annual plan (which it does) and the CEWH could then assess that plan, and if consistent with the aims of the CEWH, then the sensible and efficient thing to do, would be to hand over the management of the Commonwealth water to the ECA committee. The committee could then report back the outcomes to the CEWH ... (GVIA, sub. DR69, p. 10)

The Commission supports a more decentralised approach to managing environmental water, wherever this is practical. While retaining ownership of its entitlements, the CEWH could enter into agreements with partner environmental water managers that delegate some of the CEWH's role in deciding releases of Commonwealth environmental water. Appropriately structured agreements could access some of the gains from local management and ease the complexity of the CEWH's central coordination role. This might work best where:

- environmental objectives are agreed between the CEWH and the local environmental water manager
- local managers have clear accountability for the achievement of environmental outcomes, and the necessary authority and skills to act
- there are no significant spillovers from the use of the environmental water that cannot be managed locally, for example, where there may be additional benefits from coordinating water use between more than one catchment.

The agreements could specify mechanisms to annul the arrangement if water was poorly used, and could include appropriate requirements for monitoring and reporting on outcomes.

Another important area where coordination mechanisms in environmental management are needed is in the combining of water other environmental inputs.

Coordination between water and other inputs in achieving environmental outcomes

Current and emerging institutional structures governing water use in the Basin focus almost exclusively on recovering and allocating water, and give little or no consideration to the need to use water in conjunction with other inputs to achieve desirable environmental outcomes. Yet this is a crucial issue.

The *Water Act 2007* (Cwlth) is concerned only with planning of water resources. (This narrow scope reflects the powers that were referred to the Commonwealth to develop a Basin Plan). In setting SDLs and environmental objectives, no explicit consideration need be given to the mix of inputs that might be required to achieve

environmental outcomes. For example, diversion works may help achieve a flooding event with less water than might be needed to achieve an overbank flow. And land management practices can be crucial to protect or restore an environmental asset.

As noted in chapter 6, there is only limited ability to coordinate the use of water acquired by the Commonwealth with the provision of other inputs by the states. As discussed in an earlier section, the CEWH can enter into contracts and arrangements directly related to use of Commonwealth water holdings, and can consider land management practices in prioritising environmental watering actions (DEWHA, sub. DR85).

Many participants to the study have emphasised the need to coordinate management of environmental water with other inputs to improve the productivity of water use and environmental outcomes.

Horticulture Australia and the GVIA noted the importance of coordinating increased flows with better land management to maximise environmental outcomes:

Implementation of environmental flows must be accompanied with the necessary supporting works (eg. weed control, grazing management, fish passage) to ensure the maximum environmental benefit is achieved from the flow. (Horticulture Australia, sub. 36, p. 8)

GVIA ... is very frustrated by the almost total focus on water volumes. For example, it is well known, that if a desired environmental outcome is increased fish numbers, increased flow in the absence of habitat restoration eg re-snagging, or effective management of cold-water pollution risks, will achieve little or nothing. (GVIA, sub. 69 p. 10)

Murrumbidgee Irrigation argued that environmental managers should have the resources and powers to buy (and trade water for) other inputs, including environmental services:

The environmental manager could also benefit from resources to enable purchase of water, infrastructure and environmental services from other environmental management agencies as well as exchange water for the delivery of specified environmental outcomes. (MIL, sub. DR86, p. 10)

The Victorian Farmers Federation highlighted the need for environmental managers to act like commercial irrigators and invest in improving the efficiency of their water use:

Investing in infrastructure to deliver environmental water, just as in the case of water for other uses, minimises losses thereby reducing the volume of water needed to achieve any particular outcome. This could involve upgrading channels and piping water to supply wet lands. (sub. DR78, p. 13)

The Australian Conservation Foundation argued:

... over-extraction of water is acknowledged as by far the most significant (threat) and if it is not adequately dealt with, any investment to address other threats, for example, pests, weeds, logging, grazing, etc will be redundant. ... but as ... programs address over-extraction, other land and water management issues will become increasingly important. (sub. DR79, p. 2)

The Commission agrees with these submissions and supports the powers given to the CEWH to enter into agreements to match the use of Commonwealth water with complementary infrastructure investments and other activities, such as changes to land management practices. However, the Commission notes that overall, Basin jurisdictions have committed to a predominately planned and water-centric approach to improving environmental outcomes in the Basin. All jurisdictions need to work together to ensure that water is used efficiently in conjunction with other inputs to achieve desired outcomes.

