Australian Government

Murray–Darling Basin Authority

MDBA Submission

Productivity Commission

Murray–Darling Basin Plan: Implementation Review 2023

July 2023

Published by the Murray–Darling Basin Authority
MDBA publication no: 17/23
ISBN (online): 978-1-922699-32-9

GPO Box 1801, Canberra ACT 2601
engagement@mdba.gov.au
1800 230 067
mdba.gov.au

Cataloguing data
Title: MDBA Submission, Murray–Darling Basin Authority Canberra, 2023. CC BY 4.0

Accessibility
The Murray–Darling Basin Authority makes its documents and information available in accessible formats. On some occasions the highly technical nature of the document means that we cannot make some sections fully accessible. If you encounter accessibility problems or the document is in a format that you cannot access, please contact us.

Acknowledgement of the Traditional Owners of the Murray–Darling Basin
The Murray−Darling Basin Authority pays respect to the Traditional Owners and their Nations of the Murray−Darling Basin. We acknowledge their deep cultural, social, environmental, spiritual and economic connection to their lands and waters.

The guidance and support received from the Murray Lower Darling Rivers Indigenous Nations and our many Traditional Owner friends and colleagues is very much valued and appreciated.

Aboriginal people should be aware that this publication may contain images, names or quotations of deceased persons.

Version control			
Version	**Revision date**	**Author/modifier**	**Distributed to**
v.			

Contents

Introduction

The Murray–Darling Basin Authority (MDBA) welcomes the Productivity Commission's second 5-yearly review into the implementation of the Murray–Darling Basin Plan. The MDBA is pleased to make a submission and is available to assist the Productivity Commission with any further information that may be required for the assessment of the implementation of the Basin Plan.

The Murray–Darling Basin Plan: Implementation Review 2023 is a valuable independent assessment of progress to date, but also an opportunity to examine preparations underway for the MDBA's delivery of the upcoming 2026 Basin Plan Review.

In navigating the challenges of the remaining elements of Murray–Darling Basin Plan implementation, we can lose sight of how far we have come since the plan was first conceived. We are now 10 years into the process of bringing the many different parts of the Basin Plan to fruition, and while there is still work to do, it is also an important time to reflect on achievements and progress made.

The structure of this submission is as follows:

- a summary of the key issues affecting implementation and future management of the Basin into the future
- responses to the Productivity Commission's key questions
- the MDBA's progress against the accepted recommendations from the Productivity Commission's Murray–Darling Basin Plan: Five Year Assessment in 2018.

Part A – Key issues

Implementation of the Basin Plan

At its heart, the Basin Plan shares available water between consumptive users and the environment, so the Murray–Darling Basin's rivers and groundwater can be sustainably managed. The introduction of the Basin Plan was recognition that change was needed to past attempts to share the water, and that a whole-of-Basin approach was required to manage the Basin's water resources in the national interest, including to meet Australia's international obligations. The Plan also includes the Basin-scale approach for managing environmental water and protecting water quality and spells out the requirements that must be met by Basin state water resource plans to reflect that Basin-scale approach.

Minister for the Environment and Water, the Hon Tanya Plibersek recently sought the Authority's advice on progress to implement the Basin Plan. On 25 July 2023, the Authority published this advice and the latest editions of 2 key reports that underpin it:

- the 2023 mid-year Basin Plan Report Card, the tenth in a series of report cards that provide short, timely updates on the progress of implementation, and
- the 2023 Sustainable Diversion Limit Adjustment Mechanism (SDLAM) Assurance Report, which is the fifth annual update published by the MDBA on the progress of SDLAM projects.

The Authority's view is that there is no possibility that Basin Plan implementation, as intended under current legislative settings, will be finalised by 30 June 2024. In summary:

- The implementation of the supply and constraints package of measures under the Sustainable Diversion Limit Adjustment Mechanism will fall short of expectations and result in less water available in the system for consumptive use.
- There will be a significant shortfall in the recovery of 450 gigalitres (GL) of water through efficiency measures, in ways that are socio-economically neutral or improved.
- The accreditation of outstanding New South Wales water resource plans is well behind schedule.
- The commitment of Basin governments to implementing the Northern Basin Toolkit has slowed and valuable elements of the package will not be implemented by the agreed deadline.

Climate change and sustainable water limits

The Basin's climate is naturally variable and prone to extremes, and while the Basin Plan includes measures that have supported the MDBA's response to climate variability and longer-term climate change, the challenge ahead to respond to climate change is significant.

The CSIRO and the Bureau of Meteorology both indicate a warmer, drier future with more frequent droughts and extreme weather events. According to the CSIRO, a plausible future scenario is a reduction in river flows of 20 to 30% by 2050.

Climate change is a Basin-scale challenge. It will change the amount of water available for use and for the environment into the future. It will change the characteristics of connectivity of the Basin's rivers and the Basin ecosystems for decades to come.

Climate change is one of 4 focus areas for the 2026 Basin Plan Review. The MDBA will be asking how the Basin Plan can be improved to respond to climate change. It will explore how best to plan for an uncertain future and what actions we can take to help the Basin adapt to a changing climate. It means incorporating up-to-date climate data and science to ensure levels of water take are sustainable, and identify additional strategies and activities that will help to deliver the best outcomes for social, cultural, environmental and economic values.

Since the Basin Plan was developed, climate science and the MDBA's understanding of climate change impacts on the management of water resources and the resilience of rivers and wetlands in the Basin has significantly improved, and further work is underway. The MDBA is leading several research programs to advance the climate science and better understand possible impacts to social, cultural, economic, and environmental conditions. Initiatives such as the Murray–Darling Water and Environment Research Program, the Basin Condition Monitoring Program, the Sustainable Rivers Audit, and the Sustainable Yields project are contributing to a deeper knowledge of the impacts in the Basin.

This research will inform the Basin Plan Review. In late 2025, a Murray–Darling Basin Outlook will draw together the research to build a shared understanding of the conditions and trends in the Basin, to assess the risks to the broad range of values, and to describe how the Basin's environmental, economic, cultural and social outcomes may change under future climate scenarios.

There are many actions that will increase the Basin's resilience to climate change but are beyond the remit of the Authority and the Basin Plan, and indeed the remit of water management alone. Examples

include improving the integration of natural resource management and water resource management at the local scale, or improving integrated pest management, or supporting innovations to promote adaptation and sustainability in farming businesses and systems. These types of measures can bolster ecosystem, business and community resilience to climate change. A key challenge is understanding how updated knowledge and the Basin Plan settings can work alongside the efforts of others to support climate adaptation.

A central pillar of the Basin Plan is setting the limits on water take (sustainable diversion limits, or SDLs) for the whole of the Basin. Through the Basin Plan Review, the MDBA will consider the environmentally sustainable level of take (ESLT) and the associated surface water and groundwater SDLs using the best available knowledge. There is rightly intense public scrutiny around the method, modelling and decision-making process for determining the settings of the Basin Plan, including the permitted level of water take. If change is needed the MDBA will carefully examine the options and test their impact.

First Nations

The Murray–Darling Basin is home to more than 100,000 First Nations people from over 40 different Nations. The MDBA acknowledges, recognises and values the deep cultural, social, environmental, spiritual and economic connection that First Nations people have to their lands and waterways.

While the past 10 years of water reform has seen a welcome step change and improvement in the acknowledgement and involvement of First Nations people in water management in the Murray–Darling Basin, there is unfinished work and more needs to be done. The deep significance of First Nations' knowledge passed down over the generations is ever more pressing and more precious as our climate changes.

We all need to work harder to provide a greater place for First Nations people in water management. First Nations people have told the MDBA they have strong aspirations for greater involvement in decision-making, for water ownership, for greater access to land and waterways to enable them to care for Country, for access to clean drinking water, and for their deep knowledge of our rivers to be respected.

We sense broad support across Basin governments to work together to improve and do better. The Australian Government and Basin states alike have made commitments to progress key initiatives in many of these priority areas.

While the Basin Plan is not the vehicle to address many of these aspirations, there is more we can and must do. That is why the MDBA has identified improving outcomes for First Nations people as one of the 4 priority themes for the 2026 Basin Plan Review. This means seeking to actively progress, support and amplify opportunities for progress in First Nations' involvement in water management. The MDBA will seek to make progress not just in what is recommended for the future, but in the way the MDBA works with First Nations people through the process of the review. Just as the Basin Plan has achieved incremental change in the past 10 years, the organisation's focus to the extent possible will be to continue to raise the standard on how First Nations people are better included in water management.

In the meantime, the MDBA will continue to work within the existing Basin Plan settings, including in the assessment of water resource plans, acknowledging that there remains deep dissatisfaction in some areas with First Nations engagement and consultation methods.

As we look to 2026, the MDBA will seek to work closely with both First Nations and governments to review, to assess and to consider, and ultimately to explore positive and forward-looking reform.

Regulatory design

The way water is accounted for, managed and regulated is inherently complex. The *Water Act 2007* (Cth) (Water Act) and the Basin Plan set out a range of requirements and processes that establish a regulatory framework within which Basin governments must work.

The regulatory prescription of the Basin Plan often reflects the requirements of the Water Act. An example of this is the prescriptive nature of the preparation and process of amendment of water resource plans (WRPs). The Water Act prescribes through sections 22, 48, 63 and 67 the approach, requirements, and review of WRPs, and these provisions have subsequently been included in Chapter 10 of the Basin Plan.

WRPs are a critical mechanism to give effect to the objectives of the Water Act and the Basin Plan in state-based management arrangements. Accredited WRPs bring sustainable diversion limits into force and activate the oversight and compliance functions of the Inspector-General of Water Compliance. After 10 years most of the WRPs are in place, however, most in New South Wales remain outstanding.

The finalisation of WRPs is a priority for the MDBA. The organisation continues to work with the New South Wales Government to support their delivery of legally valid, accreditable plans. Further delays will undermine trust in New South Wales water management arrangements, and fuel ongoing uncertainty for communities and water users. The Authority is of the strong view that New South Wales should continue to be held to the 'same bar' as other jurisdictions – the alternative is to risk an erosion of trust and confidence in communities across the Basin.

The Authority acknowledges that the WRP requirements in Chapter 10 of the Basin Plan place a substantial burden on Basin states in the drafting of water resource plans and on the MDBA to assess consistency against the 55 requirements of each plan. If amendments are made to the Basin Plan in relation to WRP requirements, all 33 WRPs will need to be redrafted and resubmitted.

The MDBA's commitment to review the regulatory design of the Basin Plan – a key theme of the 2026 Basin Plan Review – provides the opportunity to explore ways to simplify the approach to WRPs as they are amended and remade. The opportunity is to focus on the central elements of the Basin Plan that are critical to state management arrangements, such as compliance with sustainable diversion limits, the protection of environmental water, and minimum standards for involving First Nations people in water planning and management.

The opportunity for improving regulatory design extends beyond provisions related to WRPs. For example, there is an opportunity to consider the framework for Monitoring and Reporting (Chapter 13) to simplify and improve these arrangements to draw a better distinction between the evaluation function of the MDBA and the compliance function of the Inspector-General of Water Compliance (for more see Question 3a – Monitoring and evaluation).

The 2026 Basin Plan Review is the opportunity for the Authority to consult broadly with stakeholders to form a view on the essential requirements needed to support adaptive water management into the

future, noting that the implementation of any amendment to these provisions in the Basin Plan would require amendments to the Water Act.

Institutional arrangements

In the face of climate change, and as the MDBA embarks on the next stage of Basin water management, an integrated approach to managing water resources at the Basin scale is critical.

As the climate changes, the MDBA will drive the achievement of outcomes by continuing to improve the way the agency operates the rivers, by better integrating environmental water management in river operating rules and frameworks, and through collaboration in natural resource management activities.

The capability to inform Basin-scale policy setting with on-ground river management expertise, underpinned by the best available science, knowledge and hydrological modelling capability, becomes more even more important.

This requires the ability to ask the research community and others the right questions to generate the information needed to understand, explore and test policy options and responses, and to understand how this pragmatically translates into real time, day-to-day river management. This includes the ability to identify the limitations of rules and operating requirements that might hinder the ability to make the most of every drop and to achieve better outcomes, and to advise governments accordingly.

