



National Irrigators' Council

Food · Fibre · Future

Submission to Productivity Commission
Murray-Darling Basin Plan
Implementation Review

July 2023

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Chair's Foreword

The Productivity Commission review comes at a challenging time for the Murray-Darling Basin Plan. Minister Plibersek has recently announced Federal Government support for a timeline extension and NIC welcomes this commitment, noting there are still details to be finalised.

The primary concern with implementation of the Plan is the **timelines**. If MinCo agrees, as NIC argues, to extend the timelines, it gives the states the requested time to complete the Sustainable Diversion Limit Adjustment Mechanism (SDLAM) projects as promised, removing the significant risk of buybacks for an estimated 315 gigalitres of shortfalls. Timelines should be extended, and new projects and significant changes to SDLAM projects should be agreed and delivered to avoid shortfalls and buybacks. The PC should also consider alternative delivery models for these projects.

This review comes as **recommendations** from the previous PC review of the Plan have largely gone unanswered. These sensible and evidence-based recommendations, in particular, those on incorporating complementary measures and avoiding socio-economic damage, should be implemented.

The Commission should focus the inquiry on the **socio-economic impact** of the Basin Plan and on dispelling water recovery and volume myths. The Commonwealth Environmental Water Holder (CEWH) frequently mentions 85 percent of water is for the productive sector, while the environment only has 15 percent. This completely ignores the 20,000 gigalitres on average per annum of system water which benefits the environment, particularly through connectivity. Taking this 20,000GL, plus the 2,100GL recovered by the Plan, 22,100GL is approximately 74 percent of the total water, not 15 percent. This figure puts into context the marginal benefit likely to result from buying back 450GL under the Efficiency Measures program. 22,550GL would take the environment to 75 percent, compared to 74 percent of water in the system. Adding the shortfall in SDLAM, would only add another one percent. These volumes would be unlikely to achieve any real environmental benefits.

More importantly, limited outcomes would come at a **significant cost**. Estimates put the purchase of the 450 GL alone at over \$10 billion. This figure does not include the significant flow-on effects which would result from ripping this water out of the productive sector. The market has resulted in higher value crop production, including permanent horticulture, while other properties simply would not be suitable for any other use. This means any buybacks program would also need to include farm purchases and compensation for losses. It will need to include value-add and associated business compensation packages as transport, manufacturing and processing, and other industries are impacted through fewer producers. People will lose their jobs and businesses. Towns will lose essential services. The cost of living and food availability will also be impacted through higher water prices and lower production. Some industries and irrigation areas, or parts thereof, will become unviable which will have a snowball effect forcing more people out of the industry.

As an economic agency, the Commission is uniquely placed to put the socio-economic impact of the Plan and further water recovery into context and focus. The Commission should strongly endorse extending the timelines and looking for alternatives which deliver real environmental outcomes, such as complementary measures, to finalise the Plan without the very real financial and community risks, and limited benefits of water recovery through buybacks.

Jeremy Morton
Chair | National Irrigators' Council

Background

The National Irrigators' Council (NIC) is the peak industry body for irrigated agriculture in Australia. NIC is the voice of irrigated agriculture and the industries producing food and fibre for domestic consumption and significant international trade. Put simply, our industry is helping to feed and clothe Australia and our trading partners.

Irrigated agriculture in Australia employs world leading practices in water management. The industry has extensively adopted and embraced new technologies and knowledge to ensure we are consistently growing more with less water. Australian farmers also operate under strict regulations and compliance mechanisms. These factors mean we lead the world in both farming practices and produce quality.

NIC's policy and advocacy are dedicated to growing and sustaining a viable and productive irrigated agriculture sector in Australia. We inform, we listen and we debate ideas, but we always seek to collaborate in the best interests of all water users. We are committed to the triple bottom line outcomes of water use - for local communities, the environment, and for our economy.

Introduction

The Murray Darling Basin is arguably Australia's most important agricultural region, with irrigated agriculture a key component. All Australians are connected to the Murray-Darling Basin, whether they know it or not. Forty percent of our farms, over \$22 billion in economic activity at the farmgate, thousands of direct and indirect jobs, and the vast majority of the irrigated produce which hits our dinner plates and clothes us is grown in the Basin.

In Australia, 100% of our rice, over 93% of our fruit, nuts and grapes, over 86% of our cotton, over 83% of our vegetables, over 83% of our turf, flowers and plants, over 50% of our dairy and sugarcane, and significant volumes of hay, cereals and other grains are grown by irrigation farmers. It is also important to note that more than 90% of the food consumed in Australia is grown locally.

The Plan has been a vital tool in balancing the needs of our communities, our environment and our productive sector. It hasn't always got it right, but it has achieved a great deal since its inception. Ensuring balance is needed so we can keep our rivers and communities healthy and thriving, while feeding and clothing Australia and the world.

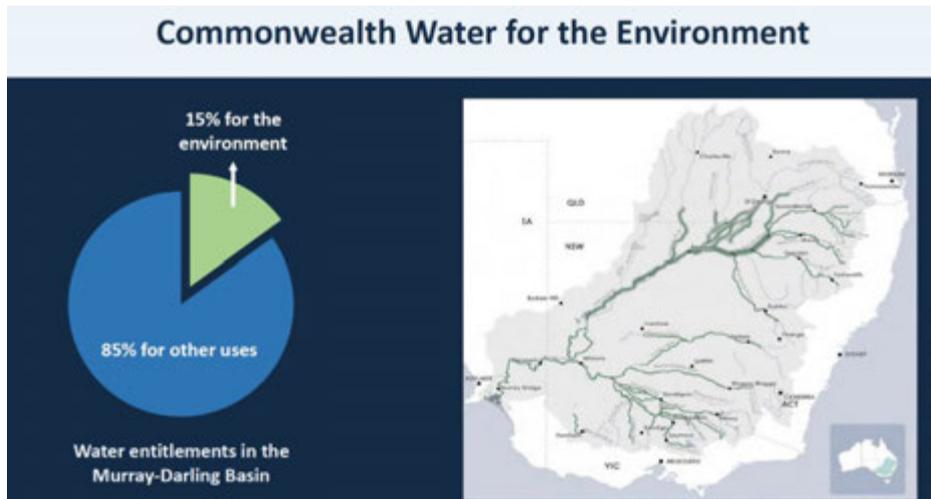
The Basin Plan is the latest in a series of reforms since the 1990s that have reduced access to water for agriculture. The Plan has seen one in every five litres of water previously available for irrigation stripped from the irrigation sector, producing hardship for irrigation communities, particularly where the water has been recovered mainly through buybacks. Negative impacts are particularly exacerbated in times of severe drought.

