



Findings and Recommendations

Water planning

Finding 1.1

The Commission considers that progress in the development and commencement of statutory water plans is now critically inadequate, with over 40% of the total scheduled water plans yet to commence, although as noted in this chapter, there are limitations to reporting on progress of water planning on the basis of the number of plans completed. The Australian Capital Territory is the only jurisdiction to have commenced all of its scheduled plans. Despite improving its water planning to deliver some outcomes of the NWI, Western Australia is yet to prepare legislation to enable NWI-consistent statutory water plans. If the current rate of progress across Australia continues, most of the remaining scheduled plans will not commence until well after the 2009 NWI commitment. Delays in the delivery of NWI-consistent water plans necessarily mean delays in the delivery of many other benefits of the NWI.

Recommendation 1.1

The Commission strongly urges the immediate acceleration of the development and commencement of water plans to allow water users to realise the full benefits of NWI reforms. The Commission considers it is now timely for parties to reset and publish realistic timeframes for the rollout of remaining water plans. However the Commission considers that accelerating the pace of water planning should be balanced against quality, and particularly the quality of community consultation.

Finding 1.2

The presentation of 'best available' information in many water plans is often focused on the physical condition of the water resource, with limited description of ecological conditions and socioeconomic factors. Where information gaps have been identified in a water plan, there is too little explanation of the specific data and knowledge required or steps in place to gather that information, or of how it will assist the development or revision of plans.

Recommendation 1.2

The Commission recommends that, as plans approach their renewal date, jurisdictions review existing water plans to identify information gaps. Identified gaps should be prioritised and addressed effectively and the results of new research should be incorporated into new and existing plans.

Finding 1.3

There are some good examples where water plans have incorporated latest information on climate change; however, this is not widespread, particularly where water plans were developed several years ago. The Commission acknowledges that some jurisdictions, for example New South Wales and Queensland, plan to incorporate climate change scenarios into their future water plans.

Recommendation 1.3

The Commission recommends that all future water plans consider explicitly the impacts of climate change on water resources and the environment, and are sufficiently resilient to accommodate a broad range of climate change outcomes.

Finding 1.4

There is scope to improve the transparency of water plans by clearly stating the nature of trade-offs between competing users, communicating this to stakeholders and the community in the planning process, and better reflecting those trade-offs in the decisions to allocate water between various users and the environment.

Finding 1.5

As also found in Chapter 6 (Finding 6.8), while the NWI recognises through special clause 34 the potential for further policies and measures beyond the agreement for minerals and energy industries, the circumstances in which they would apply are not defined and identified in a consistent and transparent manner. Little progress has been made in the five years since the signing of the NWI in fleshing out the special provisions for the minerals and related industries. As a consequence, there remains limited integration of those industries with broader water markets and water planning processes, despite the potential for considerable benefits in many cases.

Finding 1.6

It is rare for Indigenous water requirements to be explicitly included in water plans, and most jurisdictions are not yet engaging Indigenous people effectively in water planning processes. The Commission notes that Indigenous groups are, at their own initiative, currently developing the capacity to participate more fully in water planning processes.

Recommendation 1.4

The Commission recommends that all jurisdictions develop and publish processes for effective engagement of Indigenous people in water planning. Parties should ensure that all new water plans (including statutory reviews of existing water plans) provide for Indigenous access to water resources by at least incorporating Indigenous social, spiritual and customary objectives and strategies for achieving those objectives. Jurisdictional processes should also make clear how Indigenous groups can pursue their legitimate economic objectives.

Finding 1.7	Across most jurisdictions, progress continues to be slow in identifying and addressing significant interception of surface and groundwater. There is no evidence that parties, other than South Australia, have formally identified significant interception activities in water systems or articulated policy responses that will enable full implementation of their NWI commitments to deal with water interception.
Recommendation 1.5	To reduce the potential for further erosion of security of existing water access entitlements, the Commission recommends that significant and potentially significant water interception activities be immediately identified and quantified, and a process for addressing them clarified within the next six months. This will enable jurisdictions to meet their commitment to include any proposals for additional water interception activities above an agreed threshold size into existing water access entitlement regimes by no later than 2011.
Finding 1.8	Management objectives in water plans are often too general to be able to be measured and assessed to determine the success of the plan. Furthermore, plans provide very limited or no explanation of how the 'best available' information was used to determine the objectives, or what assumptions were made.
Recommendation 1.6	The Commission considers that all water plan objectives need to be specific and measurable, and plans should incorporate monitoring arrangements specifically designed to measure performance against each objective, which in turn will enable improved adaptive management.
Finding 1.9	The Commission considers that, in general, rules for consumptive and non-consumptive water provisions are sufficiently well defined in water plans. However, rules do not always deal adequately with interception (refer to Finding 1.7), nor periods of exceptionally low inflows (refer to Finding 1.10).
Finding 1.10	The difficult recent seasonal conditions have revealed that many water plans have not adequately defined how systems will be operated during unanticipated sequences of low inflows.
Recommendation 1.7	The Commission recommends that jurisdictions and national agencies further invest (taking account of work already underway through the COAG work program) in best practice guidelines, streamlined processes and training to improve the quality, the effectiveness of the processes, and the resilience and community acceptance of water plans.
Recommendation 1.8	The Commission recommends that all existing and new plans be tested to ensure that they clearly define how water will be allocated to various categories of users and the environment under the full range of inflow conditions (including sequences of dry years), and to ensure that plans adequately specify how systems will be operated in times of extremely low water availability. This should include publicly defining the exceptional circumstances in which a plan would be suspended or qualified, the processes and principles then to be followed, and the arrangements for reinstatement of plans when conditions improve.
Finding 1.11	Water monitoring arrangements across jurisdictions are improving, with a number of jurisdictions implementing comprehensive statewide monitoring programs. However, water plans generally lack detailed description of their specific monitoring arrangements, and lack clarity about how plan-specific and statewide monitoring arrangements can each contribute to assessing achievement of the plans' objectives.
Finding 1.12	The quality and transparency of processes for reporting on the outcomes of water plans are inadequate in many jurisdictions. Ideally, such reports should be prepared at arm's length, clearly show how the plans' objectives are being achieved, discuss areas of success and failure and recommend any changes to the provisions of the plans (within the bounds of the plans' review provisions).
Finding 1.13	Considering the magnitude of the task ahead, the Commission observes that the MDBA has had a disappointingly slow start, with an intergovernmental delay in appointing authority members and growing pressure on timelines to complete the development of the Basin Plan. Effective community consultation is crucial to the basin planning process. There is a risk that the pressure on timelines may affect the quality of that consultation. The Commission supports the MDBA's work to develop strategies to engage the community in the preparation of the Basin Plan.

Recommendation 1.9 The Commission recommends that the MDBA further clarify the intended planning processes and ground rules for the development of the new Basin Plan in consultation with affected parties, to engage stakeholders in what the new plan will involve, to better manage expectations, provide more certainty, and facilitate a more cooperative approach with the MDB jurisdictions. In particular, the Commission recommends greater public consultation, progressive release of background and issues papers and, where possible, interim, progressive guidance from the MDBA on specific environmental, economic and social objectives or outcomes likely to be targeted in the plan.

Recommendation 1.10 To account for delays in progress to date and new developments, the Commission recommends that NWI parties revise and resubmit, within six months for accreditation by the Commission, their jurisdictional plans for implementation of their NWI commitments.