The MDBA's dual roles – to develop, oversee implementation, evaluate and review the Basin Plan, and to manage the River Murray system in accordance with the Murray–Darling Basin Agreement – uniquely enable the integrated approach that is needed to support effective adaptation to climate change.

However, the MDBA cannot perform its role in the absence of strong collaboration with Basin state governments, who retain primary responsibility for water resource management. To this end, strong intergovernmental governance and institutional arrangements through the Ministerial Council and the Basin Officials Committee are critical to effective, efficient and adaptive management of water resources in the Basin.

The establishment of the Inspector-General of Water Compliance (IGWC) to increase trust and transparency of Basin water management has been an important step to strengthen the institutional arrangements underpinning the Basin Plan. Confidence in compliance – including how water take is metered and monitored, and oversight of agencies including the MDBA is crucial for community trust in water management.

Part B – Response to key questions

Question 1 – Water recovery targets

Summary of progress

The MDBA is committed to providing regular updates on the progress of implementation of the Basin Plan, including in relation to water recovery targets, through the 6-monthly Basin Plan Report Cards (released since late 2018) and annual reports on the progress of the Sustainable Diversion Limit Adjustment Mechanism (released since 2019). These latest reports, released in July 2023 show that:

- Bridging the Gap water recovery is close to completion, with approximately 98% of surface water and 92% of groundwater recovered. As at 31 May 2023 there is 46.0 GL/y surface water and 3.2 GL/y groundwater yet to be recovered.
- As at 31 May 2023, only 12.2 GL/y of the 450 GL/y of efficiency measures had been recovered, with a further 13.8 GL/y contracted for delivery by 30 June 2024.
- There is likely to be a shortfall in the range of 190 to 315 GL in the 605 GL water recovery offset attributed to the implementation of supply and constraints projects. The shortfall is expected to be at the higher end of this forecast.

Current arrangements

The roles and responsibilities in relation to water recovery, supply and efficiency measures are distributed across Australian Government and state government entities. Water recovery through programs to 'bridge the gap' and to deliver the additional 450 GL/y water recovery target is the responsibility of the Department of Climate Change, Energy, the Environment and Water.

In relation to water recovery, the MDBA's role and responsibilities is limited to:

- **Reporting:** The MDBA reports on the progress of water recovery to bridge the gap, calculates the Sustainable Diversion Limit at the start of each water year and adjusts the sustainable diversion limit accounts where water recovery is incomplete for reasons beyond the Basin state's control.

In relation to supply and constraints measures under the Sustainable Diversion Limit Adjustment Mechanism (SDLAM), Basin states are responsible for developing, notifying, designing, and implementing the projects, and the Australian Government is responsible for funding the projects. The MDBA's role includes:

- **Support:** The MDBA provides technical advice to enable completion of the design and business cases of the SDLAM projects. The MDBA's advice includes hydrological modelling, climate change modelling, water quality, river operations and operating plans, and implications for the *Water Act 2007* (Cth) and the Murray–Darling Basin Agreement. The MDBA has been, and is, working with Basin states to identify and address policy issues and facilitate timely responses to state requests for advice. MDBA advice is managed via probity management mechanisms informed by a probity strategy.
- **Regulatory:** The MDBA is responsible under the Basin Plan for assurance reporting, monitoring project progress and conducting a reconciliation of projects notified in 2017. Sustainable

Diversion Limit Adjustment Mechanism program assurance reports are published annually by the MDBA. The MDBA has published its Reconciliation Framework which outlines how the MDBA will approach the task of reconciliation in 2024 and further includes the roles and responsibilities of the MDBA and Basin governments.

- **Project delivery:** The governments of New South Wales, Victoria and South Australia have contracted the MDBA to deliver the Enhanced Environmental Water Delivery project. Given the MDBA's role in delivering this project, independent support was engaged by the Authority to undertake assurance of this measure in 2023.

In relation to efficiency measures, the Department of Climate Change, Energy, the Environment and Water is responsible for water efficiency programs to deliver the additional 450 GL/y water recovery target.

Looking to the future

In relation to water recovery, the remaining volumes required to bridge the gap will not be finalised until:

- All New South Wales WRPs have been accredited, which will allow for the finalisation of the long-term diversion limit equivalent factors. These factors enable the MDBA to understand the extent to which any entitlements already recovered for the environment have contributed to reducing use from the Baseline Diversion Limit towards the Sustainable Diversion Limit.
- Reconciliation of projects with the Sustainable Diversion Limit Adjustment Mechanism, scheduled for 2024, which will inform how much water is still to be recovered in the southern Basin. Once reconciliation has been completed, the Authority may recommend an amendment to the Basin Plan that reflects the revised Sustainable Diversion Limits in the relevant areas in the southern Basin.

The MDBA has observed that some SDLAM projects are currently operating, and are already achieving positive environmental outcomes. A number of other projects are progressing, with construction nearing completion or relevant supporting arrangements being finalised. These projects will contribute to the SDL offset and allow for more water to remain available for consumptive use.

There are some notified projects on which some delivery progress has been made, and which proponent states claim a pathway to delivery should they have additional time and sufficient funding. The MDBA's view is that these projects, if delivered, would provide the expected environmental benefits and contribute to an SDL offset, and could therefore reduce the requirement for water recovery. Measures that are part of the Victorian Murray Floodplain Restoration Project are examples of such works.

It is the MDBA's firm view that the constraints projects should remain a focus for delivery by all governments. They are complex and previous experience in constraint easing has shown they require time to properly engage with affected individuals and communities. However, they are essential to realising the full benefit of the investments which have been made to secure environmental water and to achieve the long-term environmental outcomes sought by the Basin Plan.

While the constraints projects will not be delivered by 30 June 2024, the MDBA considers it should remain one of the highest priorities for Basin governments. As we approach a future where climate change presents ever-increasing challenges for the Basin, enabling the resilience of our floodplains to maintain their ecological health and function will be critical. Basin governments must find a clear pathway forward

so that this program can be continued beyond 2024 to a feasible timeframe, and ultimately delivered to ensure outcomes are achieved.

Question 2a – Water resource plans

Summary of progress

Water resource plans in Victoria, Queensland, South Australia and the Australian Capital Territory are accredited and in operation.

As at end June 2023, 5 New South Wales water resource plans had been accredited and are operational, and 8 of the remaining 15 water resource plans had been formally submitted to the MDBA for assessment.

The MDBA publishes all water resource plan assessment packages on submission to improve transparency and confidence in the process. Water resource plans then remain on the MDBA website with the accreditation recommendation.

Water resource plans once accredited and operational are an important compliance instrument that supports the Inspector-General of Water Compliance (IGWC) in meeting the IGWC's roles and responsibilities under the *Water Act 2007* (Cth).

Current arrangements

Under the current legislative framework, Table 1 sets out the roles and responsibilities of agencies in relation to the development, accreditation and monitoring of water resource plans.

Table 1 Roles and responsibilities for water resource planning

Entity	Roles and responsibilities
Basin states	1. Prepare a proposed water resource plan (or amendment) for consideration by the Commonwealth minister responsible for water. 2. Provide a proposed water resource plan to the MDBA for assessment and transmission to the minister. 3. Annual reporting on compliance with accredited water resource plans (Matter 19 of Schedule 12 of the Basin Plan).
MDBA	1. Assist Basin states to prepare proposed water resource plans (or amendments) in accordance with the requirements of the Basin Plan. 2. Assess submitted water resource plans and make accreditation recommendations to the minister. 3. 5-yearly reporting on the efficiency and effectiveness of the operation of water resource plans (Matter 18 of Schedule 12 of the Basin Plan).
DCCEEW	1. Provide advice to the Commonwealth minister on water resource plan accreditation (or amendment) in the context of *Water Act 2007* (Cth) requirements. Provide a draft of the accreditation instrument to the minister. 2. Administer the *Water Act 2007* with respect to circumstances where a

Entity	Roles and responsibilities
	water resource plan is not in place (s.73 of the *Water Act 2007*).
Commonwealth minister responsible for water	1. Accredit (or not) proposed water resource plans on consideration of recommendations from the MDBA. 2. Engage with Basin state water ministers in circumstances where a water resource plan is not in place (s.73 of the *Water Act 2007*).
Inspector-General of Water Compliance	1. Monitor and determine compliance (of Basin states and the MDBA) against accredited water resource plans.

The MDBA works closely with each Basin state to provide assistance in the preparation of, and a consistent approach to, ensuring water resource plans are meeting Basin Plan objectives.

However, given the delays in getting all water resource plans accredited, the overall effectiveness and efficiency of the current arrangements is brought into question. It is the intent of the Basin Plan that water resource plans are based on existing Basin state water management arrangements. One of the causes of the delay in having all water resource plans accredited and in place is the challenge faced by Basin states in translating their state water management arrangements in a way that is consistent with all 55 requirements (and the associated sub-requirements) of Chapter 10 of the Basin Plan.

The current water resource plan requirements in Chapter 10 place a substantial burden on Basin states in preparing their plans and on the MDBA in assessing their consistency against the 55 requirements. Each of the 55 requirements must be met and are treated equally.

The effectiveness of the arrangements for reporting on water resource plans cannot be properly and fully determined until they are all accredited and operational. Through the 2025 Basin Plan Evaluation, the effectiveness of the operation of water resource plans will be appropriately considered by the MDBA. However, experience to date suggests there is scope to clarify the responsibilities and expectations on the different reporting entities that are prescribed through Schedule 12 of the Basin Plan.

Looking to the future

The Basin Plan cannot be fully implemented until all water resource plans are accredited and operational. Finalising the accreditation of the remaining New South Wales water resource plans requires sustained effort and is a priority for the MDBA and must be a priority for New South Wales.

Water resource plans are the primary mechanism that gives effect to the objectives of the *Water Act 2007* (Cth) and the Basin Plan. Sustainable diversion limits and the protection of planned environmental water are only given effect under Commonwealth law through accredited water resource plans.

The levers available to oblige Basin states to bring forward amendments to accredited water resource plans are limited under the current legislative framework. This poses a risk to maintaining alignment between the water management arrangements set out in accredited water resource plans and the water management arrangements in effect 'on the ground' in the Basin.

Some states are considering amendments to their accredited water resource plans. The nature and scale of amendments will affect the amount of resourcing required to prepare and assess them. The MDBA has published Guidelines for amendments to water resource plans to assist the states.

Implementation of the Guidelines for amendments to water resource plans and the processes for preparation and assessment of proposed amendments remain untested and as such, the resource implications for Basin states and the MDBA remain unclear.

The MDBA and Basin states are required to undertake 5-yearly reporting on the efficiency and effectiveness of the operation of water resource plans. Comprehensive monitoring at a whole-of-Basin scale cannot be achieved until all water resource plans are accredited and operational.

As outlined in Part A – Key issues, through the 2026 Basin Plan Review, the MDBA will consider the requirements set out in Chapter 10 of the Basin Plan with a view to streamlining and simplification. This work will also provide the opportunities to clarify roles and expectations of all parties involved in the development, accreditation, implementation and monitoring of water resource plans.

Question 2b – Water quality

Summary of progress

The Basin Plan has made a significant contribution to the maintenance and enhancement of the protection of flow regimes across much of the southern Basin, including base and fresh flows which support water quality outcomes. This was demonstrated in the delivery of water for the environment to support the Coorong, Lower Lakes and Murray Mouth ecosystems through the 2017–20 drought substantially avoided the environmental degradation and severe water quality issues that occurred during the Millennium drought.

In the rivers of the northern Basin, implementation of the Basin Plan has been associated with some improvements to flow regimes and water quality, including reducing the effects of long, severe dry spells and protecting the first flows after rainfall. Water resource plan settings, and active and coordinated deliveries of held environmental water, have made important contributions to improved water quality outcomes in the north.

Long-term Basin-scale salinity management and planning by Basin governments and the MDBA remains on track and consistent with the Basin Plan. This includes achievement of individual salinity targets and support to achieve the overarching salinity targets within the Basin Plan.

Measures being implemented by Basin governments and the MDBA under the Basin Salinity Management 2030 strategy provide for the management of salinity to ensure that salinity levels in the shared water resources are appropriate for agricultural, environmental, urban, industrial, and recreational use.