While much has been achieved and should be celebrated, it is noted that there are many significant challenges remaining. The potential for failure and the risks that presents is largely out of the control of individuals or communities – particularly if the Government pursues further water recovery through buybacks. Public commentary on buybacks has failed to account for the fact Sustainable Diversion Limits are being met or over-achieved¹ already and it's failed to comprehend the sheer volume of water and the impact of its recovery. In the Murray Irrigation scheme, for example, water recovery to date has seen 30% of water moved to held environmental water, but it has resulted in 50% less usage.

¹ <https://www.industry.nsw.gov.au/water/allocations-availability/tracking-surface-water/ltaael-compliance-results>

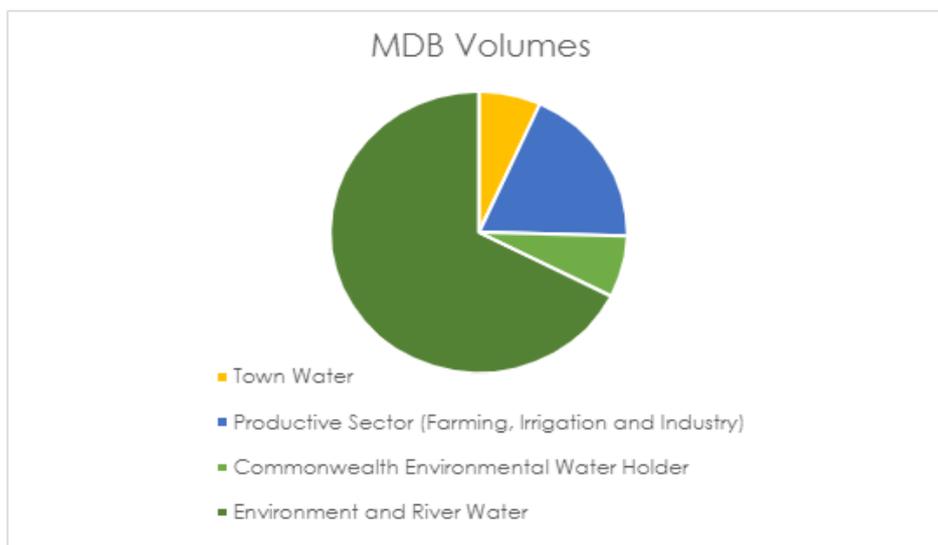
MDBA says the current potential shortfall in the Plan volumes could be around 760 GL across both the Sustainable Diversion Limits Adjustment Mechanism (SDLAM) and Efficiency Measures programs, at ~315-340 GL and ~425 GL, respectively. This represents between 20-25% of the productive pool in the Southern Basin. While water use varies year on year, to put it in context, all irrigation in South Australia is only around 355 GL, in the Southern Riverina it's 554GL, Riverina it's 618 GL, Coleambally uses 224GL, the Sunraysia and Western Murray uses 140GL, Victorian Murray uses 316GL, Victorian Goulburn 544 GL and the Lower Murray Valley uses 204 GL.

It's worth noting, that contrary to the misleading graphs used by the Commonwealth Environmental Water Holder (CEWH) [see graph below], 85 percent of the water is not used by the productive sector, leaving only 15 percent for the environment. The total average annual volume of water in the system is 30,000 gigalitres. Around 10,000GL is held in entitlements of which the CEWH holds approximately 15 percent. The remaining 20,000GL stays in the system and delivers environmental outcomes, including connectivity. With held entitlements and this connectivity water, the environment has over 22,100GL in an average year, while the productive sector and other users hold the remaining 7,900GL [see second graph below]. Using percentages that's 74 percent for the environment, which is a long way from the 15 percent. Average citizens would not know this 20,000GL exists in the system and when the CEWH uses a graph like that below it misrepresents the true amount of water.



Source: CEWH²

² River Reflections Conference 2023 Presentation by CEWH Dr Simon Banks



To recover an additional 760GL of water through direct buybacks would be catastrophic to our regions. It would see huge regional job losses and business closures, and would significantly impact food availability, trade and the cost of living.³ It is also likely to see flow on effects to value-add and manufacturing businesses, and local community businesses and services through population changes. Some irrigation schemes, or parts thereof, will become unmanageable and unsustainable which will force more farmers out of the industry, creating a snowball effect.⁴ To put it another way, if a farmer exits the irrigation scheme or area, the remaining farmers on that channel will have to shoulder the infrastructure costs. These costs could become too great for the remaining people on that channel, forcing them out too. It will also likely impact deliveries and conveyance. Further water recovery should consider the legacy issues it could create, including the Swiss cheese effect on irrigation schemes. Some have said these farms could be converted to dry land farming, but given the climate and weather conditions in some of these areas that is unlikely, which means any buybacks would also need to consider industry transition and support, buying out farms, training and development, and relocation support. It should be noted that within some IIOs, particularly in VIC and SA, the smaller size of holdings means that there are very limited, if any, alternative productive uses for properties if they cease to be irrigated. The creation of the water market has also changed the nature of what is farmed in the Basin over the last decade. Higher value crops, such as horticulture, have moved in and these ventures would suffer significant losses which would need to be compensated.