FINDING 9.3

Recovering water is not always sufficient to achieve desired environmental outcomes in the Basin. Other inputs, such as capital works to manage and direct environmental flows, and changes to land management practices, may also be required. Yet the Basin Plan, and the Australian Government's buyback and infrastructure programs, focus solely on recovering water. Better systems are needed to coordinate the mix of water purchases with other actions and inputs to achieve the desired environmental outcomes.

Alternative approaches to environmental management

An alternative approach might have been to decide on what environmental outcomes were needed and then to provide appropriate financial assistance to local environmental managers, private and public, to achieve these goals. This approach might have improved outcomes through capturing the gains from local environmental management discussed earlier, as well as the productivity gains that could flow from being able to combine the best mix of inputs, rather than just water, to achieve the desired environmental goals.

Young (2010) has provided an example of a decentralised approach to environmental management that would allow the local environmental manager or trustee to apply a mix of inputs, including water, toward meeting environmental objectives (box 9.2).

Box 9.2 Flexible environmental water management by ‘regional trusts’

Young proposes a decentralised approach to environmental water management, where the local manager or trustee has powers to apply a full range of inputs to best achieve targeted environmental objectives.

Young argues that all environmental water could be specified as entitlements. Only those environmental entitlements that can not be managed locally would be managed centrally by ‘a system trustee’, who would also be responsible for improving knowledge, developing broad-scale strategies, and researching environmental watering technologies.

The majority of environmental entitlements would be held by regional environmental trusts. Trustees would be independent from government, required to use their holdings of environmental water to meet explicit environmental objectives, and be made accountable for achievement of those outcomes. Each trust would be allocated a portfolio of environmental water entitlements sufficient to meet its environmental objectives. Trusts could also receive funding from state governments, the sale of seasonal allocations from their entitlement portfolio, and private donations.

Trustees would be free to engage in a range of environmental management activities that they believe would best achieve their environmental goals, including buying other water products and environmental services, and entering into agreements relating to environmental water use, such as changes to land management practices.

Young argues the advantages of this approach could include:

- greater certainty for managers on the amount of environmental water available to them, allowing longer term planning and independence from political influence
- better use of local knowledge, improving decision making
- improved accountability for outcomes
- lower transaction costs as coordination with the central manager is reduced
- flexibility to experiment and innovate using a range of inputs other than just water.

Source: Young (2010 unpublished).

Young's example modifies the current institutional structure by allocating the majority of environmental entitlements to a local trustee who could use the entitlement portfolio, and possible additional funding sources, to develop the most appropriate approach to environmental management for the catchment. This approach would include the power to sell seasonal allocations to finance the purchase of other inputs, if this was the most effective strategy.

The Commission sees merit in Young's proposal in the sense that it builds on the existing water recovery arrangements that aim to recover a portfolio of environmental entitlements for use in catchments across the Basin. In addition, it

offers an alternative approach to the centralised role of the CEWH, in that it combines local knowledge with a full mix of inputs to achieve improved environmental outcomes.

However, there are problems with Young's approach. Local environmental managers have already been established in states (to varying degrees of success), and how these regional trusts could be established within existing state environmental management systems is unclear. Young's proposal notes the importance of accountability of the trusts but provides limited details on how this would be achieved. In particular, it is unclear how the ability of trustees to sell allocations into consumptive use to fund the purchase of other inputs could be reconciled with the approach under the Basin Plan.

The Commission prefers to build on existing arrangements, where possible, and sees merit in combining the gains from a more localised approach to environmental management with improvements from using water as one of a number of inputs toward achieving desired environmental outcomes. That said, there may still be cases where direct funding of a local manager to produce a desired outcome may be an effective and efficient approach (chapter 7), particularly where environmental assets are on private land.

RECOMMENDATION 9.2

Where an effective and accountable local environmental water manager exists, and there are no significant spillovers from water use, the Commonwealth Environmental Water Holder should enter into an agreement that:

- ***delegates use of an appropriate quantity of its environmental water to that manager***
- ***requires the manager to coordinate the use of Commonwealth water with other actions and inputs that best achieve agreed outcomes.***