Current arrangements

The Basin Plan's water quality arrangements, set out in Chapter 9, are largely operating effectively. The 2020 review of water quality targets in the Basin Plan found the targets generally to be effective and valuable indicators of whether water quality is being maintained at a level appropriate for the beneficial use of Murray–Darling Basin water resources. The review found that 3 of the water quality objectives

were rated as effective and one partially effective, and 3 were ineffective. Work is underway to address the 3 found to be ineffective.

In 2019, the MDBA prepared a guideline for 'having regard' to the water quality targets for managing water flows. This provides additional guidance to the MDBA, the Basin Officials Committee and agencies of Basin states when managing water flows, and for environmental water managers when making decisions about the use of environmental water. The guideline and the target values are used when identifying, planning for, and managing the risk of water quality impacts associated with different flow scenarios and the use and delivery of environmental water. They also assist when using coordinated flow management responses as a tool to mitigate against water quality events.

Water Resource Plans are required to include water quality management plans that incorporate water quality and salinity targets and identify key causes of water quality degradation. It remains difficult to assess the adequacy of actions at the water resource plan scale, as a number of New South Wales plans still require accreditation.

In recent years, water quality incident response has been a regular occurrence over the high-risk summer and autumn period. An example is the notable increase in the number and duration of blue-green algae outbreaks in the Basin's waterways. Under a changing climate with increased variability, there is an increased likelihood that extreme events will become more frequent.

The MDBA has worked with jurisdictions through the Basin Officials Committee Tier 2 Water Quality Advisory Panel to undertake early-season risk scans in advance of the higher risk summer seasons. The early-season risk scans ensure effective information flow and coordination across jurisdictions to identify risks and locations, including events that may lead to mass fish deaths. Communication coordination and joint media releases where appropriate have signalled risks and progress to support clear communication with the community.

While the MDBA has a coordination and facilitation role (as chair of the Water Quality Advisory Panel), Basin states have the primary response role for the management of extreme water quality events within their borders.

Looking to the future

Extreme ecological events in parts of the Basin have highlighted the significant challenges ahead for state governments to manage water quality under a changing climate. Following the recommendations of the Vertessy review, which identified the need for Commonwealth and state governments to significantly increase investment in research and development to address long-standing gaps in knowledge around riverine hydrology and ecology, a number of research programs are now underway. This includes $20 million to deliver the Murray–Darling Water and Environment Research Program (MD-WERP), with key projects to better understand blue green algae, the low flows that are important to maintain environmental refugia conditions, to avoid the risk of poor water quality, and to support downstream water uses.

A program of work is underway to review and propose improvements to the water quality targets and objectives found to be ineffective. This work will inform the 2026 Basin Plan Review. Basin states are key stakeholders in the consultation process, and these reviews are being conducted under the joint

governance arrangements through the Water Quality Advisory Panel and the Basin Salinity Management Advisory Panel.

Scoping has also commenced for the development of a 'cultural use' objective relating to water quality. First Nations groups have been impacted by poor water quality with several instances occurring in the Lower Darling (Baaka) during the record dry phase of 2018–2020 and again in early 2023 as a result of the 2022–23 floods.

Question 2c – Critical Human Water Needs

Summary of progress

All of the Victorian, Queensland, South Australian and the Australian Capital Territory water resource plans have been accredited and are operational, meaning the rules and arrangements are in place to satisfy the critical human water needs requirements in Part 13 of Chapter 10 and Chapter 11 (for the River Murray system) of the Basin Plan.

Five accredited New South Wales water resource plans have also satisfied these requirements.

Current arrangements

The Basin Plan's provisions for critical human water needs were forged during the Millennium drought and reflect the lessons of that extreme dry period. Accredited water resource plans have fully incorporated the Basin Plan's critical human water needs requirements into Basin state water management practices.

The Basin Plan requires that Basin states set out in their water resource plans how extreme events will be managed, including those that would compromise a state's ability to meet critical human water needs. Such events include extreme dry periods, water quality events that render water unusable, or events that may result in the suspension of regional water plans.

The arrangements for Critical Human Water Needs for the River Murray system under Chapter 11 of the Basin Plan are working effectively. They work in conjunction with the Murray–Darling Basin Agreement (including Schedules G and H) which set out, for the River Murray system, how water is shared between states during dry periods. However, these arrangements have not been tested as the system has not seen a drought severe enough to test the provisions fully. Every year the states provide the MDBA with advice about where their Critical Human Water Need volumes are stored.

Water resource plans are also required to include arrangements for review of these measures to ensure they remain based on the best available information. During the 2017–2019 in the northern Basin, some towns were unable to supply drinking water to, with emergency supplies installed or brought in. Comprehensive evaluation of the effectiveness of those arrangements will only be possible once all water resource plans are accredited and will depend on whether they have been fully implemented in response to an event that threatens critical human water needs.

Ensuring compliance with arrangements to meet critical human water needs in water resource plans, and commitments to review those arrangements, is the role of the Inspector-General of Water Compliance.

The 2025 Basin Plan Evaluation will be the next opportunity to consider if the settings by which the critical human water needs provisions were established remain appropriate.

Looking to the future

The information base for meeting critical human water needs requirements in accredited water resource plans represents knowledge at the point these plans are made, supported by work led by the states to better understand the needs and requirements of their water resource plan areas.

Climate change is forecast to result in reduced inflows and increased extreme events that may affect how much water is available in terms of volume and sufficient quality to meet critical human water needs. Key science programs underway to inform the 2026 Basin Plan Review, including the Sustainable Yields Study, will provide further updates in the knowledge base as we plan for the future.

Question 2d – Environmental water management

Summary of progress

Environmental water planning and management is a clear success and arrangements are world leading. While early environmental water management pre-dated the Basin Plan, the plan has made a major contribution and water for the environment is now a secure and enduring element of river management. This water helps to make sure the Basin's rivers are flowing and is being used strategically on important environmental sites across the Basin. Its management is being continuously integrated with river operations and outcomes are being enhanced through greater emphasis on system-wide management rather than site-based water usage that dominated the early days of environmental watering. A whole-of-system approach is an underpinning part of the Basin Plan.

Flows provided by the release of water for the environment are buffering the system against climate change (see Question 4 – Climate Change), restoring the health of rivers and wetlands, assisting to improve poor water quality, and helping to reduce the severity of fish deaths.

Governance and management settings under the Environmental Management Framework are working well, but it is nevertheless challenging to integrate environmental water delivery needs into river management systems that have largely been designed around water security and optimising consumptive use. Regulated river constraints limiting the ability to deliver water to low lying floodplains remains the major restriction on environmental water being able to achieve the outcomes expected under the Basin Plan.

Coordination across water holders has significantly increased over the past 5 years in both the southern and northern Basins, yielding significant environmental outcomes, but also increasing the complexity of operations and putting a strain on the capabilities of current planning and operational tools and systems.

Significant new efforts are being made to improve how First Nations are involved in environmental water planning and management, recognising also there is much more to be done (see Question 5 – Interests of First Nations people).

The Environmental Watering Plan is a central part of the Basin Plan. Its purpose is to achieve the best possible environmental outcomes using the increased, but still finite, amount of water made available by the Basin Plan.

All key components of the Environmental Management Framework have been prepared and implemented, ensuring water for the environment is now a secure and enduring element of the river management system.

A review of the Environmental Watering Plan in 2020 found that current arrangements are working effectively. Environmental water is being actively managed and delivered to meet defined ecological goals and targets. The Environmental Management Framework is maturing and delivering continuous improvement in planning for environmental water. The coordination between holders of environmental water entitlements is being strengthened on an ongoing basis.

More specifically, the review of the Environmental Watering Plan in 2020 found:

- Most components of the Environmental Watering Plan were identified as having both the highest degree of usefulness and impact in environmental watering.
- The overall objectives for water-dependent ecosystems were generally considered appropriate.
- The overall objectives of the Environmental Watering Plan (Part 2) and targets (Part 3, Schedule 7) were seen to be very useful, but with lower impact in environmental watering, particularly the overall environmental objectives.
- The longer-term targets in Schedule 7 were generally deemed appropriate and there was support for the core aspects they covered.
- The Environmental Management Framework components were deemed fairly or extremely effective.
- Most practitioners, advocates and researchers regarded the principles and method for determining environmental watering priorities to be fairly or extremely appropriate.
- Practitioners and advocates had a high level of support for the method for identifying assets and their watering requirements.

The Basin-wide environmental watering strategy has coordinated the use of environmental water by providing an agreed set of expected environmental outcomes and water management strategies. State annual environmental watering priorities, developed in consultation with communities, have guided annual decision-making to meet the watering needs of priority environmental assets.

Current arrangements

The Basin-wide environmental watering strategy, developed by the MDBA, guides the work of governments, water holders and environmental managers over the longer term. It sets out expected outcomes and provides strategies to achieve them. The MDBA also gives annual advice and guidance about the short-term Basin-scale environmental watering priorities.

Basin-wide environmental watering priorities have been prepared by the MDBA annually since 2013–14. The MDBA and the Commonwealth Environmental Water Holder have partnered to develop an improved method for setting the priorities, which will be trialed in the 2023–24 water year.

In addition to the MDBA's role in planning and overseeing the delivery of water for the environment through the Environmental Water Plan, the MDBA on behalf of governments manages the environmental water portfolio of The Living Murray program. The MDBA works with other environmental water holders to plan and coordinate the use of this water for the environment.

As manager of the River Murray system, the MDBA operates the system, following the operating rules and the objectives and outcomes established by governments under the Murray–Darling Basin Agreement.

Specific activities of note include:

- Annual environmental watering priorities have been prepared by the Basin states since 2013–14.
- A review and update of the Basin-wide environmental watering strategy was completed in 2019. Another update of the strategy is scheduled for 2024.
- Long-term watering plans have been prepared for all surface water catchments, and one update has been completed for those plans in Victoria, Queensland and South Australia.
- One review of the Environmental Watering Plan was completed in 2020.
- A Northern Basin Environmental Watering Group has been established to coordinate connected environmental watering events in the northern Basin.

Murray Lower Darling Rivers Indigenous Nations (MLDRIN) members first attended the Southern Connected Basin Environmental Watering Committee (SCBEWC) to learn about the workings of the committee. In 2021, MLDRIN joined SCBEWC as advisory members to support increased First Nation consideration in water management, including environmental water management and use, and sensitively incorporating cultural values and First Nations outcomes. The MLDRIN role aims to enhance system-scale benefits through engagement that occurs with First Nations in water planning at the site or local scale.

Looking to the future

Opportunities to strengthen First Nations' objectives and outcomes in environmental watering, and to integrate natural resource management with environmental watering, are being considered as part of the 2024 update of the Basin-wide environmental watering strategy.

The current objectives for the Environmental Watering Plan acknowledge the importance of managing water-dependent ecosystems so that they are resilient to climate change. Furthermore, the current framework is flexible and adaptive, with regular 5-year review points for all the major components. This means that environmental water planning and management can be adapted to changing circumstances, including climate change.

The MDBA is leading several research programs with partners to improve the climate science and the identification of likely future impacts. For example, the Murray–Darling Water and Environment Research Program is seeking to fill key knowledge gaps that have emerged in the understanding of Basin management to sustain the health of these ecosystems, and the factors for maintaining ecological resilience during low flow periods (including the role of persistent riverine waterholes and hydrological connectivity). This and other work will be important to inform water planning and management,

particularly under a changing climate to support prioritisation of environmental assets, values and functions for targeted water management and other measures.

Question 3a – Monitoring and evaluation

Summary of progress

Monitoring is the means by which the MDBA obtains the data and information needed to assess the effectiveness and impact of policy initiatives that are designed to manage the Basin's water resources appropriately. Evaluation logically follows from monitoring to systematically track implementation outcomes and assess the overall effectiveness of a given policy setting. Reporting forms part of the MDBA's commitment to openness, accountability, and good governance.

Since 2012 the MDBA and Basin governments have implemented the monitoring, evaluation and reporting requirements set out in the Basin Plan.

This includes delivery of 2 comprehensive evaluations of the effectiveness of the Basin Plan in 2017 and 2020 and a range of annual reporting outputs.

Current arrangements

Chapter 13 of Basin Plan sets out a program that is used to evaluate and review the effectiveness of the Basin Plan. The program details the principles, responsibilities and requirements for monitoring, evaluation and reporting.

Chapter 13 builds on the premise that Basin governments will coordinate and collaborate to ensure that their individual monitoring programs provide the necessary information to meet their reporting obligations under the Basin Plan and to support the evaluation and improvement of the Basin Plan.