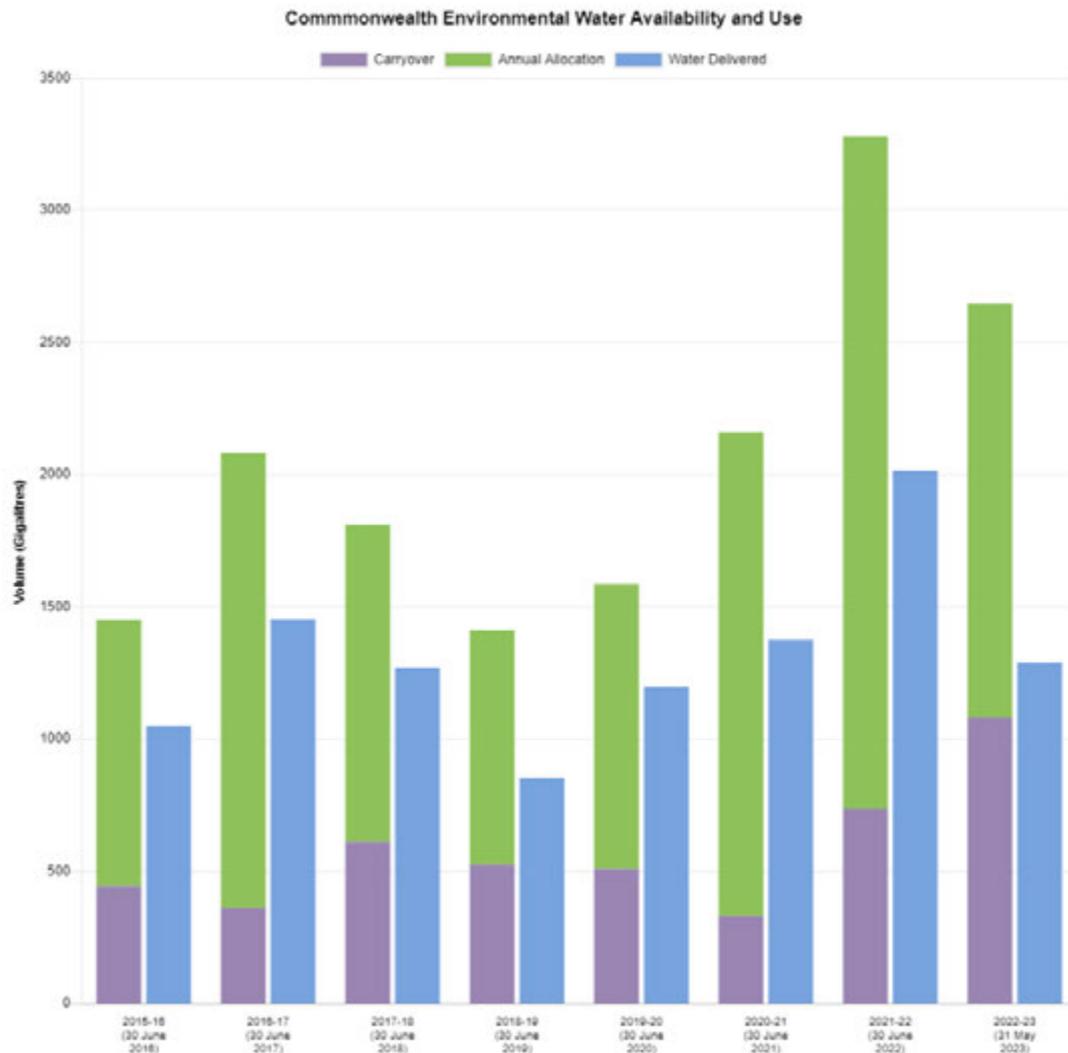
Conservative estimates put the cost of buybacks alone into the tens of billions of dollars, while additional funds would be needed for the farmer, community, irrigation scheme and industry support. Closing farms would significantly impact trade. It puts the \$100 billion in agricultural produce goal at considerable risk, at a time when governments are also moving to put limits on other exports such as coal and gas, which adds to growing economic uncertainty.

Additionally, less food grown locally with higher input costs (for example, water and maintenance) will put the price of water and food up. All Australians will be left paying more for products. Imports grown under less regulation and with inferior water management practices will be bought in meaning poorer Australians will have lower quality food and fibre products, and fewer healthy options as we move to more processed and frozen foods high in preservatives. We will also lose reliability and self-sufficiency, placing our food supply at risk to global shipping issues.

³ <https://www.frontier-economics.com.au/social-and-economic-impacts-of-the-basin-plan-in-victoria>

⁴ Ibid.

Considering the total environmental water in the system which currently stands at 74 percent or 22,100GL on average, adding an additional 760GL and increasing the total environmental water to approximately 76 percent of the Basin would have marginal environmental benefits, but catastrophic financial and community costs. The CEWH has also consistently underutilised its water portfolio, failing to its full entitlements in any year to date [see graph below] and neither it, nor the Department of Climate Change, Energy, Environment and Water (DCCEEW) has yet been able to provide a list of projects or outcomes it would seek to deliver with this additional water.



Source: CEWH⁵

While NIC and our members support healthy rivers and wildlife, we do not believe buybacks are the only option to achieving the outcomes of the Basin Plan. We recently provided a number of innovative ideas to the Department of Climate Change, Energy, Environment and Water's ideas consultation process, including options or derivatives trading, co-locating renewable energy and water infrastructure, building and extending partnerships between irrigators and environmental water holders, and investing in complementary measures. These ideas add flexibility, achieve multiple goals at once and deliver triple bottom line outcomes for the productive sector, communities and the environment – which is the most important principle of the Basin Plan.

⁵ <https://www.dcceew.gov.au/water/cewo/about-commonwealth-environmental-water>

The NSW Irrigators' Council recently published a report showing one third of water previously used by irrigators has been redirected to the environment. Its research suggests that this water recovery has come at a cost of more than 3100 jobs across Basin communities.⁶ Further work by Frontier Economics revealed the devastating impact buybacks have had on Victorian communities and industries, particularly the dairy industry.⁷

The Federal Government has committed significant resources to update the science around the Basin Plan. The focus of this funding will be on environmental science, but it must not overlook socio-economic science. The Productivity Commission is uniquely placed as an economic agency to focus on the socio-economic impacts of the Plan to date and this should be the focus of this inquiry if the Commission wants to add value, and make a meaningful contribution to the Plan and the upcoming Basin Plan Review process. It could also look at the impact further water recovery would have on the price of water, trade, food availability and security, jobs, business closures, regional economies, manufacturing, processing and value-add industries, and the cost of living.

Recommendations

1. The Productivity Commission should take a leading role, through this inquiry, in assessing the socio-economic impact of the Basin Plan to date and the likely future socio-economic impact if further water recovery is pursued through buybacks.
2. The Commission should take the opportunity to help refocus the narrative on achieving outcomes over volumes and celebrating the wins to date of the Plan.
3. The Commission should acknowledge the SDLAM, Efficiency Measures and Constraints shortfalls which will likely result if the timelines aren't extended, and recommend timeline extensions to Basin Governments to avoid more harmful recovery options, such as buybacks.
4. The Commission should review the project delivery model and make recommendations to increase efficiencies.
5. The Commission should acknowledge and support the role of complementary measures in delivering real environmental outcomes and recommend a volumetric equivalence of these projects.
6. The Commission should acknowledge and recommend further partnerships between IIOs and the CEWH, and the key role they can play in delivering real environmental outcomes and recommend these be considered as SDLAM projects or Efficiency Measures projects, where appropriate.
7. The Commission should review and explore options or derivatives trading as an alternative to buybacks.
8. The Commission should explore the benefits and dual-purpose achievements available by co-locating renewable energy generators with water infrastructure.
9. The Commission should note the lack of progress on constraints and the ineffectiveness of further water recovery until those projects are completed.
10. The New South Wales Government must urgently resubmit all outstanding Water Resource Plans and the MDBA needs to assess and accredit the plans as soon as practicable.
11. MDBA needs to assert its independence from the Minister and the Department by publicly sharing information and views on the Plan and its progress.
12. MDBA need to actively engage with stakeholders to update the socio-economic sciences on the impact of the Plan now and into the future.
13. MDBA should work with the States to increase transparency and accountability in water allocations processes and decisions.