Understanding surface and groundwater connectivity

Finding 2.1 The Commission finds that all jurisdictions have commenced assessments of connectivity, as required under the NWI. The Commission appreciates that each jurisdiction takes a different approach to assessment and management of its water resources, in line with its assessment of management needs. However, applying different thresholds of significance, and hence differing thresholds that trigger integrated management, risks undermining confidence in water planning and entitlements, particularly in areas where entitlements can be traded across borders.

Finding 2.2 All jurisdictions have now passed legislation, or in the case of Western Australia implemented planning processes, that recognise the potential connectivity of surface and groundwater resources and provide for their conjunctive planning and management.

Finding 2.3 Where plans have been developed, Queensland, New South Wales, South Australia, the Australian Capital Territory and the Northern Territory account for the potential connectivity of surface water and groundwater resources in the determination of the sustainable extraction limits. Other jurisdictions have commenced the development of plans that will set out integrated management arrangements.

Finding 2.4 All jurisdictions have made some progress in developing integrated management arrangements for some connected systems. However, the continuing slow progress in rolling out the enabling water plans, and failure to adequately address overallocation in some systems, are inhibiting widespread adoption of integrated surface water and groundwater management.

Recommendation 2.1 The Commission recommends that unless otherwise established, it should be assumed that all surface and groundwater systems are connected and that the eventual impact of groundwater pumping on surface water flow may be as high as 100%. This is the reverse of current practice.

Finding 2.5 The quality of data on Australia's groundwater resources is particularly poor, and more resources need to be devoted to improving it. The quality of metering and monitoring of groundwater extractions is variable. The National Groundwater Action Plan is helping to improve the quality of data on groundwater resources.

Recommendation 2.2 The Commission considers that ultimately all surface and groundwater extractions, including for stock and domestic purposes, should be licensed and metered or otherwise measured. However, the Commission also recognises the practical constraints to universal metering of groundwater extractions. The Commission therefore proposes that a risk-based approach be adopted, in which the following three criteria are given particular weight in determining metering priorities among different water systems as universal metering is rolled out:

- the level of water use in the system, with priority for systems at or approaching full allocation
- in the case of systems which are not at or approaching full allocation, the cost-effectiveness of metering investments (including benefits implicit in the acquisition of better water use data)
- the potential contribution of further metering to public confidence about compliance and the general quality of management of the given water system.

Refer also to the Commission's Recommendation 3.5.

Recommendation 2.3 The Commission recommends that, in helping redress the lack and quality of groundwater data available to support integrated management, it is important that the Bureau of Meteorology's emerging national water data and accounting systems treat surface water and groundwater data in an integrated fashion. The National Water Accounting Standards currently under development (Chapter 3) need to incorporate accounting for connected surface and groundwater systems from the outset

Finding 2.6 There is currently a critical need for increased national expertise in groundwater assessment and management, and especially skills in assessment and management of connected systems. Progress is being made in this area through initiatives such as the National Centre for Groundwater Research and Training and the National Groundwater Action Plan.

Water accounting and water data

Finding 3.1 Progress continues to be made in developing a national framework and standards for water accounting, which are on track to be delivered in 2010.

Recommendation 3.1 To facilitate timely rollout of the standards, jurisdictions should now give attention to how they will proceed with implementation of the standards, drawing lessons from the water accounting pilot projects.

Finding 3.2 The quality of data and arrangements for data sharing and exchange remain impediments to effective and coordinated water accounting, particularly with respect to the compilation of state and regional data into a national account. Data exchange between agencies and jurisdictions remains difficult, due to the absence of technical standards and administrative protocols for the access, transfer and aggregation of data.

Finding 3.3 With the legislative empowerment and funding of the BoM under the Water Act 2007, the first vital steps are being taken towards a nationally recognised institutional 'home' for Australia's water data and accounting effort. However, the Commission notes that the BoM's role under the Water Act is focused on the issuing of standards, the compiling of water accounts, and the publishing of the National Water Account. There is no defined role for the BoM in advancing the implementation of all aspects of water accounting across all jurisdictions, which remain responsible for many water accounting activities. It is therefore essential that the BoM and the jurisdictions continue to work closely together.

Recommendation 3.2 The Commission strongly supports work by the BoM to develop more effective and coordinated frameworks for water data and accounting. It will be important that the BoM takes an expansive view of its role and also seeks to establish itself as a proactive national centre of cutting-edge expertise, education, innovation, outreach and value adding in water data and accounting.

Finding 3.4 The Commission notes that standards for environmental water accounting are being addressed through the National Water Accounting Development Project. While noting progress in New South Wales, Victoria and the Murray–Darling Basin, the Commission finds that only limited progress has been made in developing the environmental water registers required by the NWI.

Recommendation 3.3 The Commission considers it essential that water accounting standards adequately address environmental water accounting. The Commission urges a refocusing of effort to ensure that registers report on environmental water, particularly given the importance of registers in underpinning community confidence in environmental water recovery investments. Such registers need national consistency and public accessibility, and should be properly nested within the national water accounting system as a whole.

Finding 3.5 While the recent finalisation of the pattern approvals standards for non-urban application meters is an important step, considerable work remains to develop nationally standardised approaches to meter installation and testing, and to implement the standards.

Finding 3.6	While the development of metering implementation plans is progressing well, resource constraints will have a major impact on the jurisdictions' abilities to deliver expanded and accurate metering in accordance with the plans.
Recommendation 3.4	The Commission urges the early completion of all outstanding jurisdictional metering implementation plans, with a view to a step function improvement in accuracy, coverage and national consistency of metering, including a deliberate coordinated national movement away from Dethridge meters to more accurate meters with higher management and accounting functionality. To help address resourcing constraints to metering implementation, the Commission recommends the development of a new, nationally consistent metering cost sharing formula.
Recommendation 3.5	The Commission recommends that governments commit to a shared ultimate national goal of universal licensing and metering of all surface and groundwater extractions, including for stock and domestic purposes. Refer to Recommendation 2.2.
Finding 3.7	The Commission finds that compliance and enforcement activities to ensure that users do not extract more than their allocated volumes of water vary considerably across Australia, and that adoption of national principles to guide compliance and enforcement efforts may disseminate best practice and build community confidence, especially across state borders.
Recommendation 3.6	The Commission recommends further exploration of the extent of noncompliance, and the potential for greater coherence and coordination of water enforcement across jurisdictions by means of national principles to guide compliance and enforcement efforts and to improve cross-border consistency. The Commission notes that work will be undertaken in this area under the COAG work program.

Environmental water

Finding 4.1	The Commission finds that, while there has been an increase in the use of scientifically reviewed and holistic methods to determine environmental water requirements, some jurisdictions still do not use methods that are holistic, well documented, or independently peer reviewed. This is likely to detract from the quality of assessments and reduce public confidence in the results.
Finding 4.2	There has been an improvement in the availability of scientific tools and information to provide an evidence basis for establishing environmental water requirements in water plans. It will be important that such tools are now adopted and applied routinely in water planning.
Finding 4.3	Despite statutory recognition of environmental water in all jurisdictions, the Commission remains concerned about the security of environmental water access entitlements and rules-based environmental water, particularly in conditions of intense or prolonged drought. There have been cases in which ad hoc decisions have reduced the security of environmental flows.
Recommendation 4.1	The Commission recommends that all jurisdictions put in place systematic and transparent processes to determine environmental water outcomes and requirements. All water plans should clearly specify environmental outcomes, and fully define environmental watering protocols and operational activities to meet these outcomes under the full range of inflow scenarios, including those that may arise as a result of climate change. In the MDB, the Commission notes that the Water Act 2007 requires that the MDBA, from the outset, incorporate into its environmental watering plan systematic and transparent processes to identify environmental outcomes and prioritise water to meet those outcomes under the full range of inflow scenarios.
Recommendation 4.2	The Commission recommends that all decisions to reduce the security of environmental water in exceptional circumstances such as intense or prolonged drought should be made transparent, including the decision-making process and the decision-making evidence and reasoning.