The Monitoring, Evaluation and Reporting Working Group is a multi-jurisdictional Tier 2 Committee under Basin Officials Committee Alternates. This working group provides oversight and advice on strategic initiative and projects related to monitoring, evaluation, and reporting under the Basin Plan.

The MDBA must, when making an evaluation, have regard to reports under the reporting requirements set out in s13.14 and listed Schedule 12 of the Basin Plan. The requirements include annual and 5-yearly reports by the Basin states, the Commonwealth Environmental Water Holder, the Department of Climate Change, Energy, the Environment and Water, and the MDBA.

Basin states continue to deliver annual Schedule 12 reporting as required under the Basin Plan. Basin states delivered 5-yearly reports under Schedule 12 of the Basin Plan for the first time in 2020. The due date for the next round of 5-yearly Schedule 12 reports is 31 October 2024. This date which is one year earlier than originally required has been negotiated with Basin governments to ensure these reports are received in time to be used as a line of evidence in the 2025 Basin Plan Evaluation.

Looking to the future

The MDBA is currently planning for the 2025 Basin Plan Evaluation. The purpose of this evaluation is to:

- be accountable for the commitment to implement the Basin Plan

- be accountable for the achievement of the Basin Plan's intended outcomes
- drive continued improvement in the implementation and operation of the Basin Plan
- support the 2026 Basin Plan Review.

More detail on the approach to the 2025 Basin Plan Evaluation is explored through the Roadmap to the 2026 Basin Plan Review and the Framework for Evaluation.

The 2025 Basin Plan Evaluation will bring together information from a range of sources, including Basin governments, and draw on key research and science investments. The 2025 Basin Plan Evaluation is being designed to support the 2026 Basin Plan Review and therefore the evaluation needs to be cognisant of 'what matters' to the Review. The MDBA has identified the 4 overarching themes for the Review, and the Evaluation will include questions specifically to address these themes.

The main challenges in undertaking an evaluation of the Basin Plan include:

- collating and synthesising information from a range of sources
- ensuring transparency and line of sight between conclusions being drawn and the evidence that supports those conclusions
- connecting scales – drawing together information from local, asset and whole-of-Basin scales
- understanding the role of the Basin Plan compared to the role of other drivers of change in social, economic, environmental, and cultural values across the Basin.

In addition, specific issues and challenges identified through the 2020 Basin Plan Evaluation included:

- more investment in science and monitoring was needed to support the management of a complex river system like the Murray–Darling Basin
- science and monitoring information needed to be made more accessible.

Significant additional investment has been made in science and knowledge following the 2020 Basin Plan Evaluation. See responses below to Question 7 – Community adjustment and Question 8 – Science and knowledge for more information.

There is an opportunity in the 2026 Basin Plan Review to consider the framework for Monitoring and Reporting (Chapter 13). In its current form, it is designed to support the MDBA role of evaluating the effectiveness of the Basin Plan however there could be room to simplify and improve these arrangements by drawing a better distinction between the evaluation function that rests with the MDBA and the compliance function that rests with the Inspector-General of Water Compliance.

Question 3b – Compliance

Summary of progress

The Inspector-General of Water Compliance has oversight of water management in the Basin and has been vested with a suite of functions that support the capacity to monitor, inquire into and investigate relevant matters including the implementation of the *Water Act 2007* (Cth) (Water Act), the Basin Plan and relevant intergovernmental agreements.

Current arrangements

Following amendments to the Water Act and the Basin Plan in 2021, responsibility for compliance and enforcement now sits with the Inspector-General of Water Compliance, which was formally established on 5 August 2021.

The MDBA retains its responsibility for overseeing implementation of the Basin Plan, including the assessment of water resource plans (see response to Question 2a – Water resource plans), and independent monitoring and evaluation (see response to Question 3a – Monitoring and evaluation).

The MDBA also retains responsibility for assurance of the Sustainable Diversion Limit (SDL) accounts and producing the annual Registers of Take. The MDBA aims to increase confidence in the management of water take under the Basin Plan by being transparent about the SDL accounting processes and outcomes, and by encouraging continual improvement in reporting processes and the methods used to quantify water take.

The MDBA provides quality-controlled data and information to inform the Inspector-General's assessment of compliance with the SDLs. More on the role of the MDBA in SDL accounting and the relationship with the Inspector-General of Water Compliance is contained in the MDBA Sustainable Diversion Limit Accounting Framework, including the following:

The Inspector-General of Water Compliance and MDBA have a joint interest in strong and effective working arrangements. In support of this, a memorandum of understanding has been established between parties. The MoU is aimed at clarifying roles and responsibilities, supports the sharing of information and expertise, and the provision of services or advice on relevant matters and specific areas of interest.

Looking to the future

The MDBA recognises the importance of increasing community confidence in water management, including the management of water take under the Basin Plan. The MDBA is committed to transparency around the Sustainable Diversion Limit accounting processes and outcomes and encourages continual improvement in the methods used to quantify water take and ensure rigour in the process of reporting. The MDBA's quality-controlled data and information is provided to the Inspector-General to inform the Inspector-General's assessment of compliance with the SDLs.

The MDBA sees an opportunity ahead for improving regulatory design relating to compliance, through simplification in Chapter 13 to better delineate between the evaluation function of the MDBA and the compliance function of the Inspector-General of Water Compliance.

Question 4 – Climate Change

Summary of progress

The Basin Plan includes a number of measures that support responses to climate variability and longer-term climate change. These include:

- the setting of sustainable diversion limits – the method for accounting for these responds to annual climate variability

- requirements in water resource plans to ensure risks to water resources are considered
- recovery of water for the environment to buffer the system
- Basin-scale environmental watering framework
- adaptive management including regular reviews.

Current arrangements

Sustainable diversion limits and accounting

The Basin Plan establishes the Sustainable Diversion Limits, which limit how much water on average can be used in the Basin by towns and communities, farmers and industries, while keeping the rivers and environment healthy.

It is important to recognise the Sustainable Diversion Limit accounting method responds to annual climate variability. Provisions within the water resource plans set the methods for determining the quantity of water permitted to be taken for consumptive use for each water year, for each Sustainable Diversion Limit resource unit. They also take the water resources available during that period into consideration. In this way, the permitted take (also known as the annual expression of the Sustainable Diversion Limit) varies with changes in water availability.

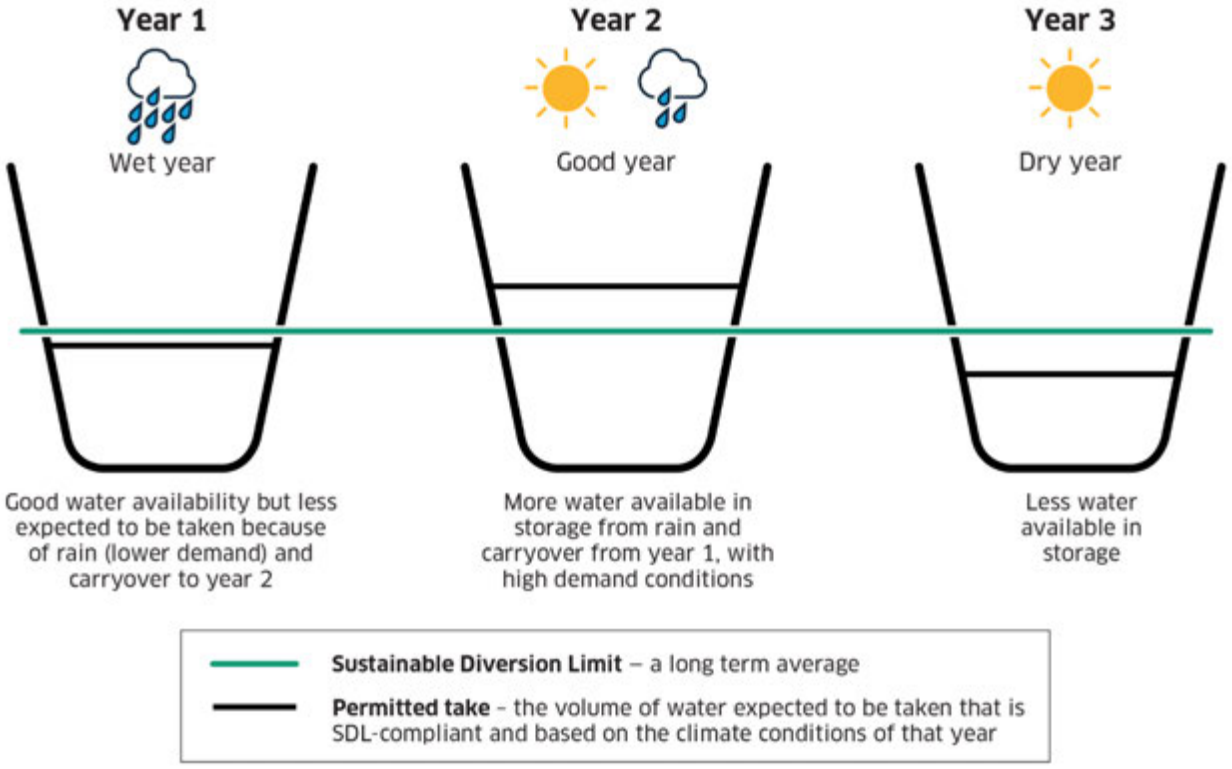

Figure 1 – Comparison of Sustainable Diversion Limit and permitted take over a 3-year variance

Accounting for water take against the Sustainable Diversion Limits (SDLs) needs to consider the best available information, and the SDLs may adjust as new information comes to hand, as part of the water resource plan accreditation process. The SDLs provide a consistent and transparent means of accounting for water use, ensuring usage is measured and monitored and that the limits can be enforced by the Inspector-General of Water Compliance.

Water resource plan requirements

The requirements that water resource plans must meet in order to be accredited have also prompted the refinement of arrangements to deal with a changing climate under the Basin Plan, and include several provisions that respond directly to climate variability. They include:

- having strategies to address risks to water resources that have been assessed as medium or high risks, including the risks arising from the effects of climate change
- arrangements to provide for critical human water needs during extreme events
- provisions to trigger a review of how water resources are managed under the water resource plan if new scientific information suggests a change in the likelihood of certain types of extreme events.

Water for the environment

The recovery of water for the environment has enabled the restoration of environmentally significant flow events to buffer the system from stressors, particularly dry periods, leading to improvements in the condition of ecosystems.

One example of water for the environment successfully being used to buffer the system from drought was the 2018 Northern Connectivity Event, when the Commonwealth Environmental Water Office coordinated the release of environmental water across multiple catchments and jurisdictions for the first time, to support critical environmental outcomes during a severe drought. This is a demonstration of the Basin Plan delivering outcomes through water management actions across multiple jurisdictions, under the Northern Basin Toolkit.

Other achievements under the Northern Basin Toolkit include the protection of water for the environment from extraction as it moves downstream and between catchments, and implementation of event-based mechanisms that have improved flexibility in the delivery of water for the environment to achieve important flow targets. In addition, New South Wales has implemented rules-based reforms to protect the first flows after long dry spells. These arrangements will become more critical to ensuring the health of Basin ecosystems are maintained under a drying climate, as the availability of water held in entitlements reduces.

In the southern Basin, the Basin Plan enabled the delivery of water for the environment to support the Coorong, Lower Lakes and Murray Mouth ecosystems through the most recent drought, substantially avoiding the environmental degradation that occurred during the Millennium drought.

Looking to the future

Climate change is one of 4 focus areas of the 2026 Basin Plan Review. Over the coming years the MDBA will examine whether the Basin Plan is sufficiently robust and adaptable to deal with climate challenges to answer one of the focus questions of the review: *how can the Basin Plan be improved to better address climate change?*

Our understanding of climate change and its projected impacts on the Basin continues to improve. The MDBA continues to work with the CSIRO, the Bureau of Meteorology, the Department of Climate Change, Energy, the Environment and Water, and Basin states to understand climate risk in the management the Basin's water resources.

The MDBA is leading several research programs with these partners to improve climate science and the identification of likely future impacts to social, cultural, economic, and environmental conditions in the Basin. Initiatives such as the Murray–Darling Water and Environment Research Program, the Basin Condition Monitoring Program, the Sustainable Rivers Audit, and the Sustainable Yields project are contributing to this understanding of impacts.