⁶ <https://nswic.us5.list-manage.com/track/click?u=c6e5c2d75b14461767c095feb&id=e3a33c5e10&e=86089c74a1>

⁷ <https://www.frontier-economics.com.au/social-and-economic-impacts-of-the-basin-plan-in-victoria>

14. The IGWC should take a lead role in promoting the truth, particularly on compliance statistics, to dispel myths and build community trust in the system.
15. DCCEEW must urgently publish its recommended prioritised list of projects and outcomes it would like to achieve if the shortfalls in SDLAM and the Efficiency Measures programs are recovered through buybacks.
16. All Basin Governments should recommit to the socio-economic neutrality tests for the 450GL.
17. DCCEEW need to engage in genuine consultation for water policy, particularly on finalising the Basin Plan, into the future.
18. The CEWH should be acknowledged and congratulated for achieving bird and fish breeding events throughout the Basin for the past two years.
19. The CEWH should significantly increase its communications and efforts to publicise and celebrate its wins, and correctly inform the public on environmental water and its use in the system.
20. The CEWH should increase its accountability and transparency by publishing work plans and self-assessed reviews of its annual outcomes, and the IGWC should take a role in reviewing those work plans and achievement of annual performance goals.
21. The CEWH should urgently assess and publish what it would do with an additional 760GL of water if it was recovered through buybacks.
22. The CEWH and DCCEEW should continue to work with and find additional partnerships with IIOs and other stakeholders to deliver environmental outcomes.
23. The CEWH should assess and publish findings on how complementary measures and options trading schemes could be used to avoid buybacks, create flexibility and deliver environmental outcomes.
24. The CEWH and DCCEEW should assess the progress made on salinity management and whether the original Basin Plan volumes are needed given that progress.
25. MinCo and BOC should increase accountability and transparency by publishing papers and decisions in a timely manner.
26. The Basin Plan Report Card needs to more accurately reflect progress and wins.
27. All agencies commit to genuine consultation, while exploring options to joining consult to avoid fatigue and overlaps.
28. The PC should acknowledge the allocations process means climate change is already built into the Plan.
29. The Commission should review the inclusion of some level of food availability and security into the human needs component of the allocations process, and the balance remaining irrigation and environmental water, particularly in dry years.
30. The Productivity Commission and all agencies should actively engage First Nations groups to assess the impact of the Basin Plan.
31. The Commission should recommend a new model for engage with First Nations to ensure increased engagement from all Basin stakeholders.
32. The Minister and agencies should commit to genuine consultation, including use of town hall forums, to hear ideas and listen to feedback to make informed decisions, and to outline and explain decisions to affected stakeholders.
33. The Government must acknowledge the impact of buybacks are felt beyond the individual who sells their water entitlements.
34. The Government must consider and make appropriate arrangements to address the flow on effects of buybacks, including transition and support programs, if it pursues this harmful form of water recovery.
35. The Government should run a public information campaign to educate the public on the Plan and progress to date, as well as changes to farming and water management practices since inception.
36. The Government should commit to ongoing science and research on the impact of the Plan and factors affecting the Plan, and ensure agencies can adaptively manage the Plan based on this updated science.

What needs to change and what lessons can be learnt?

Socio-Economic Impact

As noted in the introduction, the NSW Irrigators' Council recently published a report showing one third of water previously used by irrigators has been redirected to the environment. Its research suggests that this water recovery has come at a cost of more than 3100 jobs across Basin communities.⁸ Further work by Frontier Economics revealed the devastating impact buybacks have had on Victorian communities and industries, particularly the dairy industry.⁹

Basin Governments must maintain their support for positive or neutral socio-economic benefits for projects under the Efficiency Measures program. Finalising the Basin Plan means achieving up to 450GL with a minimum of 62GL delivered. If there are efficiencies to be found, they should be pursued as long as they are beneficial to local communities. They should not be pursued if it harms our regions. It should also be noted, buybacks are not efficiencies. To buyback water to achieve the 450GL would be a fundamental change in what the Basin Plan was trying to achieve.

Shortfalls in the Efficiency Measures program and the SDLAM program represent around 760 gigalitres in Long Term Average Annual Yield (LTAAY). In practice, water recovery would far exceed 760 gigalitres in entitlements to ensure the LTAAY number is achieved, which could mean over 1200 gigalitres would need to be stripped out of food and fibre producing regions. The Government could shut down all irrigation in South Australia, the Western Murray and Sunraysia regions, and still fall short of fulfilling this shortfall. It is unlikely they would close whole regions, instead they would likely 'Swiss Cheese' all areas, which will cause flow on issues. For example, if a farmer exits the irrigation scheme, the remaining farmers on that channel will have to shoulder the infrastructure costs. These costs could become too great for the remaining people on that channel, forcing them out too. It will also likely impact deliveries and conveyance. Snowballing closures and job losses would likely result, and those would then impact transport companies, shipping, processing and manufacturing, and trade. All of which leads to job losses and business closures, and increased costs for everyone left in the system, which leads to higher prices for consumers.

It should also be noted that within some IIOs, particularly in VIC and SA, the smaller size of holdings means that there are very limited, if any, alternative productive uses for properties if they cease to be irrigated. Climate conditions and variable weather won't allow some of these farms to be converted to dryland farming, meaning buybacks would also need include industry transition and support, buying out farms, training and development, and relocation support.

Closing farms and value-add processing and manufacturing will impact trade. We will have less to sell, which will also impact domestic prices. Additionally, less food grown locally with

⁸ <https://nswic.us5.list-manage.com/track/click?u=c6e5c2d75b14461767c095feb&id=e3a33c5e10&e=86089c74a1>

⁹ <https://www.frontier-economics.com.au/social-and-economic-impacts-of-the-basin-plan-in-victoria>

higher input costs (for example, water and maintenance) will put the price of water and food up. All Australians will be left paying more for food and textile products. Imports grown under less regulation and with inferior water management practices will be bought in meaning poorer Australians will have lower quality food and fibre products, and fewer healthy options as we move to more processed and frozen foods high in preservatives. We will also lose reliability and self-sufficiency, placing our food supply at risk to global shipping issues.

The Productivity Commission should make this the focus of this inquiry and should consider the impact of the Plan to date and in the future if buybacks were to be pursued.

Focus on Outcomes

Politicians, public servants and the general public need to know where their food and fibre comes from, how and where it is grown, and how practices and regulations have changed over the years to make Australian irrigation the most efficient and effective in the world. As noted above, without irrigation most Australians will not be able to enjoy or afford the benefits of a healthy fresh diet.

Farmers and associated industries are impacted even more than the environment during dry times. The allocations system puts irrigators – the people growing the food we eat and the fibre we wear – last. Towns are first, then the environment, then the productive sector. The narrative that farmers are to blame for climate change or for draining the rivers is factually incorrect and needs to change.