<p>Finding 4.4</p>	<p>The Commission strongly supports continued buybacks, including major purchases, as a strategic approach to improving environmental outcomes and adjusting to the new sustainable diversion limits that will be developed under the new Murray–Darling Basin Plan. The Commission does not support the use, by states, of barriers to water trade to attempt to constrain environmental purchases and desirable adjustment.</p>
<p>Recommendation 4.3</p>	<p>The Commission considers that the relationship between buybacks, providing for environmental assets, and the transition to new sustainable diversion limits in the MDB is not well understood. Ongoing communication could continue to improve the transparency of these reforms, so building community understanding and support and enabling more informed decision making by entitlement holders. For example, the Commission recommends that the Murray–Darling Basin Authority progressively issue guidance on the way that specific environmental assets identified by the Authority or committed to by governments are likely to be managed, and the objectives that are being sought, locally and across the MDB.</p>
<p>Finding 4.5</p>	<p>The role of environmental water managers is generally not adequately defined and resourced. They lack recognition, influence and authority, and their role and legitimacy in the implementation and operation of water plans are often unclear. Often, they carry out other responsibilities alongside their role as environmental water manager. This can blur their accountability.</p>
<p>Recommendation 4.4</p>	<p>The Commission recommends that governments publicly identify environmental water holders and environmental water managers within their jurisdictions and clearly specify their authority, responsibilities and accountabilities. Where accountabilities are blurred, they should be clarified.</p>
<p>Finding 4.6</p>	<p>There is potential for confusion and inefficiencies to arise due to a lack of communication and alignment between Commonwealth, state, and local programs aimed at environmental improvement, with respect to both environmental water and catchment health initiatives.</p>
<p>Recommendation 4.5</p>	<p>The Commission recommends that greater consideration be given to improving alignment and integration of programs for recovery and management of environmental water. This alignment and integration should be pursued across jurisdictions, geographical scales, and across land and water management, to identify and capture synergies and optimise outcomes.</p>
<p>Finding 4.7</p>	<p>Environmental water managers require specific environmental objectives within water plans to guide water delivery and support monitoring, evaluation and adaptive management.</p>
<p>Finding 4.8</p>	<p>There is no transparent, accessible and accountable mechanism for registration of entitlements-based and non-entitlements-based water being delivered for environmental outcomes. It is therefore not possible to assess the level of compliance with environmental entitlements and rules and the risks associated with non-compliance.</p>
<p>Recommendation 4.6</p>	<p>Consistent with the NWI, the Commission recommends the development of nationally consistent registration of environmental water across Australia, showing all relevant details of entitlements-based and non-entitlements-based environmental water and outcomes, as well as annual public reporting of the existence, delivery and outcomes of environmental water.</p>
<p>Finding 4.9</p>	<p>The majority of water plans lack detailed monitoring, evaluation and reporting protocols linked to the delivery of environmental water and the intended outcomes.</p>
<p>Recommendation 4.7</p>	<p>The Commission recommends that entitlements and rules-based mechanisms designed to achieve environmental water objectives in water plans be accompanied by detailed monitoring and evaluation protocols addressing both outputs (flows/volumes delivered) and environmental outcomes. The protocols should be based on science, resourced adequately, implemented fully, and reviewed independently. There should be close linkages between monitoring and adaptive management to ensure that environmental outcomes are achieved with a high level of confidence, and to ensure the cost-effectiveness of water made available to the environment.</p>

Finding 4.10 Due to the complexity of ecosystems dependent on surface and groundwater resources, improved scientific research and practical application of best available knowledge are required to better understand and explain the links between environmental water delivery and ecosystem health.

Recommendation 4.8 The Commission recommends that jurisdictions collaborate in the development of a national water science strategy to provide a framework for better identifying, specifying and prioritising environmental assets, and for understanding the links between environmental water delivery and ecosystem health. As a minimum, the strategy should embrace national water research objectives and priorities; resource allocation guidance and funding responsibilities; agreed key result areas; clarification of the respective roles and responsibilities of science players; collaborative opportunities; and dissemination, adoption and innovation pathways. Such a strategy, with a specific focus on the science underpinning environmental water management, would complement ongoing work by COAG to develop a more general strategy to build knowledge and research capacity to support water reform.

Addressing overallocation and overuse

Finding 5.1 From its assessment of jurisdictions' water management legislation, the Commission finds that most jurisdictions do not specifically define the NWI terms 'overallocation', 'overuse' and 'environmentally sustainable levels of extraction' in their legislation. However, with the exception of the Northern Territory and Western Australia, water management frameworks generally provide for the identification of overallocated and overused systems and measures for their recovery.

Finding 5.2 Since March 2008, COAG officials have been working to develop national guidelines on the concepts of overallocation, overuse and sustainable yield, including case studies to assist their application in planning processes. The Commission considers it important and urgent that a shared national understanding of these concepts is developed. Progress to date has been too slow. However it is also important that, pending completion of this work, jurisdictions do not delay further practical actions to address overallocation and overuse.

Recommendation 5.1 To improve the sustainable management of our water resources and increase community acceptance and confidence, the Commission supports the current COAG initiative to develop common guidelines for determining environmentally sustainable levels of extraction for use in the development of water plans. The Commission recommends faster progress to complete the work, and that jurisdictions commit to implementing the guidelines within defined timeframes from the date of their completion.

Finding 5.3 Typically, the status of most water systems in relation to overallocation and overuse is not stated explicitly in water plans. This is a serious flaw in such plans. The community needs to know which systems are overallocated, not least for planning and investment purposes.

Finding 5.4 The Commission is concerned that surface water systems may be under-represented in current assessments of overallocation or overuse across Australia, particularly in the MDB, given evidence such as the Sustainable Rivers Audit (2008) and the CSIRO Sustainable Yields Study (2008). The vast majority of the water systems currently identified by jurisdictions as overallocated and/or overused are groundwater systems.

Recommendation 5.2 The Commission recommends further efforts to improve the quality and consistency of methodologies for assessing the status of water systems, particularly surface water systems. Once developed, such methods should be applied promptly to all systems where there is some degree of uncertainty or lack of community acceptance regarding the environmental sustainability of current levels of extraction.

Finding 5.5 All reviewed water plans that identified water systems as overallocated or overused included, to varying degrees, pathways to return those systems to environmentally sustainable levels of extraction.

Finding 5.6 In systems where overallocation and/or overuse have not been established, jurisdictions are implementing a range of water recovery initiatives to address environmental decline. However, many water recovery initiatives are not always linked to clear targets for environmentally sustainable levels of extraction, or embedded in planning processes. This can reduce certainty for entitlement holders, and potentially compromise levels of community support.