The research will inform the 2026 Basin Plan Review. In late 2025 a Murray–Darling Basin Outlook will draw together the research to build a shared understanding of the condition and trend of environmental, social, economic and cultural values in the Basin, assess risks to these values, and describe how the Basin's environmental, economic, cultural and social outcomes may change under future climate scenarios.

Modelling of climate change is a continually evolving science, with updated datasets and new projections being constantly generated. There has been extensive work undertaken by each jurisdiction to develop and apply high quality climate change information. There are systematic differences underlying each approach and significant structural differences in how climate model projections are applied.

The MDBA is working with the Basin states to improve the capability to explore climate impacts across the Basin through the Integrated River Modelling Uplift Program. An interjurisdictional Strategic Hydroclimate Working Group has also been established (a Tier 2 Basin Officials Committee) to provide advice on developing and applying Basin-scale hydroclimate information.

Question 5 – Interests of First Nations people

Summary of progress

The health of the Murray–Darling Basin benefits from meaningful partnerships and First Nations' active involvement in water planning, coordination and delivery, from the local level to the Basin scale. Over the past decade, knowledge of issues relating to Indigenous water interests including cultural flows has progressed considerably. While progress has been made to better involve First Nations people in water management, there is much still to be done towards meeting the rightful aspirations of First Nations Australians.

The MDBA has heard many times that First Nations people and organisations want governments to address what they consider to be a long-ignored inequity in Australia's water law and management. The MDBA hears the frustration of First Nations people about the pace of change. There is a strong call from First Nations for their own water entitlements and allocations to manage as they wish, and to participate in all areas of decision making in water resource management.

The MDBA encourages the Commission to hear directly from First Nations people and organisations, as what matters is their view on progress to advance their rightful aspirations for greater involvement.

Current arrangements

The Basin Plan contains, among other things, provisions that explicitly recognise First Nations interests. This includes provisions that:

- require the Authority, when preparing the environmental watering strategy (s 8.15(4)(e)) and annual environmental priorities (s 8.29(3)(g)) to have regard to, among other things, Indigenous values and Indigenous uses.
- set out principles for environmental watering. These include that subject to the annual environmental watering priorities (prepared by the MDBA) and subject to the objectives of the Basin Plan's environmental watering plan (Chapter 8 of the Plan), environmental watering is to be undertaken in a way that maximises its benefits and effectiveness by (among other matters) having regard to Indigenous values (s 8.35(b)(iv)).
- set out principles to be applied for monitoring and evaluating the effectiveness of the Basin Plan (s 13.03, 13.04). These include that the best available local and cultural knowledge should be used, where practicable.

In June 2018, the then Australian Government minister for Agriculture and Water Resources issued the Water (Indigenous Values and Uses) Direction (2018) to the MDBA pursuant to section 175 of the *Water Act 2007* (Cth). The Direction requires:

(1) For each water accounting period, the Authority must report on how, when planning for environmental watering in the Murray−Darling Basin, holders of held environmental water:
   (a) considered Indigenous values and Indigenous uses; and
   (b) involved Indigenous people.
(2) The Authority must publish the report prepared for subsection (1) on its website within 6 months after the end of the water accounting period.
(3) Subsection (1) applies to each water accounting period that commences after the water accounting period ending 30 June 2018.

The Basin Plan also sets out the requirements that must be met by water resource plans (WRPs) in order for them to be accredited under the Water Act. Relevant to Indigenous interests in water resources, these requirements include that water resource plans:

- must identify the objectives and desired outcomes of Indigenous people in relation to managing water resources in a WRP area and, in doing so, have regard to Indigenous values and Indigenous uses of the water resources as determined through consultation with relevant Indigenous organisations (s 10.52).
- may specify any opportunities to strengthen the protection of Indigenous values and Indigenous uses (in accordance with those objectives and outcomes) that are identified by the person or body preparing those plans (s 10.52(3)).
- must be prepared having regard to certain matters relating to Indigenous interests in water resources (s 10.53) including the views of Indigenous people with respect to cultural flows (s 10.54).14.
- must provide at least the same level of protection of Indigenous values and Indigenous uses as provided in a transitional or interim water resource plan, for the WRP area (s 10.55).20.

The implementation of these arrangements in relation to environmental water planning and WRPs is explored further below.

First Nations participation in environmental water planning

While progress is being made towards improved First Nations participation in environmental water management, many of the current collaborations and partnerships have been established through

government mechanisms that are not often designed with effective First Nations relationships and outcomes in mind. Much more remains to be done.

Across all Basin jurisdictions there are relevant examples of First Nations people influencing and participating in all stages of environmental water management, including annual environmental water planning. Emerging areas of focus for environmental water managers include increasing involvement in on-Country water delivery and monitoring. This was not the case 10 or even 5 years ago.

Examples of First Nation involvement in environmental water management include:

- Murray Lower Darling Rivers Indigenous Nations (MLDRIN) members first attended the Southern Connected Basin Environmental Watering Committee (SCBEWC) in 2020 as observers. In 2021, MLDRIN formally joined SCBEWC as advisory members (up to 3 members) to support increased First Nation influence in water management, including influencing environmental water management and use, and sensitively incorporating cultural values and First Nations outcomes. The MLDRIN role aims to maximise system-scale benefits from engagement which occurs with First Nations in water planning at the site/local scale.
- The Northern Basin Environmental Watering Group (NBEWG) was established to coordinate the planning and delivery of environmental water in the northern Basin to enhance connectivity using cross-border and multi-catchment coordination. The NBEWG terms of reference were reviewed in 2023 and updated to include the opportunity for membership for up to 2 First Nations People in an advisory role.
- The 2019–20 First Nations Environmental water guidance project sought to better integrate First Nations outcomes directly into Basin Plan water management practices by incorporating Traditional Owner knowledge when developing the 2019–20 Basin-wide annual environmental watering priorities. The MDBA and the Commonwealth Environmental Water Office (CEWO) partnered with Northern Basin Aboriginal Nations (NBAN) and MLDRIN. Through this project NBAN and MLDRIN worked with multiple First Nations to identify environmental watering objectives that described tangible benefits experienced by First Nations people from the delivery of environmental water on Country.
- In 2021–22 MLDRIN worked with the MDBA and the CEWO in the southern Basin to follow on from the guidance project and developed the First Nations Environmental Watering Statement 2021–22. The statement provides First Nations guidance to environmental water managers around system scale watering (across multiple Nations). This annual guidance is proving largely enduring but the statement has been updated in 2022–23 and 2023–24 to include First Nations advice around changing resource conditions (watering during wet times and following wet times). First Nations guidance is now an embedded part of environmental water operational planning at both a site (individual Nations) and system scale (across multiple Nations) e.g. First Nations input to planning – DCCEEW and 2021–22 VEWH Seasonal Watering Plan – Northern Region
- Since 2018–19 the MDBA has reported on how the values and uses of First Nations were considered in the planning and delivery of water for the environment in the Murray−Darling Basin. Information in these reports is sourced from the Commonwealth Environmental Water Office, the MDBA, Basin state and territory governments, and First Nations from across the Basin. Basin governments incorporate what they have heard into planning processes and continue to ensure First Nation voices have been, and will continue to be, included in key planning processes.
- Environmental water managers have also been working with First Nations to improve outcomes reporting through 'Rivers, the veins of our country' case studies and stories. Case studies that

demonstrate the deep connection First Nations individuals and communities have to water and examples of how First Nations people are working across the Basin to achieve shared cultural and environmental benefits through the delivery of water for the environment.

Water resource plans

A note in the Basin Plan indicates that in preparing its recommendations for the minister about whether a water resource plan (WRP) prepared by a Basin state should be accredited (the Water Act s 63(3)), the Authority is expected to consult relevant Indigenous organisations as to whether the requirements of the Basin Plan pertaining to Indigenous values and uses have been met.

The Authority considers the advice of relevant Indigenous organisations when assessing a WRP. The MDBA contracts with relevant Indigenous organisations to secure this advice. Advice for southern Basin WRPs is provided by MLDRIN, for the northern Basin WRPs advice has in the past been provided by NBAN and more recently has been provided by I2I Global. The method of gathering advice and the format of this advice is a decision for the Indigenous organisations. In most cases a workshop is held to talk to relevant First Nations representatives about the WRP submitted, and MDBA staff and state staff are available to attend and support as needed. The advice is provided to the Commonwealth Minister as part of any recommendation package and is published on the MDBA website upon accreditation of the WRP.

First Nations' advice received on the New South Wales WRPs has pointed to a range of issues with the preparation of the WRPs in New South Wales, concerns from First Nations regarding the content in this section of the WRPs and disappointment in the limitations of the Basin Plan requirements to make Basin states provide for First Nations people's participation in water management. These issues have been addressed in the letter the MDBA Chief Executive provides to the Minister on recommendation for accreditation. This letter along with the rest of the MDBA recommendation package is published on the MDBA website following WRP accreditation.

Looking to the future

The MDBA engages with First Nations in line with the principles of Free, Prior and Informed Consent (FPIC) and the Akwé: Kon Guidelines. These frameworks ensure the First Nations of the Basin are engaged in an appropriate and respectful manner. Depending on the scale of the activities, the MDBA's work with First Nations may involve individual or multiple Nations, and/or First Nations representative organisations.

Some First Nations are indicating to the MDBA they prefer to have a direct involvement with government, and that engagement with individual Nations or smaller groups of affiliated Nations is preferred, rather than engagement through larger coordinating bodies. How the MDBA approaches its relationships and engagement with First Nations must be responsive to this call.

While progress has been made, it will take time for the outcomes to be fully realised and to the extent First Nations desire. Further action will be required by Commonwealth and state governments.

A significant message being delivered to the MDBA is the need to better support First Nations to engage in water management. This may include, but is not limited to:

- securing longer-term resourcing to build capacity and enable First Nations people to retake on their rights and responsibilities.

- identifying the barriers in legislative frameworks and working towards amending where appropriate
- finding new ways of working together, to provide meaningful forums for First Nations people to inform and participate in water management activities.
- continuing to build the cultural capability of the MDBA. This includes increasing the number of First Nations leaders and staff within the organisation, staff cultural awareness, and the systems for receiving, managing and storing the information First Nations people provide in a culturally appropriate way.

Through the 2026 Basin Plan Review the MDBA will further investigate opportunities to recognise and, where possible, support the outcomes desired by First Nations people. The MDBA will work with First Nations people to appropriately incorporate their knowledge into the evidence base we use, working with First Nations to determine how the review can be used to capture and contribute to the achievement of First Nations aspirations for water management in the Basin. While the Basin Plan is not the vehicle to address many of First Nations aspirations, there is more we can and must do. The MDBA is committed to amplifying the voices of First Nations people to progress opportunities to improve their involvement in water management in the Basin.

Question 6 – Community engagement

Summary of progress

The MDBA recognises the community need for improved transparency and confidence in the MDBA, River Murray operations and the Basin Plan. The MDBA is responding by continually improving public access to information, bringing key decision-makers and regional communities together for meaningful discussions and information sharing, and reflecting how feedback has been incorporated into the MDBA's work.

The MDBA's approach to engagement, communications, and media activities has been informed by the recommendations of the 2018 Productivity Commission review of implementation, the Sefton Report and ongoing market research focused on stakeholder needs, knowledge, attitudes, and perceptions, and the ongoing process of seeking feedback and evaluating MDBA activities. This has improved the understanding of what stakeholders seek, and has helped to refine the approach to Basin, regional and local-scale engagement and the way the MDBA communicates and provides information.

The regionalisation of the MDBA in recent years has resulted in significant progress in developing constructive relationships built on trust and improved understanding with Basin communities and stakeholders. More than one-third (135 as at July 2023) of the MDBA's staff are based beyond Canberra in offices located in Adelaide, Murray Bridge, Goondiwindi, Wodonga, Griffith, Mildura, and in various other locations. The dispersed workforce provides opportunities for people across the Basin to engage with the MDBA on matters of local importance, and MDBA staff can readily participate in local water and natural resource management activities. This regional model improves the important two-way understanding of issues at the regional and local level, including regional socio-economic drivers, and provides an avenue to build appreciation of the system-scale nature of water management in the Murray–Darling Basin. The success of the MDBA's recruitment and retention of staff with an understanding of local values has also facilitated community perspectives to be better considered in policy and decision making.