The commentary, political discourse and consultation on the Basin Plan has lost sight of the primary goal of the Basin Plan – to get real and measurable outcomes. Instead, the focus has been on achieving the volumes, without regard for the outcomes. Volumes are no substitute for real outcomes. Just adding water and hoping for an outcome, isn't the same as taking direct action to lead to an outcome.

Additional work under the Basin Plan should be focused on delivering the outcomes, not just chasing volumes for the sake of ticking off the Plan. It must focus on what is actually achievable.

The majority of water used in the agriculture sector is monitored, modelled, measured and/or metered. The Commonwealth Environmental Water Holder should be subject to the same obligations. The CEWH has a multibillion dollar water portfolio and should be accountable to the Australian people for the use of this public asset.

The CEWH needs to be more transparent by setting work plans and targets, having its performance monitored and measured, accounting for every drop, and being held accountable for its use of water, including impacts on landholders and communities.

Politicians and other stakeholders have called for buybacks on the 450 GL Efficiency Measures program. This program, as the name suggests, is about increasing efficiency of water movement throughout the system. Buybacks aren't efficiencies. To buyback this water would be a breach of the original intent of the Act and the Plan – as agreed to by the Commonwealth and the States.

The 450 GL is also tied to neutral or positive socio-economic outcomes for local communities. Buybacks as noted above would have catastrophic socio-economic outcomes for communities and thus should not in any way be considered for the Efficiency Measures program, because to do so would again go against the intent of the Plan.

The buybacks narrative fails to comprehend the fact without delivering on constraints management projects water cannot effectively move through the system. In other words,

even if the Government ripped water out of local communities through buybacks, it would not be able to use it until the constraints projects are delivered. Estimates put these project delays at between five and ten years.

Extend the Timeframes

As noted above, constraints work will take between five and ten years to complete. Without this work, additional water recovered will not likely be able to be used. More time and resources are needed to deliver these projects.

The States have recently asked for more time to be given to complete the SDLAM projects and this too should be given to allow the States to deliver on their promises to regional communities. It is important to note, water users have delivered on their commitments and have invested and made market decisions on the understanding that the States would deliver on their commitments. It is therefore imperative for the States to deliver.

The timeframes should be extended to cater for losses and delays incurred by COVID and floods which have meant work could not progress. Getting the right plan in place and delivering what was promised, should be a priority and if that takes a couple of extra years, then so be it. The alternative of buybacks carries too much risk, while being patently unfair on regional communities, jobs and businesses which have already done the heavy lifting in completing the Plan.

NIC would like Basin Governments to evaluate not only the timelines, but the project delivery model for these infrastructure projects. This model from approvals, to budget, to time to build, should be assessed to see if they are the most appropriate way to manage these large projects. The process could be streamlined and governments could be held accountable for delivery timeframes, as examples of how efficiencies could be found.

Invest in Complementary Measures

The irrigated agriculture sector has long advocated the need for complementary measures to improve connectivity and habitat for native fish, concerted action on terrestrial and aquatic animal and plant pest species, and to address cold water pollution. A dedicated focus on these measures is becoming increasingly pressing, where it is underpinned by the outcome of scientific work on native fish, impacts of terrestrial and aquatic pest species etc.

Without complementary measures, the water reserved for the river and the environment will not produce the desired environmental outcomes and the expectations of communities. A flow target is not an environmental outcome, but just one part of the mechanism to achieving an outcome.

NIC submits that Complementary Measures (also known as toolkit measures in the Northern Basin) facilitate:

- delivering equivalent ecological outcomes required to meet Basin Plan objectives that will not be met through existing water recovery measures
- supporting the rehabilitation of native fish species
- improving productivity within aquatic ecosystems
- increasing the resilience of threatened species
- improving social and economic prosperity from aquatic resources
- contributing to the achievement of cultural water objectives.

These are critical measures designed to underpin short, medium and long term outcomes to ensure native species have the greatest opportunity to thrive. This approach will deliver the Basin Plan's environmental objectives over time without additional collateral damage to regional communities.

Such measures fall into two categories, fundamental interventions or actions required to achieve improved ecological outcomes in our river systems, or new opportunities for operation and management of environmental resources.

Complementary measures could include, but are not limited to:

- carp control through the release of the Carp Herpes virus
- appropriate management of cold water pollution
- improvement of fish migration through fishways along the Barwon-Darling and tributary catchments
- restoration of native fish habitat
- feral animal control in wetlands such as the Narran Lakes, Gwydir Wetlands and Macquarie Marshes
- Riparian land management
- Weed management.

The irrigated agriculture sector has for some time viewed complementary measures as potentially so effective that they could achieve better environmental outcomes than recovering further water. We strongly advocate consideration of complementary measures as a part of achieving the remainder of the Basin Plan.

Governments should embrace complementary measures throughout the Basin and not only in the Northern Basin, so Efficiency Measures and/or SDLAM programs should be expanded to accept non-licensed water options such as those listed above. If the Basin Plan remains steadfast on volumes, these projects should be given an equivalence in volume to account for them under existing programs.

Build and Extend Infrastructure Partnerships

The Commonwealth Environmental Water Holder has been able to successfully build partnerships with Irrigation Infrastructure Operators (IIOs) to deliver e-water. During the recent floods, the CEWH used the Murray Irrigation system to provide refuge for fish during the black water events by oxygenating the water.

Environmental Water Holders have developed effective partnerships with Murrumbidgee Irrigation and Coleambally Irrigation to deliver water to environmental assets, including black box depressions.

The CEWH delivers water using the Renmark Irrigation Trust system to water floodplains in South Australia and has used the Central Irrigation Trust infrastructure to deliver hundreds of megalitres to two sites, with further options available through this network into the future. This water is only able to reach these areas thanks to that system, it would otherwise not be possible.

The Government has put some funding aside for the Murray Reconnected Floodplains project. According to the project's website¹⁰, it will:

Upgrade of existing infrastructure both within the Murray Irrigation channel network (escapes, channel upgrades), and private land (creek crossings and fences) within

¹⁰ <https://www.murrayirrigation.com.au/project/murray-reconnected-floodplains>

the region's rivers, creeks and wetlands to build on enhance e-water events by delivering water into natural assets via Murray Irrigation's channel network. The overarching objective of this project is to deliver better environmental outcomes using water already recovered through water reform.

The development of a business case during stage 4 of the Murray Reconnected Floodplains project will explore the viability of the below potential benefits on full implementation.