Recommendation 5.3 Where water recovery initiatives are being implemented, governments should ensure that they are also progressing work to define the target level of sustainable extraction. In the MDB this work is underway. Linking water recovery with targets for sustainable extraction will provide entitlement holders and the broader community with a better understanding of the extent of necessary adjustment.

Finding 5.7 While efforts have been made, evidence suggests that limited real progress has been made in reducing the number of systems identified as overallocated and overused. On the basis of this Biennial Assessment, the Commission is disappointed to conclude that this central requirement of water reform will not be met.

Recommendation 5.4 The Commission recommends that jurisdictions make every possible effort to meet their NWI commitments and demonstrate clear pathways for the return of all systems currently identified as overallocated and overused to within sustainable extraction limits. The Commission strongly urges jurisdictions to publicly identify the most overallocated or overused systems for immediate attention, with less urgent cases to follow. When collated, the systems identified by each jurisdiction could enable an agreed national statement of priority actions to address overallocation and overuse.

Water entitlements

Finding 6.1 Most jurisdictions have undertaken significant legislative reforms to enable the implementation of NWI-consistent water access entitlements. However, Western Australia and the Northern Territory are notable cases where legislative reform has not been finalised.

Recommendation 6.1 The Commission recommends that Western Australia and the Northern Territory finalise and introduce the remaining legislative reforms as soon as possible to enable implementation of their NWI commitments to NWI-consistent water access entitlements and the benefits that flow from them.

Finding 6.2 As a result of incomplete implementation of entitlement reforms, there are water users in each jurisdiction who do not yet benefit from the additional security provided by NWI-consistent water access entitlements. To date, implementation has concentrated on high-priority water systems. In remaining systems, the intended extent of implementation of NWI-consistent water access entitlements and the timeframe for such reform are uncertain.

Recommendation 6.2 The Commission recommends that jurisdictions pursue the implementation of NWI-consistent water access entitlements with greater urgency. Recognising that the NWI allows for the issue of fixed-term or other types of entitlements where demonstrably necessary, the Commission urges jurisdictions to clearly articulate where such arrangements are to be made and on what grounds. The Commission recommends that jurisdictions review and reset their implementation plans within six months to spell out the proposed extent and timetable for entitlement reforms across all water systems.

Finding 6.3 The Commission has identified mixed progress in relation to robust and transparent annual allocation methods and processes (including announcements), which are particularly important in times of drought and as markets develop. While there are examples of positive reforms and good practice, concerns have been expressed by stakeholders about allocation processes in some cases and there are other examples of ad hoc changes to allocation policy that undermine confidence in water management.

Recommendation 6.3 The Commission recommends that for hydrologically connected systems, jurisdictions work together to develop and adopt more transparent and robust allocation methods and processes. The Commission proposes undertaking a national review of allocation methods and processes prior to the next biennial assessment in 2011.

Finding 6.4 There is evidence that some jurisdictions, such as New South Wales, Victoria and South Australia, are improving the flexibility of water access entitlements to better manage the risks associated with low water availability.

Finding 6.5 Ministerial interventions and special water sharing arrangements have been used to ensure water supply for critical human needs during periods of critical and severe water shortage. These arrangements are necessary in exceptional circumstances. However, such arrangements are generally less transparent than standard water allocation arrangements, and are susceptible to more ad hoc intervention. While recognising jurisdictions' efforts to improve community understanding of these arrangements, and limit their use, the Commission is concerned that ongoing use of such arrangements may erode the overall integrity of water entitlements.

Recommendation 6.4 Recognising that drought conditions may become more frequent as a result of climate change, the Commission recommends that jurisdictions make further efforts to develop detailed allocation policies covering the full range of inflow conditions, and that these are promulgated to improve public understanding of how drought-related contingencies will be managed in future, including through arrangements to provide for critical human water needs under the new Murray–Darling Basin Plan. While recognising that ministers usually have statutory rights or reserve powers to intervene, and that such interventions may be necessary in exceptional circumstances, it is in the interests of entitlement holders that those be exercised rarely, with full transparency, and in accordance with previously signalled principles and processes.

Finding 6.6 Registers to provide security for water entitlements are improving, especially in Victoria and Queensland. Registers outside the MDB states are significantly trailing developments in MDB states. While progress has not yet been sufficient to achieve compatible registers in the MDB, COAG commitments to the development of a National Water Market System are being progressed and are expected to address this matter.

Finding 6.7 Water to meet Indigenous social, spiritual and customary objectives is rarely clearly specified in water plans. It appears often to be implicitly assumed that these objectives, where considered at all, can be met by rules-based environmental water provisions.

Recommendation 6.5 The Commission recommends further exploration of Indigenous needs in relation to water access and management, and mechanisms to meet those needs. The Commission proposes to initiate a national study on this matter.

Finding 6.8 While the NWI Agreement recognises (through special clause 34) the potential for further policies and measures beyond the agreement for minerals and energy industries, the circumstances in which they would apply are not defined and identified in a consistent and transparent manner. Little progress has been made in the five years since the signing of the NWI in fleshing out the special provisions for the minerals and related industries. As a consequence, there has been little integration of those industries with broader water markets and water planning processes, despite the potential for considerable benefits in many cases.

Recommendation 6.6 The Commission recommends that NWI-consistent water access entitlements be defined for the minerals, petroleum and other industrial sectors (including plantations and other extractive industries) in order to provide those industries with secure access and the ability to trade with other users. Particular circumstances (such as mine dewatering and return flows) and potential third-party impacts that might limit the applicability of NWI-consistent water access entitlements should be clearly identified and managed. This recommendation is particularly important for Western Australia and the Northern Territory, where legislative reforms have still not been finalised.

Finding 6.9 There are a range of new and alternative urban water sources emerging, such as desalinated water, purified recycled water, and stormwater reuse. Access to some new and alternative sources is less secure than for conventional sources (particularly stormwater and managed aquifer recharge). However, providing secure access is challenging due to the interrelationships within the urban water cycle.

Recommendation 6.7 The Commission recommends that jurisdictions identify and pursue reforms to ensure that (i) secure access is provided for all new and alternative sources of urban water supply so that they can compete on an equal footing with more conventional supply options, and (ii) growth in the use of particular sources does not undermine the security of entitlements in other parts of the urban water cycle or adversely affect third parties and the environment. These benefits could be provided through NWI-consistent water access entitlements, or through alternative licensing or contractual arrangements.

Water markets and trading

Finding 7.1 Jurisdictions have progressed water markets to the point where very large volumes of water are being traded—and significant benefits are flowing to buyers and sellers both within and outside the Murray–Darling Basin. Movements in water have facilitated industry adjustment and economic development.