Current arrangements

Established under the *Water Act 2007* (Cth), the Basin Community Committee is the formal, statutory mechanism for the provision of a community perspective on water resources, environmental, cultural and socioeconomic matters in the Basin. It provides advice to the Authority and Ministerial Council and engages with the Basin Officials Committee, the Department of Climate Change, Energy, the Environment and Water (DCCEEW) and the MDBA's advisory committees. Members come from all over the Basin and are selected for their expertise or interest in relevant areas. The Basin Community Committee meets at least 5 times per year in various locations, offering an opportunity for information sharing, learning and advocacy.

In 2017, the MDBA piloted a Regional Engagement Officer program which was found to be an effective engagement approach. Subsequently, the program was expanded and has been in place for 5 years. For the past 2 years it has been run jointly with the DCCEEW. The program has been evaluated and shown to be highly effective at providing 2-way information sharing opportunities with Basin communities.

MDBA Chair Sir Angus Houston leads regional listening tours, which bring together key stakeholders and agency partners to look at, listen to and understand the diversity of issues and viewpoints that exist in different areas across the Basin. The tours involve representatives from agencies involved in water management, including the DCCEEW, the Commonwealth Environmental Water Office and relevant state agencies, in an approach that provides communities with the opportunity to engage with a range of decision-makers at one time.

Executive regional leadership provides the opportunity for the MDBA to deepen the level of understanding and strengthen connections at senior levels. MDBA leadership and staff visit and engage with stakeholders in Basin regions throughout the year, building relationships, deepening the understanding of community priorities and sharing information.

The MDBA has worked with communities to set up 6 regional community forums, with over 100 participants involved. The forums provide a safe, supportive space for participants to contribute to the MDBA science and monitoring program and the ability to build their knowledge about the science of their region and the Basin and see the role of science in decision-making.

Each year, the MDBA hosts 3 online briefings for peak groups across the Murray–Darling Basin on behalf of all Commonwealth water agencies. These briefings share updates, seek information from and test ideas with almost 40 peak groups representing Basin-scale stakeholders from First Nations and agriculture to environment groups and local government. The forums are also an opportunity for peak group representatives to share what is important to them and ask questions about water management and reform.

Since 2021, Basin communities, First Nations, industry, academics, and representatives from all levels of government have come together for the MDBA's *River reflections* conference. The events are live streamed to a wider audience across the nation. To date, the conference has been held in Griffith, Mildura, and Narrabri respectively with the purpose of sharing knowledge, innovations, success stories and lessons learned in water management. The conference is also a forum for strategic leadership on the way forward for the Basin Plan.

Targeted project engagement is undertaken for key initiatives to strengthen participation and to better understand impacted communities. An example of this is the Barmah-Millewa Feasibility Study where significant targeted engagement has resulted in adaptive scoping of works to acknowledge and reflect local needs.

Over the period 2021–23, the River Operations flood management team established regular online briefings to respond in real time to community and local government needs in response to widespread and ongoing flooding in the River Murray system. The MDBA hosted the briefings supported by agencies such as the Bureau of Meteorology, WaterNSW, the Commonwealth Environmental Water Office, and state emergency agencies.

The MDBA has evolved its digital content to help inform the conversation about water management in the Basin and to celebrate local wins. The MDBA's website is a key information portal with growing impact and accessibility and the MDBA's social media presence across LinkedIn, Facebook and Twitter is growing. A new website, launched in July 2023 will further enhance the MDBA's ability to connect with all Australians.

MDBA webinars continue to give the community opportunities to learn in more detail about water management in the Murray–Darling Basin and ask questions of the MDBA team. There have been more than 1500 webinar attendees and 127,374 unique visitors to the water management section of the MDBA website.

Looking to the future

Ongoing effort and commitment to better coordinate the engagement activities of state and Australian Government water agencies will continue to improve the way governments meet the needs of communities. Conducting engagement activities in partnership with other agencies helps the communities to navigate the complexity of institutions involved in water management, and allow them to have their questions answered and to hold agencies accountable. Ongoing improvements are required but there is much greater awareness and willingness to work in a coordinated way for the benefit of communities and the progress of Basin Plan initiatives.

The MDBA has committed to conducting the 2026 Basin Plan Review transparently, not behind closed doors. During the 12 months from June 2022, the key themes identified for focus in the review were tested in conversations with stakeholders. In June 2023 the MDBA released the Roadmap to the 2026 Basin Plan Review to help stakeholders better understand the work that has been planned, how the MDBA is doing it, and the timing to develop and share information that will inform the final report in late 2026. In line with the MDBA's commitment to transparency, the MDBA will release an update every 6 months or so, to share what has happened, what we've heard and upcoming opportunities to get involved.

Question 7 – Community adjustment

Summary of progress

The MDBA has the important role of monitoring and evaluating community conditions and outcomes in the Basin to support governments as they respond to the needs of communities adjusting to water

reform. The MDBA targets its efforts based on consultation with and the advice of community members through a range of new and existing channels (see Question 6 – Community engagement).

The 2020 Basin Plan Evaluation found the Basin Plan has contributed to positive social, economic, and cultural change in the Basin, while noting that there has been significant variation in where the impacts were located. This ranged from significant negative impacts on some small regional communities to generally positive impacts on most other Basin communities.

Among the key findings of the evaluation were the following:

- Multiple interrelated drivers shape conditions in communities, the largest of which include climate, globalisation, changes in the structure of the Australian economy, changes in population and demographics, farm consolidation and technological change.
- Reductions in the amount of water available has the highest impact on communities which have a high dependency on water.
- The flow-on impacts of water recovery on communities should be considered by governments in future efforts to move consumption to sustainable levels in the Murray–Darling river systems.
- The timing, location and volume of water demand is changing, and this is affecting communities and water delivery, which has had flow-on impacts on communities.

The *Independent assessment of social and economic conditions in the Murray–Darling Basin* (the Sefton Report) in 2020 report found evidence to suggest that much of the past funding to support communities to adapt to water reform could have been better targeted. A recommendation made was to improve the understanding of social and economic conditions to better monitor community outcomes and to help with future policy development. Likewise, consultation through the MDBA's regional community forums across these issues highlighted that communities want to see more reporting of social and economic conditions at scales relevant to them.

In response, the MDBA's $7.5m Basin Condition Monitoring Program is using a community-centred bottom-up approach to address the recommendations of the Sefton Report. Indicators of relevance to local communities have been developed in consultation with communities through the regional community forums. The program is developing new monitoring and reporting mechanisms to report on economic and social conditions across the Basin, including:

- changes in employment and economic indicators across a range of sectors, including irrigated agriculture and tourism
- the intended and unintended consequences on Basin communities and economies of the water market and trade
- the societal values that Basin communities attach to water, and how the Basin Plan is supporting or impacting on those values
- better understanding of the historic impacts of environmental change and policy, and how communities have dealt with change and conflict
- changes in First Nations social economic conditions.

The monitoring underway will provide insights into how communities have responded to Basin Plan implementation and other drivers of change. Importantly, the findings will add fresh evidence to support government decision-making out of the 2026 Basin Plan Review.

In addition, the Murray–Darling Water and Environment Research Program and the OneBasin Cooperative Research Centre are also in the process of gathering data to shed light on different aspects of community adjustment, as detailed below.

Ongoing monitoring, evaluation and reporting of social and economic indicators across the Basin will support the government to better target assistance programs to communities that are most vulnerable to future drivers of change.

Current arrangements

The first output from the Basin Condition Monitoring Program was the Murray–Darling Basin Social and Economic Conditions Report (Aither 2022), which describes conditions and trends based on 31 key social and economic Basin-scale indicators, such as agricultural business growth expectation, tourism value-add, First Nation employment rate, Basin population by age group, to name a few. As an enduring product the report will be updated with new indicators and broader temporal scales.

Conclusions from the report include the following:

- Gross regional product, local jobs and population have steadily increased over the past 10 years, and community views on personal and community wellbeing in the Basin reached a 5-year high in 2020. The data suggests reported personal and community wellbeing is consistently higher in the Basin than the regional Australian average.
- The performance of tourism in regions along the Murray River decreased from 2017 to 2020. Despite this setback, tourism has still grown over the past decade and makes a significant economic contribution to the Basin.
- Basin-scale trends hide differences in social and economic conditions at the local scale. An example is the value of regional production, which increased for the Basin as a whole but about half the Basin's local government areas experienced a decrease from 2016 to 2021. Similarly, while the Basin's overall population has grown, populations have shrunk in some regions.
- Establishing causal links (or disproving them) between water policy and social and economic conditions will require more data sharing and targeted collection of new data. Since the release of the report additional projects under the Basin Condition Monitoring Program have begun to address these data requirements.

Another body of work underway that will inform Basin community adjustment is the Murray–Darling Water and Environment Research Program. The MDBA is delivering the equivalent of nearly $5 million in research to better understand some of the social, economic and cultural outcomes of healthier rivers resulting from the recovery of water under the Basin Plan. The research includes exploring:

- the mental health benefits to Basin communities from local freshwater ecosystems in good condition
- the local and regional tourism benefits of high value wetland and river ecosystems
- the characteristics and strategies that make communities more resilient and adaptable to change, particularly changed water availability.

In addition, the MDBA is a Tier 1 partner and a significant contributor to research co-design in the OneBasin Cooperative Research Centre. The CRC is a collaboration focused on developing policy, technical

and financial solutions to shared water challenges for the future in the Murray–Darling Basin and is in the early stages of developing its research agenda, which will include exploration of community adjustment to policy settings such as the Basin Plan.

The MDBA's involvement in the OneBasin CRC will add further support to the work ahead. The CRC's research program is directed by industry, government and community partners. The research program is in its early stages, and is split into 4 challenges, one of which is Realising value from and within rural industries and communities. This will involve *evaluating the impacts of policies and programs on people, economies, and environmental conditions* and *adaption and transition of agricultural and environmental systems and rural communities*. Design of the research agenda is underway and will provide evidence of community's response to drivers of change.

Looking to the future

The suite of research and monitoring programs are timed to provide rigorous evidence to the 2025 Basin Plan Evaluation and in the following year the 2026 Basin Plan Review, to ensure future water policy is underpinned by a robust understanding of social and economic consequences for the Basin. Effective evaluations of water policy will always require multiple lines of evidence and analysis.

The MDBA is addressing identified data gaps through the use of newly available data sources. For example, access to Australian Bureau of Statistics microdata holdings, which include taxation data, is being developed to refine indicators such as employment numbers or business turn-over at a finer regional scale than has previously been possible. Social sciences such as oral histories with communities are building another new information set by drawing on the local experience, which deepens the knowledge of the impact of water policy – it is important to understand what has happened to date so future policy is based on sound foundations.

The social and economic impacts of the Basin Plan to date will be reconsidered as part of the 2025 Basin Plan Evaluation. Research outcomes will also be an important consideration in policy responses to the potential impact of changes that could flow from the 2026 Basin Plan Review.

Question 8 – Science and knowledge

Summary of progress

There has been significant government commitment to support flagship research programs in the Basin including:

- The $20 million **Murray–Darling Water and Environment Research Program** investment to strengthen critical knowledge in collaboration with leading Australian scientists.
- The $7.5 million **Basin Condition Monitoring Program** investment in condition monitoring in the Basin.
- The $66 million **Integrated River Modelling Uplift Program** investment to upgrade the Murray–Darling Basin modelling capacity to improve efficiencies, and further enable whole-of-Basin modelling of the Basin water resources and provide greater access to water data and modelling information.

- The $9.8 million **Murray–Darling Basin Sustainable Yields** investment to provide a contemporary water resources assessment based on the latest hydrological and global climate change science.
- The $8 million **Sustainable Rivers Audit** investment to provide a trend and current-state condition assessment of the Murray–Darling Basin across the quadruple bottom line relative to Basin Plan objectives and outcomes.
- The **Ecosystem Functions** research program, developed and delivered in partnership between the CSIRO and MDBA, to improve understanding of ecosystem functions responses to flow and other stressors, and the connection to the health and condition of water-dependent ecosystems.
- The $20 million **Hydrometric and Remote Sensing** program investment to enhance water measurement and monitoring, and compliance capability in the Murray–Darling.