- *Total of 74,000ha of floodplain ecosystems re-connected and rejuvenated*
- *2,000km of riparian systems connected to the Murray River (20,000ha riparian beds). 2,000 on-farm private wetlands rejuvenated (54,000ha wetland area).*
- *Our modernised supply network will enable precise control and measurement of water, enabling targeted environmental outcomes and demonstrating full accountability of public water*
- *Target and rehabilitate at-risk ecosystems*
- *Key water delivery infrastructure is already in place*
- *Potential water recovery offset benefits*
- *Strong community support.*

In parallel recognising the challenges faced by the Murrumbidgee SDLAM projects, Murrumbidgee Irrigation and Coleambally Irrigation completed earlier work which investigated the opportunities to optimise the operation of the Murrumbidgee, these organisations have sought feasibility funding for a project which has both elements of SDLAM and efficiency measures. The Murrumbidgee Optimisation Project, pre-feasibility analysis funded by Murrumbidgee Irrigation and Coleambally Irrigation has identified two key areas with immediate potential for environmental and operational outcomes Enhanced Mid-Murrumbidgee storages and Control of Lowbidgee flows both of which could fit under existing notified SDLAM projects. The Murrumbidgee Optimisation project will provide enhanced river re-regulation capability using existing structures and identify opportunities for strategically based additional re-regulation capacity to support efficient environmental flow delivery. The project has the potential to contribute significant (c.160GL) environmental offsets and water savings and is the subject of a feasibility application currently before the NSW department.

The Commonwealth has an opportunity to consider support these ideas as solutions to the Basin Plan finalization challenge. These partnerships are examples which could easily be adopted to deliver similar results in other parts of the Basin and should be urgently explored. There is an opportunity to extend this investment outside the IIOs to deliver actual results. For example, installing pumps to move water from rivers and storage to high points in the landscape to water creeks and wetlands. This investment would negate the need for large scale flooding, while delivering a similar result. The Government should explore these opportunities as a matter of urgency.

Options Trading Through River Reach

River Reach was an idea explored pre-Basin Plan. Put simply, it is an options trading or derivatives program. A market mechanism which would provide water for the environment when it was needed, while farmers and other water owners retained their entitlements and could use the water when the environment didn't need it or could not use it. NIC was involved with testing the idea and working to help develop it, but at the time it was seen as too difficult given the market was not as well established as it is today. For context, imagine a water owner's entitlement as ten buckets. In any given year, they receive an allocation against these buckets. In wet years like we have just experienced, water holders receive allocations against all ten buckets (100% allocation). In dry years, some farmers don't receive

any allocations or limited amounts, maybe two buckets (20% allocation). In average years, five to seven buckets (50-70% allocations) will receive an allocation.

River Reach could be used in the current market to give the Commonwealth Environmental Water Holder (CEWH) options against future water allocations.

For example, the Commonwealth could negotiate with a farmer in the Murray region an option to purchase any water allocated against two of their buckets. If the farmer received an allocation against these buckets, the CEWH would have the option to purchase that water allocation to use as required. If there is no allocation, then the option cannot be exercised.

If the CEWH doesn't need or cannot use that water at that time, then the farmer would retain it to use, carry over or trade. The CEWH would negotiate these options with farmers via an online platform, ideally owned and developed by the Commonwealth, and could perhaps include standard terms and offers to streamline this process. For example, one offer could be for the CEWH to purchase an option against the first bucket and the last bucket. In a wet year, the CEWH would be able to access both these buckets. In a dry year or average year, the CEWH may only be able to access one of these buckets, should it need that water. A range of offers could be developed to address specific needs in individual catchments with appropriate terms and conditions. The options could also be purchased for one year or multiple years, or permanently. A simple video was put together explaining it here:

<https://youtu.be/y2cYsmDon3E>.

River Reach's biggest advantage is that it provides flexibility which is certainly lacking in the Plan and Water Act. It gives the CEWH an option if it needs it, without the need to permanently transfer water out of the productive pool. If the CEWH doesn't need the water that year or season, the farmer can use it to grow food and fibre.

It can move between the CEWH and farmer from year to year or season to season as required. It also allows the farmer to generate an income or part thereof to compensate for losses in production if the water is not available to them. It would also be cost effective for the Commonwealth as it is leasing an allocation over time, not buying an entitlement up front.

River Reach avoids the need for buybacks and the associated costs; adds flexibility to the water market and Plan so water can move between users depending on need and availability; ensures production is not permanently cut, particularly if water is not needed by the CEWH or can't be used; and ensures no socio-economic harm to regions from buybacks.

A similar pilot program was run by the Commonwealth Environmental Water Holder at Narran Lakes.¹¹

Shared Benefits Through Renewable Energy

The energy market is transitioning in Australia as more renewables are being brought into the system and new transmission infrastructure is being built. Historically, Australia had centralised power generation and in the future it will be completely reversed. More and more energy will be generated in the regions and transmitted back to our cities.

There is an opportunity to invest in renewable energy infrastructure which has a dual purpose. In India and Egypt, they have started investing in solar panels which cover irrigation channels and California is exploring the idea too. The renewable energy is produced on land already being used, so it does not need extra prime agricultural land to be wasted or new

¹¹ <https://www.dcceew.gov.au/water/cewo/media-release/narran-bounces-back-to-life>

land to be cleared. The panels also limit water evaporation from the channels (see footnotes for examples).¹²

In Japan and California, there are small scale examples of investments in floating photovoltaics. China, India, Brazil, Portugal and Singapore have examples of much larger scale projects. These are again examples of projects with dual or multiple benefits: clean energy generation, less evaporation, less land clearing or wasted prime agricultural land, fish and breeding habitat.¹³

These projects are creating efficiencies in the water, because less is being lost and therefore could be funded and contribute to the Efficiency Measure (450 GL) program. The Government should prioritise investment in these solutions to both our growing energy needs and to increase water efficiencies.

Some of our members are already exploring options to invest in similar solutions at the farm and IIO scheme level, which shows there is community and business interest and support for the concept.

Over-Recovery

To regain trust with communities around the Basin, consideration should be given to a clear legislative mechanism that water recovered will be to the Sustainable Diversion Limits, no more or no less. Any region which is over-recovered should have a clear pathway to ensure excess environmental water is returned to the productive pool or put to use as determined by that community.

Continuing to not address the over-recovery of water is creating inequities between Basin communities. Any future water recovery should also avoid over-recovery and take a conservative approach to ensure water is not unnecessarily taken out of communities.

Constraints

Constraints Management remains one of the key challenges of the Basin Plan. It is clear that the original Basin Plan underestimated the difficulties of removing constraints. Progress has been slow fundamentally because some of the flow regimes and timetables for Constraints Management indicated in Plan are unrealistic.

Constraints removal is a key part of the Sustainable Diversion Limit Adjustment Measures (SDLAM) package and works are needed to address and remove the constraints which prevent the projected environmental flows reaching their targeted destinations, including the South Australian border.