Finding 7.2	The annual 4% limit on water entitlement trading out of an irrigation area is being reached in regions in several basin states, with a wide range of undesirable consequences. The Commission considers that the 4% limit has impeded the use of buyback programs to assist in returning overallocated water systems to sustainable levels of extraction; unfairly and arbitrarily penalised willing sellers of irrigation entitlements; distorted patterns of water trade out of irrigation areas (including interstate trade); inhibited desirable and necessary structural change; and complicated interstate collaboration in other areas of water reform.
Recommendation 7.1	The Commission recommends the coordinated removal of all artificial barriers to trade, including the 4% limit. The Commission considers that buyback programs should continue without being constrained by the 4% limit or other trade barriers in order to provide financial resources directly to entitlement holders and facilitate adjustment. The Commission supports monitoring and enforcement of the new water market and charge rules for the MDB by the ACCC, and the trading rules by the MDBA, to ensure that the rules are implemented effectively.
Finding 7.3	The Commission welcomes the Victorian Government's recent decision to remove the 10% non-water user limit.
Finding 7.4	Difficulties in separating water from a bulk entitlement have been a constraint to trade in the past, particularly in South Australia and New South Wales. However, the monitoring and enforcement by the ACCC of the recently established market rules due to come into full effect on 1 January 2010 should assist in removing this significant restriction to water trade under a bulk entitlement structure.
Finding 7.5	The Commission is concerned that sub-dividing co-held entitlements typically held by joint water supply schemes under the NSW Water Management Act 2000 may be difficult and potentially costly, particularly where an application to the New South Wales Supreme Court is required. These difficulties are not addressed through the water market rules as the rules have limited application to co-held entitlements.
Finding 7.6	While exit fees are prohibited under the MDB Agreement, the compulsory termination of delivery entitlements that automatically trigger termination fees as a condition of water trade by operators, particularly in many privately operated areas in New South Wales, effectively act as exit fees. The Commonwealth water charge rules (termination fees) and water market rules should address this trade barrier, once they come into full effect on 1 September 2009 and 1 January 2010, respectively.
Finding 7.7	It is commonly thought that unbundling water from land is largely complete. However, the Commission finds that, while significant progress has been made in the process of unbundling, additional reform is required in most states.
Recommendation 7.2	The Commission recommends that the feasibility and benefits of further unbundling, including in unregulated surface water and groundwater systems, should be considered in all states, and where jurisdictions decide against further unbundling the reasons for that decision should be published.
Finding 7.8	In some states there have been delays in completing water planning, which has precluded water trading in most of those systems. However, some jurisdictions have demonstrated that they are prioritising planning processes, with preference to those water systems where the expected benefits of water trading are greatest.
Finding 7.9	There are a number of other potential constraints to the development of transparent, competitively neutral, and efficient water markets. These include interstate and intrastate allocation processes and government interventions (examples are listed in Section 7.3.1.9). However, there is limited information available to assist the Commission in the assessment of these matters. The Commission intends to follow up these issues as information becomes available. In the meantime, the processes to develop the Basin Plan provide a further opportunity to explore them.
Recommendation 7.3	The Commission suggests that an assessment of factors potentially affecting the development of water markets across the Murray–Darling Basin (see examples listed in Section 7.3.1.9) be undertaken in order to determine whether they distort market outcomes or undermine confidence in the market, and to recommend potential reforms. The development of the Basin Plan by the MDBA, including the water trading rules based on advice from the ACCC, could inform such an assessment.

Finding 7.10	While there have been some improvements, delays in processing transactions, especially in water access entitlements, continue to undermine the efficiency and effectiveness of water markets. Public reporting of performance against COAG service standards is expected to drive improvements in trade processing times, both within and across jurisdictions, in the period ahead.
Finding 7.11	Information provision for and confidence in the water market are improving with new information sources and expected web-based information aggregation, notably the annually published Australian water markets report, the development of a National Water Market System and the Bureau of Meteorology's Australian Water Resources Information System (AWRIS). The Commission is concerned that the recommendations of the 2006 Pricing and Personal Information Disclosure Consultancy Project have not been fully adopted by NWI parties. These recommendations would provide a good framework for improving the quality of water market information.
Recommendation 7.4	The Commission recommends that NWI parties adopt consistent approaches to disclosure in line with the recommendations of the Commission's 2006 Pricing and Personal Information Disclosure Consultancy Project. The Commission supports further improvements to overcome current limitations of registry arrangements by ensuring full and accurate reporting of the volume and price of entitlement and allocation trades on individual state water registers, including for government purchases for the environment.
Finding 7.12	The level of confidence in market intermediaries is critical to the continued growth and efficient operation of water markets. The Commission recognises that significant efforts have been made to improve confidence in market intermediaries, in particular through the provision of better information about rights and obligations under consumer protection legislation by relevant authorities (for example, the ACCC). While the Commission is concerned about reported incidents of misconduct, and acknowledges arguments in favour of regulation from some market participants, there is not yet a compelling case for industry-specific regulation of market intermediaries beyond the generally available trade practices and consumer protection regulations.
Recommendation 7.5	The jurisdictions and the ACCC should continue to monitor the actions of market intermediaries and should adopt any further measures considered necessary to preserve and build user confidence in the water trading system and to advance water market objectives under the NWI.
Finding 7.13	Water allocations and water access entitlements remain the most widely traded water products, while other instruments have been slow to develop. The development of a wide range of different products will enable better risk management and better matching to the particular needs of different water users (including irrigators, environmental water managers and urban water corporations). As Australian water markets further develop, such alternative and complementary products should be encouraged.
Finding 7.14	Even though tagged trade was agreed as the preferred approach in relation to interstate trading arrangements, the introduction of tagged interstate entitlement trade has not been accompanied by an increase in interstate entitlement trade. The Commission considers that facilitating and promoting interstate entitlement trade is an important next step in water market reform.
Recommendation 7.6	The Commission recommends that having decided to adopt tagged trade, jurisdictions do more to simplify and promote its use. The Commission notes that the ACCC will be investigating the issue of how to improve tagged trading.
Recommendation 7.7	The Commission recommends that direct impacts of water trade on third parties (for example, congestion and environmental externalities) be addressed through the most cost-effective instrument (such as water use licences) rather than by imposing trading restrictions where such restrictions are not based on hydrological or ecological constraints. Indirect impacts of water trade should not be managed by restricting the water market—they are better addressed directly through other policies (such as structural adjustment measures). Given the increasing volumes of water trade (including as a result of environmental water purchases), the Commission considers that further efforts are now required to ensure that rules governing water trade account for and manage the impacts of transmission losses, to ensure that third parties are not adversely affected.

Pricing, demand management and other policy initiatives

Finding 8.1

With the exception of the Northern Territory and Queensland, jurisdictions have demonstrated that they have achieved lower-bound pricing and that price setting processes are consistent with, or moving towards being consistent with upper bound pricing for metropolitan water storage and delivery. The Northern Territory has announced significant price increases designed to move towards lower-bound pricing by 2011–12. Queensland recently made a transparent decision to subsidise new water grid assets. The Commission notes that such a subsidy, although transparent, is inconsistent with Queensland's NWI commitments to implement upper-bound pricing in metropolitan areas.

Finding 8.2

Government grants for urban water infrastructure projects can frustrate cost-recovery objectives and distort commercial incentives for investment. By reducing the cost of water to urban water customers, government grants can distort consumer responses.

Recommendation 8.1

The Commission recommends that, consistent with the sound principles underlying the upper-bound pricing objective of the NWI, governments avoid making grants for conventional urban water infrastructure. Exceptions may be justifiable to encourage innovation, deal with externalities, or meet community service obligations.

Finding 8.3

There has not been sufficient progress in the movement towards consistent urban water pricing policies. However, draft national pricing principles have been developed which apply to both urban and rural water. These principles apply to recovery of capital expenditure, setting urban water tariffs, recovery of costs of water planning and management activities, and pricing for recycled water and stormwater reuse.

Recommendation 8.2

The Commission recommends that NWI parties move quickly to endorse the draft national NWI pricing principles at Ministerial Council level and implement those principles as soon as is practical.