Current arrangements

In 2012 the Murray–Darling Basin Plan (the Basin Plan) was established to ensure that water management across the Murray–Darling Basin supports a sustainable and healthy river system. Science, modelling, and expert knowledge were key to the development of the Basin Plan, and as such, the Basin Plan was designed to be an adaptive instrument — it has built-in processes to adapt to new knowledge and new challenges.

From a legislative perspective, the MDBA is required to use the '*best available scientific knowledge and socio-economic analysis*' to support the Basin Plan (section 21 of the *Water Act 2007* (Cth) (the Water Act)). But more broadly, this legislative requirement reflects expectations from governments, First Nations people and Basin communities that water management accesses the best available knowledge. Since 2012, Basin governments have continued to invest in science and research to assist with the implementation of the Basin Plan as covered above under the research programs detailed.

While accredited water resource plans have been assessed as having used best available information at the point of accreditation, the currency of the information used is likely to decline as new science and new information becomes available.

States can bring forward amendments to water resource plans at any time and such amendments would again have to demonstrate use of best available information.

To support the overall approach to MDBA's science and knowledge, monitoring, evaluation and reporting, the MDBA's assessments, results and analysis regularly undergo a significant review process internally, and often externally. Like all science and research, the MDBA exposes its work to peer review. This peer review is independent and provides quality assurance on the research methodology, data and the interpretation of results. Reviews are carried out by independent and external subject-matter experts, such as expert panels, universities, research institutions, or other technical experts within other government agencies. Additionally, the MDBA uses a number of mechanisms to promote independent, best available science and knowledge, including:

The Advisory Committee on Social Economic and Environmental Sciences is an independent statutory Committee under section 203 of the Water Act, established to provide advice on science and knowledge to inform Plan implementation and the broader scientific context of the MDBA's work.

The 6 Regional Community Forums are continuing to share, communicate, engage on and validate the science and knowledge evidence base with community members to support and improve Basin science and water management.

The Murray–Darling Water and Environment Research Program invests $2 million to communication, engagement adoption and transparency to ensure research is co-designed with end users, fit-for-purpose and shared widely with stakeholders.

Additional actions have been undertaken on an as-needs basis over recent years to supplement the MDBA's science and seek independent, expert guidance. Examples include the *Independent assessment of social and economic conditions in the Basin* (the Sefton Report); the *Lower Lakes Independent Science Review*; and the *Independent assessment of the 2018–19 fish deaths in the lower Darling (*the Vertessy Report*)*.

Looking to the future

Science plays a vital role in water management and the implementation of the Basin Plan. We've learned a lot about the Basin's environments, communities and industries during the past 10 years since the Basin Plan came into effect. Building on and improving this understanding of the Basin's water resources remains key to the adaptive management of the Basin Plan and the preparations for the 2026 Basin Plan Review.

The Review will look ahead towards a sustainable future for the Basin, using the best available scientific knowledge and analysis of the socio-economic evidence to better understand current conditions, trends and issues within the Basin, while also recommending the settings that would best manage the over-the-horizon risks, vulnerabilities and opportunities facing the Basin as a whole for the next decade.

By continually investing in science, monitoring and research, the MDBA will develop a clear picture of what's needed for the Basin into the 2030s. The process has already begun with the several research programs underway to gather new, inspiring, and practical information through strategic and in-depth assessments of our water resources.

Part C – Progress on recommendations from the last review (2018)

Productivity Commission recommendations and MDBA response – as at end of June 2023

Recommendation		Response	Status	Key activities and progress to date
3.1	Once water resource plans are accredited, the MDBA should assess which (if any) resource units are over-recovered against the Sustainable Diversion Limit (SDL).	Agree in part The final amount of any over-recoveries will not be known until long-term diversion limit equivalence factors take effect through accreditation of Water Resource Plans (WRPs) and all currently contracted water recovery is delivered.	Implementation in progress	5 out of 20 NSW WRPs have been accredited, with a further 8 remaining having been formally submitted to the MDBA for assessment. The remaining 7 plans previously submitted for assessment were withdrawn by the NSW Government on 25 May 2023 and have not been re-submitted. Once the remaining NSW WRPs are accredited the Commonwealth will be able to confirm the volume of water that has been recovered in NSW and the amount of any possible over-recoveries. Options to address will be considered by the Commonwealth, noting that possible legislative change may be required to implement some options. All of Queensland, South Australia, Australian Capital Territory and Victoria WRPs are accredited and in operation.
4.3	The MDBA should, as soon as practicable, devise a strategy for undertaking the reconciliation of supply measures that	Agree Each year in the lead up to 2024, the MDBA will review state progress across each of the supply,	Implemented	The MDBA has published its Reconciliation Framework and agreed the SDLAM reconciliation strategy. The Reconciliation strategy involves annual assurance by the MDBA of the package of SDLAM measures. Assurance

Recommendation		Response	Status	Key activities and progress to date
	accommodates projects to be delivered in realistic timeframes.	constraints and efficiency measure programs. The first of these reviews was conducted in 2018 and an annual progress report is available on the MDBA website at Adjusting sustainable diversion limits – annual assurance progress report | Murray–Darling Basin Authority (mdba.gov.au).		Reports are made available annually on the MDBA website. The most recent assessment available is the 2023 Annual Assurance Report.
5.1	As soon as practicable, the MDBA should comprehensively update and publish modelling to confirm the enhanced environmental outcomes that can be achieved with additional water recovery. The MDBA should also model the benefits of additional environmental water within existing delivery constraints and use this information to establish which SDL resource units should be the priority for additional environmental water recovery.	Agree Basin governments are working together to achieve the environmental outcomes set out in Schedule 5 of the Basin Plan. Many of the more complex supply measure projects are in the early stages of consultation and refinement. Given this, new modelling will be done once these projects are settled and have progressed to implementation.	Implementation in progress	The benefits of the additional 450 GL of environmental water and the relaxation of constraints on delivery were modelled in the preparation of the Basin Plan in 2012. This modelling is published here: Hydrologic modelling to inform the proposed Basin Plan: methods and results | Murray–Darling Basin Authority (mdba.gov.au). The MDBA has committed to publishing new modelling for more complex supply measure projects once they have progressed to implementation and WRP accreditation confirms SDLs. Improved environmental outcomes with additional water recovery would be highly dependent on several modelling assumptions including environmental water holders' behaviour and having accurate representation of water resource plans of SDL units. The enhanced environmental water delivery project is still being implemented. It is in its

Recommendation		Response	Status	Key activities and progress to date
				early stage and WRP accreditation is still yet to be completed to confirm SDLs. Therefore, the modelling results published in 2012 are still best available to inform the benefits of additional water recovery until supply measure projects are understood enough and WRP accreditation is progressed further.
6.2	Before 1 July 2019, the MDBA should: • clarify what Basin states are required to self-report annually to show compliance with WRP obligations. • articulate the compliance assessment regime relevant to WRP obligations. • consult with Basin states in developing guidance on how it proposes to assess future amendments to WRPs.	Agree	Implemented	This function has moved to the Inspector-General of Water Compliance which was established in August 2021. Any WRP compliance related issues are now a matter for the Inspector-General. In relation to the reaccreditation of WRP amendments, the MDBA has produced, in consultation with Basin states, guidelines for amendments to WRPs. These are published on the MDBA's website.
6.3	The MDBA, in consultation with Basin governments should finalise and publish a detailed terms of reference to assess the effectiveness and	Agree	Implementation in progress	The 2020 Basin Plan Evaluation was released and is available on the MDBA website 2020 Basin Plan Evaluation: reports and data | Murray–Darling Basin Authority (mdba.gov.au).

Recommendation		Response	Status	Key activities and progress to date
	efficiency of WRPs in preparation for the 5-yearly evaluation in 2020.			The 2020 Evaluation did not assess the effectiveness and efficiency of WRPs as not all WRPs had been accredited and those that had been accredited has not been operating for a sufficient amount of time. The Basin Plan requires the MDBA and Basin states to report on 'the efficiency and effectiveness of operation of WRPs, in providing a robust framework under a changing climate'. The MDBA, in consultation with Basin states, is currently drafting guidance to support this reporting. The framework for the 2025 Basin Plan Evaluation will evaluate the effectiveness of the Basin Plan as determined by Chapter 13 in the Basin Plan. The 2025 Basin Plan Evaluation framework is published and available on the MDBA website.

Recommendation		Response	Status	Key activities and progress to date
8.1	The MDBA should review the Basin Plan salt export objective in its 2020 review of salinity and water quality targets. This review should consider: • the relationship between the salt export objective and site-specific salinity targets that require a higher prioritisation to meet water quality objectives. • whether there are any additional environmental benefits associated with achieving the salt export objective that are not covered by achieving the environmental outcomes of the Basin Plan. • whether the objective should be respecified or abolished.	Agree in principle The 2020 review of water quality and salinity targets is a specific component of the ongoing monitoring and evaluation program for the Basin Plan (section 22 of the Water Act). The outcomes of this work will be used to inform the next scheduled 2026 Basin Plan Review, which includes review of the salt export objective.	Implemented	The MDBA undertook a statutory review into the effectiveness of the water quality targets in contributing to the achievement of Basin Plan objectives set out in Chapter 9. A review report was prepared by an independent consultant and published on 20 January 2021 on the MDBA. Water quality targets review | Murray–Darling Basin Authority (mdba.gov.au). Overall, most of the Basin Plan's water quality targets were found to be effective, supported by the jurisdictions and instrumental in driving change in key management areas across the Basin. Further analysis of salt export objective and its contribution to achieving environmental benefits are planned prior to the 2026 Basin Plan Review. A project scope has been prepared and a consultant will be engaged to review the salt export objective along with the salinity targets for managing water flows at Milang and Burtundy. This review will inform the 2025 Basin Plan evaluation and the 2026 review.
10.1	The MDBA should: • finalise and publish an assessment framework for evaluating the consistency of trade restrictions	Agree The MDBA will work to assess the consistency of	Under consideration	A roadmap for water market reform was developed in collaboration with the MDBA and Basin governments to implement the findings and recommendations of the ACCC Murray–Darling Basin water market inquiry report. The roadmap was released on 11 October 2022.

Recommendation		Response	Status	Key activities and progress to date
	against the Basin Plan trading rules, which gives guidance about how to estimate the costs and benefits of removing trade restrictions. • specify the timeframes that it will endeavour to meet in resolving trading rule compliance matters. • notify Basin states about whether the 11 unresolved matters raised with them amount to non-compliance and what action is required by Basin states to resolve them. • publish the reasons given by Basin states for restrictions on surface water trade. • Publish its compliance determinations and the assessments that support each determination.	state trade restrictions against the Basin Plan. Publishing the overarching reasons that Basin state governments provide for surface water trade restrictions is supported by all Basin governments. The MDBA intends to publish its findings, after assessing Basin state trade restrictions.		The MDBA facilitates fair, consistent, and transparent water trading across the basin. The Inspector-General of Water Compliance (IGWC) is responsible for enforcing compliance with the Basin Plan trading rules. The IGWC has identified trade compliance as a priority in the 2022–2023 workplan. The IGWC follows best regulatory practice when identifying and undertaking compliance actions. The October 2022 Federal Budget included $31.6 million for water market reform. The 11 unresolved matters were either closed or communicated before the machinery of government change.

Recommendation		Response	Status	Key activities and progress to date
10.2	Basin governments should set and publish a work plan within the next 12 months that describes how delivery capacity issues and third-party effects associated with changes in water use and trade will be investigated and managed. The work plan should specify responsibilities, timeframes and how this information will be communicated to the water market. Basin governments should assign the MDBA responsibility for identifying and managing risks related to changes in water use and trade in shared resources and connected systems.	Agree in part Given Basin state governments have primary responsibility for day-to-day management of water resources, it is not appropriate or practical for the MDBA to have sole responsibility for managing these risks. The MDBA instead works collaboratively with Basin governments to manage risks and find solutions for River Murray system capacity issues.	Implementation in progress	The MDBA continues to work with Basin governments to manage risks and find solutions for River Murray system issues. A joint workplan to manage capacity issues has been approved by Basin Official Committee (BOC) and is currently being jointly implemented, with regular progress reports provided to the Ministerial Council. These reports are available on the MDBA website at Deliverability risk in the River Murray system | Murray–Darling Basin Authority (mdba.gov.au). Addressing River Murray deliverability risks is a continuing focus of the Ministerial Council and BOC. Following the completion of the Barmah–Millewa Feasibility Study, the Barmah–Millewa Program was established to improve the movement and efficiency of water delivery through the Barmah–Millewa Reach. This program aims to identify options that will help protect the health and cultural integrity of the river. More information on the Barmah–Millewa Program is available on the MDBA website at Barmah–Millewa Program | Murray–Darling Basin Authority (mdba.gov.au). Schedule D of the Murray–Darling Basin Agreement allows water users within New South Wales, Victoria and South Australia to trade water across state boundaries and between valleys. A review of Schedule D of the Murray–Darling Basin Agreement is underway to address deliverability risks.