Constraints Management has been slow because it requires very detailed work in identifying amelioration requirements, engaging those who are affected and bringing them along. In particular, the risk of flooding of individual properties has proven to be an extremely volatile and emotional issue for those potentially affected. COVID and floods have also played a role in delaying the projects to date.

Governments and all those involved in the Basin Plan must recognise that resolving the issues will require detailed and extensive work to plan, map, engage and resolve community and individual concerns. In the context of the latter, this means genuine engagement with local communities.

¹² <https://www.bbc.com/future/article/20200803-the-solar-canals-revolutionising-indias-renewable-energy>;
<https://www.designboom.com/technology/over-canal-solar-panels-evaporating-water-ucsc-07-13-2021/>;
<https://www.anthropocenemagazine.org/2021/03/the-two-for-one-benefits-of-solar-canals/>

¹³ <https://www.voanews.com/a/something-new-under-the-sun-floating-solar-panels-/6794529.html>

There is no magic bullet which will speed up the process of achieving constraints removal. The only way it will be achieved is by thorough and painstaking work, and by decision makers being brave enough to revisit flow regimes when they are proven to be unrealistic. Clearly, there are serious implications if constraints cannot be removed or bypassed. At the highest level it seems it would be impossible to deliver the volumes of water required to achieve overbank flows and flows to critical environmental sites (particularly in South Australia) if constraints are not able to be addressed.

Without work on constraints, it won't matter how much additional water the Commonwealth recovers as it won't be able to use it.

Those criticising failure to remove constraints need to be aware that every person involved deserves a fair hearing and an opportunity to offer a solution to their individual property problems. NIC recognises that in the long-term, achieving the flows dictated in the Basin Plan is going to cause some inundation of private property. However, this needs to be handled in a way which gives everyone involved the right to a fair hearing and the ability to avoid livestock losses, property or asset damage and personal hardship.

Government must work with infrastructure operators to identify where existing or new infrastructure offers an opportunity to bypass a constraint. Government and river operators must recognise infrastructure owners are obliged to seek a fair return for the use of their infrastructure, including for long-term impacts and replacement costs.

The Commonwealth and Basin States need to explore every opportunity to utilise privately-owned irrigation infrastructure to deliver water efficiently and to overcome system constraints. For example, the MDBA is currently assessing the use of Murray Irrigation's system to overcome some of the limitations imposed by the Barmah Choke. However, the use of privately-owned systems cannot be assumed by governments and needs to be the subject of proper contract negotiations. Governments may need to look at whether new infrastructure might be used to overcome limitations in the capacity to deliver overbank flows in some areas.

Recommendations

1. The Productivity Commission should take a leading role, through this inquiry, in assessing the socio-economic impact of the Basin Plan to date and the likely future socio-economic impact if further water recovery is pursued through buybacks.
2. The Commission should take the opportunity to help refocus the narrative on achieving outcomes over volumes and celebrating the wins to date of the Plan.
3. The Commission should acknowledge the SDLAM, Efficiency Measures and Constraints shortfalls which will likely result if the timelines aren't extended, and recommend timeline extensions to Basin Governments to avoid more harmful recovery options, such as buybacks.
4. The Commission should review the project delivery model and make recommendations to increase efficiencies.
5. The Commission should acknowledge and support the role of complementary measures in delivering real environmental outcomes and recommend a volumetric equivalence of these projects.
6. The Commission should acknowledge and recommend further partnerships between IIOs and the CEWH, and the key role they can play in delivering real environmental outcomes and recommend these be considered as SDLAM projects or Efficiency Measures projects, where appropriate.
7. The Commission should review and explore options or derivatives trading as an alternative to buybacks.

8. The Commission should explore the benefits and dual-purpose achievements available by co-locating renewable energy generators with water infrastructure.
9. The Commission should note the lack of progress on constraints and the ineffectiveness of further water recovery until those projects are completed.

Are current arrangements operating effectively and could they be improved? Have governance and institutional arrangements proved effective and what changes could be implemented?

Water Resources Plans

Failure of the New South Wales Government to provide accurate and compliant WRPs has been a major distraction and let down for all Basin stakeholders. It has given journalists and other commentators an ill-informed and misguided opportunity to take potshots at the irrigation sector and certain catchments, and created mistrust and misinformation about compliance and water use.

All businesses need certainty to operate and that includes our farmers and value-add businesses. The WRPs will provide certainty once they are in place and should be accredited as soon as practicable. It would go a long way in rebuilding trust and taking away the negative stigma. They would also shed more light on over-recovery at a catchment level, which needs to be addressed as noted above.¹⁴

Murray-Darling Basin Authority

The MDBA should be praised, like the CEWH, for its engagement of regionally based staff throughout the Basin. Not only is this network able to help push messages out into communities to ensure people are informed, but it is vital for those locals to be able to listen to communities and send that feedback to Canberra.

Sir Angus Houston, Chair, and Andrew McConville, CEO, should also be acknowledged for the time they have spent visiting the Basin and meeting with as many stakeholders as they can to hear exactly what people think of the Plan – the good, the bad and the ugly. Hiding in Canberra and enforcing policy on communities, rather than working with them is not the way it should be done, so that engagement from MDBA is welcomed.

MDBA has recently published its roadmap for the Basin Plan Review and has taken significant steps to engage stakeholders and communities, and to bring people along for the journey, and NIC supports these efforts and encourages it to continue throughout the Review and beyond. The River Reflections conferences are a positive example of this effort to bring people together and we welcome it.

On broader issues, it is clear MDBA officials are often conflicted in their roles to support public statements made by Ministers or the Department. MDBA needs to reassert its independence and provide frank and fearless advice, not just in private, but in public. It should be empowered to speak its mind, particularly when it comes to targets, timeframes, ideas and projects, and risks – even when that might go against what Ministers have said. It needs to be

¹⁴ <https://www.nswic.org.au/wp-content/uploads/2023/03/2023-03-21-Wheres-the-Gap-FINAL.pdf>

honest with the public and inform the Ministers on what they need to hear, not what they want to hear. For example, it has been obvious to most, including MDBA officials, the timelines would not be met. MDBA should have said so earlier and applied pressure to get results by calling it as it is, rather than obfuscating. MDBA also has a role in identifying solutions to finalise the Plan and could have taken the lead in this process, but has failed to do so to date.

As noted, NIC supports the additional funding MDBA received to update Basin Science and modelling. We do however again note the importance that this funding does not solely go to environmental impacts.

MDBA must work with ABARES, Treasury, the Productivity Commission, Foreign Affairs and Trade, Employment and Agriculture departments to assess the impact of the Plan on jobs, businesses, food and fibre production, trade and our economy.