Finding 8.4

Independent economic regulation is promoting transparency, rigour, and at least broad consistency in price review and price setting processes in Victoria, New South Wales and the ACT. While the Commission acknowledges some progress in other jurisdictions, such as South Australia's recent announcement that the role of the Essential Services Commission will be extended, South Australia, Tasmania, Western Australia and the Northern Territory do not yet benefit from fully independent economic regulation.

Recommendation 8.3

While recognising recent progress, the Commission recommends that more be done in Tasmania, South Australia, Western Australia, Queensland and the Northern Territory to establish and put into operation independent economic regulation to improve the efficiency, accountability, national consistency and transparency of water pricing across Australia.

Finding 8.5

The Commission has identified a number of pricing reforms that go beyond the requirements of the NWI, which have the potential to improve efficiency.

Recommendation 8.4

The Commission recommends that jurisdictions consider pricing reforms that go beyond NWI requirements, such as an end to inclining block tariffs, a move away from water charges based on property values where they still exist, administered scarcity pricing, and using more direct instruments than water charges to pursue social equity objectives.

Finding 8.6

As the Commission found in 2007, New South Wales and Victoria have the most developed policies for recycled water and stormwater pricing. However, there has been some further progress in other jurisdictions.

Recommendation 8.5

The Commission recommends that faster progress be made to adopt and implement draft principles for pricing recycled water and stormwater, given that most jurisdictions are developing recycled water and stormwater supply options as part of diversifying water supply portfolios.

Finding 8.7

Across all jurisdictions, progress has been mixed and slow in developing trade wastes pricing policies that encourage the most cost-effective methods of treating industrial wastes. However, several jurisdictions are in the process of undertaking such reviews, including New South Wales, Victoria, the ACT and Western Australia.

Finding 8.8

In a number of states, a water usage charge is not levied directly on all users, who therefore do not receive a price signal providing an incentive to use water prudently. For example in some states, tenants are not billed in full or provided with information on their water usage.

Recommendation 8.6	The Commission recommends that charges for water usage be applied directly to all users, where this is cost-effective. For example, the Commission considers that, across Australia, significant scope exists to bring building tenants into a transparent water charging environment. The current partial coverage of tenants is inconsistent with sound long-term water resource management principles and will ultimately need to be rectified.
Finding 8.9	The Commission observes that there is currently intensive activity in the energy sector to introduce smart metering. The Commission also notes that some states have moved to more frequent billing cycles to provide improved price signals to urban customers.
Recommendation 8.7	In the urban water sector, the Commission encourages governments to consider smart metering. The Commission also encourages moves to more frequent billing cycles where it facilitates more effective price signals to customers.
Finding 8.10	The Commonwealth and state governments are making major investments in irrigation renewal projects. While such investments are generally a positive contribution to better water management, government funding has the potential to distort water use and economically efficient investment decisions.
Recommendation 8.8	The Commission recommends that implications for future water charging should always be made transparent, especially to future users of the infrastructure, when irrigation infrastructure investment proposals are being developed. Investment should be consistent with NWI commitments relating to full cost recovery, and the draft NWI pricing principles on recovery of capital.
Finding 8.11	Progress has been made by most states in implementing best practice pricing in rural and regional areas. All jurisdictions have adopted consumption-based charging, and most government-owned rural water service providers have achieved lower-bound pricing or have transparent community service obligations in place to account for any revenue shortfall below the lower revenue bound. However the recent National Performance Report by the Commission and the Water Services Association of Australia found that the financial performance of regional and rural water utilities is highly variable and generally below that of metropolitan urban utilities.
Finding 8.12	Queensland, Victoria and the Commonwealth have implemented various fixed-charge drought relief measures. The impact of fixed charge drought relief is difficult to quantify. In principle, if those measures were to persist, they could lead to systematic subsidisation of water users, which might affect overall efficiency and distort patterns of adjustment.
Finding 8.13	Progress in meeting NWI commitments for cost recovery for water planning and management for both surface and groundwater has been very limited. Progress in this area is long overdue in Queensland, Western Australia, Victoria, South Australia and the Northern Territory. Further work is required to ensure that water planning and management activities undertaken by the MDBA are subject to a consistent and transparent cost-recovery framework.
Finding 8.14	The Commonwealth Water Act 2007 gives insufficient powers to the Minister to progress water planning and management charge rules in the way envisaged in the NWI, as it requires a regulated water charge to be imposed for the water charge rules to apply. As the current application of charges in each state differs, the rules would not apply consistently to all activities or water users in the Murray–Darling Basin, making it difficult to achieve NWI and Basin water charging objectives and principles consistently across the basin.
Recommendation 8.9	The Commission recommends that draft NWI pricing principles for water planning and management be agreed and implemented quickly so that jurisdictions can advance NWI commitments to recover water planning and management costs. Recognising that the Water Act 2007 gives insufficient power to the Minister to progress water planning and management charge rules in the Murray–Darling Basin as envisaged in the NWI, the Commission recommends that once agreed, the NWI pricing principles for water planning and management be implemented within the MDB.
Finding 8.15	Jurisdictions have developed and implemented a variety of urban demand-management programs to encourage water use efficiency and behavioural change, over and above the limited requirements of the NWI.
Finding 8.16	There have been significant reductions in per capita consumption and significant improvements have been made in reducing system leakage. However reductions in consumption are likely to be due to a variety of factors, including behaviour change, water use efficiency measures and water restrictions.

Finding 8.17

Jurisdictions have implemented a number of programs aimed at improving on-farm water use efficiency. However, a range of factors drive water use efficiency and innovation. Most importantly, the combination of prolonged drought, rising water prices, and opportunities for trade has led to significant private investment by farmers in order to use water more efficiently. Incentives linked to public benefits, information provision, and extension services for investment for water use efficiency and innovation have a role to play in promoting the objectives of the NWI.

Recommendation 8.10

While policies and programs that improve technical efficiency are worthwhile and are achieving results, the Commission encourages NWI parties to do more to develop policies and programs that will deliver multiple benefits beyond technical water use efficiency. The Commission encourages a rigorous economic assessment of the full benefits and costs (including external benefits and costs) of policies and programs prior to implementation.

Recommendation 8.11

The Commission recommends that the NRMCC performance indicators be refined to better reflect the important policy principle that partial measures of productivity, such as technical water use efficiency, may not necessarily be in the overall interests of the community or the environment. There are often costs associated with improving technical water use efficiency that need to be considered. Government intervention is best focused on addressing information, institutional or process failures, while market signals of the value of water provide the best incentive for private investment and innovation.

Finding 8.18

Some states have implemented or investigated the use of pricing and market-based instruments to address environmental externalities. All states have further work to do to explore the feasibility of such actions.

Recommendation 8.12

The Commission recommends that NWI parties renew collective and individual efforts to respond to NWI clause 73 (use of pricing and markets to deal with environmental externalities), given that well-designed externality pricing can be a powerful and enduring way of dealing with the environmental impacts of water provision and use.

Risk assignment

Finding 9.1

The specific risk assignment provisions of clauses 48–50 of the NWI have been adopted only in New South Wales, and by the Commonwealth in the Murray–Darling Basin. Queensland and the ACT have stated that they intend to amend legislation to adopt the NWI provisions as a result of recent changes to the Commonwealth Water Act 2007. Other jurisdictions have adopted (or intend to adopt) alternative risk assignment approaches in accordance with clause 51 of the NWI or have not yet decided their approach.