Recommendation		Response	Status	Key activities and progress to date
				The Murray–Darling Basin Agreement (Schedule D – Permissible Transfers between Trading Zones) Protocol 2010 details this legislative requirement.
11.1	The MDBA, when developing the next 5-year Basin-wide environmental watering strategy (BWEWS) in 2019, should strengthen its value as the key strategic plan governing environmental watering across the Basin.	Agree The MDBA's annual environmental watering priorities provide clear guidance on the relative priority of key Basin environmental assets under all water availability scenarios for achieving the environmental objectives of the Basin Plan. The 2019 BWEWS and the 2020 Environmental Management Framework review will consider the need for including additional guidance in the BWEWS on the relative priority of key Basin environmental assets. The MDBA collaborates closely with Basin state governments to maximise environmental outcomes.	Implementation in progress	The MDBA published the revised Basin-wide environmental watering strategy (BWEWS) in November 2019. To strengthen its value, the strategy was updated to include an additional purpose to 'maximise environmental outcomes through effective and efficient environmental water management' and a new water management strategy to 'contribute to environmental benefit when managing all water.' Research to examine the relative contribution of environmental sites to Basin Plan objectives is underway through the Murray–Darling Water & Environment Research Program.

Recommendation		Response	Status	Key activities and progress to date
11.2	Following the publication of the 2019 Basin-wide Environmental Watering Strategy the MDBA should provide clear guidance material to Basin states on the expected content of long-term watering plans (LTWPs) when they are reviewed or revised. To improve the accessibility of information, the MDBA should maintain a register of LTWPs on its website, including relevant deadlines, progress towards completion, final documents when they are completed, and the status of each plan as they are reviewed and adapted over time.	Agree in principle The Basin Plan sets out what is to be included in LTWPs. Basin governments are improving the accessibility of information about environmental water planning, including through a register of long-term watering plans on the MDBA and Basin state government websites.	Implemented	The 2021 review of the Environmental Watering Plans (Chapter 8 of the Basin Plan) by the MDBA included a review of the content of long-term watering plans (LTWPs). The review found most stakeholders considered LTWPs to be extremely, very or moderately useful. The review also found support for the concept of Priority Environmental Assets and Priority Ecosystem Functions. The review found the guidance provided to prepare LTWPs should be improved. This will be considered in the next update of the Basin watering strategy and the next Basin Plan review. The Review of the Environmental Watering Plan (mdba.gov.au) is available on the MDBA website.
11.3	As part of the 2020 review of the Environmental Watering Plan, the MDBA should consider the usefulness of Basin annual environmental watering priorities and whether the	Agree The 2020 review of the Environmental Watering Plan is a specific component of the ongoing monitoring and evaluation program for the Basin Plan	Implemented	The MDBA has completed a review of Chapter 8 of the Basin Plan (the Environmental Watering Plan) in accordance with its obligations under s13.09 of the Basin Plan. The review included a review of the Basin annual environmental watering priorities.

Recommendation		Response	Status	Key activities and progress to date
	Basin Plan requirements for these annual priorities should be amended or removed.	(s22 of the Water Act). The approach to setting Basin annual watering priorities was revised in 2018 to better cover all resource availability scenarios.		The review report was released in March 2021 and is available at https://www.mdba.gov.au/publications/mdba-reports/environmental-watering-plan-review.
11.4	By 2020, Basin governments should: • establish a Northern Connected Basin Environmental Watering Committee as a mechanism for intergovernmental coordination for planning and coordinating connected environmental watering events in the northern Basin. • increase the transparency of the Southern Connected Basin Environmental Watering Committee (the SCBEWC) and its role by making governance arrangements including terms of reference, membership and reporting	Agree in principle The New South Wales, Queensland and Australian Governments recognise the need to work jointly to meet the challenges in managing environmental water in the northern Basin. These governments are establishing a stronger governance and coordination framework to improve the coordination, connectivity and management of water in the northern Basin.	Implemented	The Northern Basin Environmental Watering Group (the NBEWG) was established in November 2019 to co-ordinate the planning and delivery of water for the environment in the northern Basin. For increased transparency, the NBEWG and Southern Connected Basin Environmental Watering Committee (SCBEWC) terms of reference are available at https://www.mdba.gov.au/about-us/governance-water-management-murray-darling-basin/environmental-watering-committees. Annual reports from SCBEWC are available at https://www.mdba.gov.au/publications/mdba-reports/southern-connected-basin-environmental-watering-committee-annual-reports. Other governance improvements include the new BOC Tier 1 Environmental Water Committee (EWC). EWC was established in 2021 following the Review of the Murray–Darling Basin Joint Governance Arrangements (Claydon review) and oversees NBEWG and SCBEWC, with a focus on environmental water policy and planning matters.

Recommendation		Response	Status	Key activities and progress to date
	responsibilities publicly available.			
11.6	While achieving environmental outcomes is the primary focus of environmental water holders under their respective legislation, opportunities to contribute to social or cultural outcomes (without compromising environmental outcomes) should be actively pursued. Before the first revision of long-term watering plans, Basin States and environmental asset managers should have processes to engage with local communities and Traditional Owners.	Agree The primary focus of environmental water holders should remain on achieving environmental outcomes. The Basin Plan requires Basin state governments to prepare long-term watering plans in consultation with local communities, including bodies established by Basin state governments that express community views in relation to environmental watering, and persons materially affected by the management of environmental watering.	Implemented	The MDBA publishes a report on First Nations' participation in environmental watering report annually under the Water (Indigenous values and uses) Direction 2018. These reports are available at https://www.mdba.gov.au/publications/mdba-reports/first-nations-people-participation-environmental-watering.
12.1	As a transitional measure, the MDBA should house its Sustainable Diversion Limit (SDL) and Water Resource Plan (WRP) compliance functions within the Office of	Agree The MDBA Office of Compliance was established as a separate division within the MDBA in November 2017. However, in 2021 these	Implemented	The MDBA's compliance function was moved to the Inspector-General of Water Compliance in August 2021.

Recommendation		Response	Status	Key activities and progress to date
	Compliance before its compliance role comes into full effect in July 2019.	functions were added to the responsibility of the Inspector-General of Water Compliance.		
12.3	12.3(a) The MDBA, as the regulator responsible for overseeing compliance at a Basin-wide level, should publicly report instances where Basin states are not effectively enforcing their water take laws. 12.3(b) The MDBA's 2026 Basin Plan Review should reconsider the risk to meeting the objectives of the Basin Plan from non-compliance of water take, including the case for reducing Sustainable Diversion Limits if there is evidence of persistent illegal water take.	Agree The MDBA and Basin state governments have agreed to better define, and coordinate compliance and enforcement activities through the Compliance Compact. Progress with implementing the Compliance Compact is being reported annually. The 2026 Basin Plan Review will include consideration of the effectiveness of compliance across the Basin.	12.3 (a) Implemented (on-going function) 12.3(b) Implementation in progress	12.3 (a) The MDBA's compliance function moved to the IGWC on 5 August 2021. The Inspector-General of Water Compliance (IGWC) completed a review of state compliance systems, which is available at https://www.igwc.gov.au/sites/default/files/2022-08/compliance-enforcement-across-murray-darling-basin.pdf. 12.3 (b) The MDBA will work with the IGWC to determine its approach to reviewing compliance arrangements.
13.2	The MDBA should develop a revised Basin Plan evaluation framework. This framework should define the specific questions that are to be	Agree The revised evaluation framework is available on the MDBA website at 2020 Basin Plan Evaluation Framework | Murray–	Implemented	In 2019 the MDBA revised its evaluation framework to ensure specific questions on the outcomes and effectiveness of the Basin Plan are defined. This revised framework was published on the MDBA website at 2020 Basin Plan Evaluation Framework | Murray–Darling Basin Authority (mdba.gov.au).

Recommendation		Response	Status	Key activities and progress to date
	used to evaluate the outcomes and effectiveness of the Basin Plan, and the scales and times at which these questions will be answered. The process through which the framework will be developed should be made public as soon as possible. The evaluation framework should be finalised and be made publicly available by the end of 2019.	Darling Basin Authority (mdba.gov.au).The MDBA is also working with all Basin governments to prepare a broader monitoring, evaluation, reporting and improvement framework.		The framework for the 2025 Basin Plan Evaluation has been published on the MDBA website at Framework for the 2025 Basin Plan Evaluation (mdba.gov.au).
13.3	Basin governments should develop a monitoring strategy to give effect to the evaluation framework for the Basin Plan. This should describe the process by which the information needed to answer the evaluation questions set out in the framework will be collected.	Agree	Implementation in progress	The MDBA's commitment to develop an improved Basin-wide monitoring framework is guided by monitoring, evaluation and reporting obligations. These obligations are set out in the Basin Plan and the Water Act, and primarily relate to evaluating the Basin Plan at the Basin scale and monitoring the condition of the Basin. Significant progress has been made, underpinned by collaboration between governments, scientists and community groups, and Australian Government investment in the generation of new knowledge, tools and capabilities. Improvements to the framework include:

Recommendation		Response	Status	Key activities and progress to date
	The monitoring strategy should be finalised and be made publicly available by the end of 2019.			• 2021 Monitoring Statement identifying the data sets used to meet our wide-ranging monitoring and reporting obligations and responsibilities. • The Basin Condition Monitoring Program (BCMP) in 2022, part of the Australian Government's response to the independent assessment of social and economic conditions in the Murray–Darling Basin in 2020. • Commitment to release a Sustainable Rivers Audit on the social, economic and environmental conditions of the Basin in 2025. • Planning for the 2025 Basin Plan Evaluation, including publishing the 2025 Basin Plan Evaluation Framework and Roadmap. • The Murray–Darling Water and Environment Research Program (MD-WERP), a $20 million commitment by the Australian Government to improve Basin Plan outcomes through targeted research. • Upgrading the Murray–Darling Basin's river models to help water to help water managers make timelier, more reliable and transparent water management decisions. All Basin governments continue to implement a broad range of monitoring programs, and these monitoring programs are undertaken for a range of purposes, including but not limited to reporting obligations under the Basin Plan and Water Act.

Recommendation		Response	Status	Key activities and progress to date
13.4	After the completion of the 2020 evaluation of the effectiveness of the Basin Plan, the MDBA should publicly outline the approach it will take for the 2026 Basin Plan Review.	Agree The findings of the interim 2017, 2020, 2025 evaluations and annual progress reporting will be used to inform planning for the 2026 Basin Plan Review.	Implementation in progress	The MDBA has released its Roadmap to the Basin Plan Review which details the 4 key areas that the review will consider. • How can the Basin Plan be improved to respond to climate change? • How do we ensure a sustainable Basin, delivering the best outcome for all social, cultural, environmental and economic values? • How can the Basin Plan be improved to better recognise First Nations' values in water management and enhance their involvement? • How can the Basin Plan framework be simplified?
14.3	As a transitional measure, and before the MDBA's compliance role comes into full effect in July 2019, the Office of Compliance should be broadened to be the Office of the Basin Plan Regulator, and include compliance, evaluation and Basin Plan review functions.		Implemented	The Office of Compliance function was transferred to the Inspector-General of Water Compliance on 5 August 2021.

Office locations – *First Nations Country*
Adelaide – *Kaurna Country*
Canberra – *Ngunnawal Country*
Goondiwindi – *Bigambul Country*
Griffith – *Wiradjuri Country*
Mildura – *Latji Latji Country*
Murray Bridge – *Ngarrindjeri Country*
Wodonga – *Dhudhuroa Country*

mdba.gov.au 1800 630 114 engagement@mdba.gov.au