Finding 9.2

The consultation process for the 2009 Biennial Assessment has reinforced that risk assignment is considered by stakeholders to be extremely important. However, there is significant confusion and uncertainty about the mechanics and implementation of the NWI risk assignment framework, and thus its practicality. That uncertainty is caused in part by the current lack of clarity about the transition arrangements in the MDB Intergovernmental Agreement and Commonwealth Water Act 2007 for jurisdictions that have adopted the specific NWI risk assignment provisions and those jurisdictions with alternative approaches.

Finding 9.3

There is widespread debate and uncertainty about the best approach to risk assignment and limited guidance in the NWI upon which the Commission can assess the relative merits of either the specific NWI risk assignment provisions or alternative provisions developed under clause 51. In the Commission's view, it is important to address that uncertainty in order to provide water access entitlement holders with greater planning and investment certainty over how changes in water availability will be dealt with.

Finding 9.4

Stakeholders have raised the need for a nationally consistent approach to risk assignment, particularly as a result of the MDB Intergovernmental Agreement and new institutional arrangements for the MDB. While there are potential benefits in a nationally consistent approach, there are likely to be significant questions about its feasibility, given the divergence in approaches across the jurisdictions.

Recommendation 9.1

The Commission recommends that all jurisdictions (including the Commonwealth) clarify the specific processes that will be used in implementing risk assignment provisions. Jurisdictions should develop and implement communication strategies and disseminate easily accessible written guidance covering all elements of the risk assignment framework, including case study examples of how risk assignment would apply under various circumstances.

Structural adjustment and water reform

Finding 10.1

Water-dependent communities have been dealing with adjustment pressures for many years as a consequence of changes in commodity prices, exchange rates and social trends. The combination of future expectations of reduced total water availability, and the national imperative to provide a greater share of the available water for the environment, particularly in the MDB, means that the irrigation sector faces significant additional adjustment pressures in the years ahead. For example, the Commission estimates that in the order of 30% less water could be available for irrigated agriculture in northern Victoria in the years ahead.¹

Recommendation 10.1

Acknowledging the Commonwealth's valuable work to date through the CSIRO, the Commission recommends further work outside the MDB to quantify and localise the extent of changes to future water availability for consumptive use as a result of climate change and efforts to move to sustainable levels of extraction, as is currently being done for the development of the new Basin Plan within the MDB. The findings of work on the impacts of climate change should be progressively refined and updated as guidance for necessary adjustment decisions by farmers, families and communities.

Finding 10.2

Water markets play a critical role in facilitating structural adjustment by providing entitlement holders with flexible opportunities to make their own business adjustment decisions. Artificial barriers to water trade impede flexible adjustment decisions by individual entitlement holders. Barriers to water trade have also hindered efforts to address overallocation, and facilitate adjustment, through the Commonwealth buyback program. Such purchases assist adjustment by reducing the gap between current diversion levels and new lower sustainable diversion limits that can be anticipated in the new Basin Plan.

Recommendation 10.2

The Commission recommends that all artificial barriers to inter-regional/inter-district trade be removed in a coordinated manner. In parallel, the Commission recommends that communication efforts continue to be made to improve the transparency of the Commonwealth buybacks and their links with the transition to sustainable diversion limits under the new Basin Plan, so building community understanding and support and enabling more informed decision making by entitlement holders. For example, the Commission recommends that the Murray–Darling Basin Authority progressively issue guidance on the way that environmental objectives are likely to be pursued, locally and across the MDB (see Recommendations 7.1 and 4.3).

Finding 10.3

Water trade and environmental purchase programs can facilitate the necessary and positive process of adjustment as a consequence of shifts in irrigation water availability. Entitlement holders receive direct financial returns from their sales. However, sales of entitlements do not provide direct financial resources to non-entitlement holders (such as local businesses). While non-irrigators may benefit indirectly from the sale of entitlements, the distribution of those benefits through communities will vary. This does not mean that effective buybacks or water trade should be delayed or constrained in any way, or that separate financial assistance is warranted.

Finding 10.4

A variety of national, state and region-specific additional structural adjustment measures are in place across rural Australia. There is a risk that they may be uncoordinated, ineffective and/or counter-productive, particularly where they attempt to artificially constrain adjustment.

¹ The Commission stresses that this estimate is intended to be indicative only, and that to obtain an accurate estimate a much more rigorous analysis would be required. As discussed in detail in section 10.2.2, a number of caveats apply and various simplifying assumptions were made. Importantly, this figure is not an estimate of the reductions that might eventuate as a result of the new Basin Plan, which will aim to address past overallocation as well as the impacts of climate change.

Recommendation 10.3

Governments should consider the adjustment implications of their policies and programs, with the aim of ensuring that distortions are minimised wherever possible. The Commission considers that where governments are concerned about the outcomes of adjustment processes, the merits of the case for any intervention, and the design of any measures, should be rigorously screened through a consistent framework to ensure that they do not impede the outcomes of reforms.

Finding 10.5

There is evidence of a great deal of uncertainty in the community in regard to the implications of further water reform for Australia's irrigation sector. Businesses, investors and communities have submitted to the Commission that they need to be fully informed about the future direction, priorities and timing of water reform. They argue that reform processes will be important factors to be taken into account in their long-term decision making. The Commission acknowledges that the Commonwealth is making considerable efforts to provide such information and to develop new consultative mechanisms for a two-way flow of information.

Finding 10.6

Water users and irrigation-dependent communities have argued that they require a clearer articulation of government intentions with respect to water buyback programs and the management of environmental water.

Finding 10.7

There is a risk of overinvestment in infrastructure system renewal if the likely extent of future structural adjustment is not adequately recognised. Careful attention should be given to the potential synergies and conflicts between the Commonwealth buyback and infrastructure renewal programs and their appropriate sequencing. This is not an argument for delay in buybacks. On the contrary, the Commission considers that progress with buybacks will improve clarity about longer term levels of water availability, thus enabling more cost-effective infrastructure investments.

Finding 10.8

Diverging environmental purchase programs from the most cost-effective water purchasing strategy by offering price premiums for water entitlements in targeted areas prior to investments in irrigation system renewal, or only allowing purchases from such targeted areas, is unlikely to be effective in practice and risks distorting water market outcomes. If environmental purchasers pay above the market price, less water will be recovered for the environment.

Recommendation 10.4

The Commission recognises that there are opportunities now available to minimise the risk of over-investment in irrigation renewals and accelerate buyback in particular areas in ways that do not distort the water market in the same way that paying a premium price for environmental purchases, or other conditions, might.

For example, individuals or groups of irrigators could be encouraged to cease, reduce or alter access to irrigation infrastructure prior to renewal, thus reducing costs and increasing water savings. The same irrigators might then choose to sell some or all of their entitlements to the Commonwealth, at market price.

There are a number of other instruments currently operating at regional scales that might also encourage efficient and sustainable outcomes, including:

salinity credits and impact zones such as are already in operation in the Sunraysia region to provide financial incentives to reduce irrigation in high-impact areas

other price or market-based instruments for environmental outcomes (e.g. the Victorian Bushtender/ECotender program).

Within the Basin in the context of the Water for the Future Irrigator-led Group Proposals program, further consideration should be given to the feasibility of expanding or tailoring the use of these instruments in this context.

Finding 10.9

Despite considerable recent and valuable work to improve understanding of structural adjustment, the Commission considers that there is insufficient understanding of the processes and causes of structural adjustment and a paucity of data at the necessary spatial and temporal scales to enable effective monitoring of adjustment. The Commission is concerned about this lack of understanding, as the success of the overall national water reform process will ultimately depend on how well the adjustment process proceeds in irrigation-dependent communities.

Recommendation 10.5

The Commission supports further efforts to improve understanding of structural adjustment. Addressing current deficiencies in the availability of data to monitor and assess adjustment, including separating out the relative importance of water reform from other factors driving change, is required.

Urban water

Finding 11.1

The continued reliance on urban water restrictions across many parts of Australia indicates that meeting the NWI objective of reliable water supply continues to be a challenge. Severe restrictions impose significant costs on water users, government authorities and the broader community, and should thus only be applied when their benefits clearly outweigh those costs. In general, the Commission considers that urban water restrictions should be carefully reserved as one option for managing the available water supplies during periods of drought and should not be relied on for extended periods.

Finding 11.2

Despite recent efforts and substantial investments, urban water supply is yet to achieve nominated levels of security, as demonstrated by the protracted and costly water restrictions which remain in place in most urban centres. While desired levels of security have generally not been achieved, the targeted levels of security, and the shortfalls meeting the targets, are now at least becoming more transparent.

Finding 11.3

Significant efforts and major investments have been made to diversify our towns' and cities' water supplies towards less rainfall-dependent sources. There has been a considerable increase in the uptake and use of new and alternative water sources, particularly desalination, large-scale non-potable recycling, sewer mining, greywater collection and reuse, and rainwater tanks. These developments are consistent with the NWI's support for integrated urban water cycle management and the development of water sensitive cities.

Recommendation 11.1

Considering the extent of investment in urban water security and continuing challenges associated with balancing supply and demand in an efficient and sustainable manner, the Commission encourages speedier implementation by jurisdictions of the COAG National Urban Water Planning Principles.

Finding 11.4

Since 2004, most jurisdictions have strengthened long-term planning and strategy development to secure long-term supply. All jurisdictions have, or are in the process of completing, strategic planning processes to determine future requirements against a range of climate scenarios. An important result from current strategic long-term planning is that, for a number of major cities, further significant investments will be needed over the next 5–25 years to meet growth in demand for water as a result of population and economic growth.

Finding 11.5

Climate change is increasingly being taken into account in urban water planning processes, but a variety of approaches are being used and there is no common national methodology or even best practice guidance. The Commission supports the COAG decision that jurisdictions will publish guidance to facilitate best practice scenario planning for climate variability and climate change impacts on urban water supply and demand by water utilities and government.

Finding 11.6

While some jurisdictions have made progress in more rigorous evaluation of supply and demand side options, there is scope for taking account of new information, use of trigger levels and more systematic review and adaptation provisions.

Recommendation 11.2

The Commission recommends further improvement in the use of urban water plan review processes and advanced tools for analysing and selecting efficient investment portfolios and strategies that best manage climatic uncertainty. Water plans should not just respond to current circumstances, but should outline flexible strategies that will apply under future conditions expected as a result of climate change.

Finding 11.7

While urban water planning is now based on a more diverse portfolio of supply and demand options, a number of policy decisions continue to constrain certain water supply options (for example, explicit or implicit limitations on consideration of new dams, rural–urban trading, indirect potable reuse, interstate trading and interbasin transfers). In the Commission's view, none of these options should be ruled out before a robust, open-minded and transparent comparison of all options to weigh up all benefits, costs and risks.

Finding 11.8

Most jurisdictions have embraced greater integration of the urban water cycle and have made substantial progress since 2004 in terms of policy development and implementation of demonstration projects.

Finding 11.9

Many jurisdictions have programs to fund demonstration projects that contribute to the development of water sensitive cities. However, achieving broader adoption of water sensitive urban design will require the removal of obstacles, including further regulatory and institutional reform, investment in capacity building and development of tools and standards that provide a more positive environment for investment.

Recommendation 11.3	The Commission considers that realising water sensitive cities requires improved methodologies to quantify the full costs, benefits and risks (including environmental costs and avoided costs of infrastructure upgrade) associated with new and alternative sources to enable integrated and decentralised options to compete on an equal footing with more traditional options. The Commission recommends development of a national strategy to identify and quantify the potential for, and advance the development of, water sensitive cities in Australia.
Finding 11.10	The Commission considers that progress in engaging effectively with the community and stakeholders is improving but remains mixed.
Finding 11.11	In general across Australia, compliance with drinking water quality standards has remained very good in major cities, with no major incidents. Some regional areas have reported less consistent compliance with drinking water quality standards.
Finding 11.12	Many utilities have improved performance in the management of sewage spills to the environment, and the combination of increased treatment standards and recycling targets has led to improvements in the discharge of treated effluent to the environment. Further work is required in some cases to ensure consistent performance across Australia and to meet increasing community expectations.
Finding 11.13	The recent development of sophisticated national guidelines for the safe and effective implementation and regulation of both potable and non-potable reuse is the first step in support of growth in new and alternative sources of water supply. However, regulations and guidelines for reuse and recycling are lagging behind actual activity at a variety of scales. In particular, it is difficult to cost-effectively apply the national guidelines to smaller, decentralised and on-site recycling systems, and improved coordination and national consistency across regulatory requirements are necessary.
Recommendation 11.4	The Commission recommends that jurisdictions implement mutual interstate recognition and better processes to validate, verify and approve smaller recycling systems. Local government approvals would benefit from streamlining and the opportunity to rely on generic state and national approvals for new water reuse systems.
Recommendation 11.5	The Commission recommends that institutional arrangements in the water sector be subject to a national review to identify opportunities for competition and private or public sector participation and innovation.
Finding 11.14	The Commission supports initiatives to clarify responsibilities for longer term urban water planning in each jurisdiction.
Finding 11.15	The Commission is supportive of the significant efforts of jurisdictions such as Tasmania and Queensland to reassess the structure and institutional arrangements for urban water supply and of the changes made to improve the efficiency and quality of services provided to urban water customers. New South Wales has commenced a similar process but results seem further off. Mindful of the steadily rising technical sophistication of water supply operations, further reform is required for regional water utilities (particularly smaller utilities) to improve their planning, reporting and pricing functions and ensure that the financial and specialist technical resources are available to enable the provision of cost-effective, safe and reliable water supplies into the future. For example, structural/organisational reforms (for example, aggregation and shared service models) and regulatory reforms may warrant further consideration in some rural and regional areas, particularly where services are currently provided by local government authorities.
Finding 11.16	The Commission strongly supports the establishment of effective, independent economic regulation of the urban water sector to provide incentives for cost efficiency, pricing efficiency and the provision of required levels of service, and to support the development of access-based competition. The Commission believes the arrangements could be usefully strengthened in several jurisdictions, while recognising recent progress in this regard, particularly in South Australia.
Finding 11.17	The Commission welcomes steps in some jurisdictions to introduce effective third-party access regimes as consistent with the efficiency and security objectives of the NWI. The Commission encourages other jurisdictions to follow suit, taking into account the National Competition Council's views on the design of such regimes.
Finding 11.18	The Commission supports the COAG decision that jurisdictions will give active consideration to broader pricing reforms that go beyond the NWI requirements. This should include options for more market-based pricing approaches.