MDBA should make more efforts to increase transparency and accountability, particularly when it comes to water allocation processes. It should publish its determinations and reasons, and avoid falling into past practices of blame shifting with the states on who exactly made what decisions and how those decisions were made.

Inspector-General of Water Compliance

NIC supported the introduction of the IGWC and has welcomed its contribution to the Basin Plan through a number of inquiries and reports delivered to date. The tough cop on the beat helps build confidence in the system and its participants. Further work is needed on this front, but progress is being made.

There is a role for the IGWC to play in being a single source of truth for some water information, including compliance data at both a Commonwealth and State level, and in highlighting the strong compliance across the Basin by water users.

It should also champion the fact that non-compliance is normally one-off cases and the vast majority – high 90 percentile – of water users do the right thing which would go a long way to dispelling mistruths peddled by some and to building community trust.

The IGWC needs to be careful not to conflate issues with their powers and role, for SDL Compliance, with any idea of an absence of other compliance by state regulators.

Below the submission discusses the need for an independent review of the CEWH and perhaps the IGWC could have a role going forward in reviewing the work plans and performance of the CEWH to ensure it is delivering outcomes.

Bureau of Meteorology

The Bureau has been very active in the water space and should be congratulated for its efforts, particularly on the Basin Water Information Portal. It is a useful tool for water users and stakeholders and will continue to grow in use as it develops further.

The BoM has engaged well on the water markets project, including trying to navigate a complex system and come up with a user-friendly platform for market users to access and report. It has gone to great lengths to acknowledge the difficulty and burdens of reporting and it working with IIOs and other stakeholders to find a clear pathway for all. It's a good example of how government agencies can work with stakeholders to find common ground and commonsense.

Department of Climate Change, Energy, Environment and Water

The Department has recently undergone machinery of government changes which have created some issues, particularly through loss of experienced staff and the corporate knowledge which goes with it. Water policy is complex and turnover has led to some significant problems, which have created a lack of trust in DCCEEW, particularly in the handling of the recent "Strategic Water Purchase" and associated consultation and information sessions.

Coupling infrastructure delivery and policy, seems on paper to be a good move, however it remains to be seen if these teams can work together to achieve results and not fall into the siloed approach we've seen previously.

In the past, for example, the National Water Grid Authority made some announcements without even consulting MDBA or water policy experts, so it is hoped these teams' co-location will increase their communications and teamwork.

The recent ideas consultation process, which is currently being assessed, gives DCCEEW the opportunity to regain some of its credibility by reviewing and recommending these ideas be progressed instead of just turning to the quickest and easiest option of buybacks. The Department must be frank and fearless, and it must act in the best interests of Basin communities. Any real assessment of buybacks doesn't pass this test, nor does it pass the general interest test as they will lead to significant issues on trade, jobs, food availability and the cost of living for all Australians.

More concerning though is that under questioning during recent consultation sessions, DCCEEW was asked what it would do with the additional 760GL of water if it was bought back. Unfortunately, the Department doesn't have a plan for this water. When pushed, officials could not name one urgent need and said they were still working out what to do with it, let alone where it would come from. This alone surely indicates a need to reconsider the unwavering drive people have to recover water just to tick off a number in the Plan. This alone is a good reason to go back to basics and think about what the outcomes are we are trying to achieve and work backwards from there, rather than chasing volumes for a need even the Department cannot articulate.

When it comes to water recovery, NIC would strongly suggest 'cost effective recovery' must take into account a full range of flow-on impacts and strategic value of targeted purchases. It should not be a simplistic assessment which simply compares the dollar value per megalitre to the taxpayer, as has been suggested by some.

It is true on a straight dollar cost to taxpayers, buyback is generally cheaper than recovery of water through infrastructure investment. However, such simplistic assessments ignore the flow-on impacts in communities, the value of future production and employment opportunities. Numerous reports from Frontier to Sefton, have demonstrated very clearly buybacks have a detrimental impact on communities.

Buyback has been shown by government and independent inquiries to be a very blunt instrument and those who advocate its continued use do so for self-serving purposes. It was clear from the Northern Basin Review that the only areas with positive outcomes overall were the areas where recovery had been achieved through infrastructure projects. It is critical that flow-on impacts be taken into account. The MDBA and the CEWH both make the point repeatedly that the proof of the extent to which the environment is recovering is something that can only be properly measured over a minimum of a decade.

NIC finds some of the criticism of the both on-farm and off-farm investment hard to accept. The most spurious of the criticism to date has been from a prominent academic who has

argued irrigators should not be encouraged to become more water efficient because that will result in less run-off to river systems. Efficiency works on farm and in system have been very successful and there are numerous examples of areas where production has been able to either increase, while substantial quantities of water returned to the environment. NIC supports an ongoing role for Government in efficient use of water and greater productivity, while noting we do not support any changes to the socio-economic neutrality tests.

Commonwealth Environmental Water Holder

It should be noted that the Government has been largely successful in recovering environmental water. Over 2100 gigalitres has been transferred to the Commonwealth Environmental Water holder (CEWH) and is being put to use.

Over the last couple of years, the CEWH has delivered bird and fish breeding events throughout the Basin and that should be celebrated.

Assuming the Commonwealth recovers the additional 49GL under the Bridging the Gap program, farmers have done the heavy lifting and have contributed to over 80% of the Plan's volumetric targets.

This multibillion dollar water portfolio is in addition to the system water which sits at around 20,000 gigalitres on average per annum and keeps our rivers connected and delivers environmental outcomes on its way through the system. Over 22,100 gigalitres in both held and system environmental water represents around 74 percent of all water in the Basin. The remaining water is distributed to towns for human needs and the productive sector, primary for growing our food and fibre. The CEWH should put its water use to people in these terms. Its continued use of the entitlements or held water statistics is misleading and seeks to undermine the productive sector.

The CEWH has started publishing work plans and annual reports which is welcomed, but still needs to increase its transparency and accountability for the use of environmental water and the results it is achieving. Like farmers have adapted to climate change by investing in research and development to do more with less, so too must the CEWH. It needs to better target its resources and look to innovative ways to achieve the same results. For example, instead of trying to create overbank flows and floods, it could invest in infrastructure such as pumps to move water to where it is needed. This will become even more important in the future as dry years increase pressure on all water users, including the CEWH which needs to share the impact of fewer allocations as farmers do. Its water use needs to also be monitored and measured to assess impacts and results. Perhaps there is a role of the IGWC in monitoring and reporting on the performance of the CEWH.

The CEWH needs to do more to celebrate and communicate its wins, so the public gets a real and true picture of progress. Reporting on the Basin Plan is primarily negative and more work needs to be done to celebrate the great wins the CEWH achieves.

As noted above, there are likely to be shortfalls in the SDLAM and Efficiency Measures programs if the dates aren't extended. At no point during the recent consultation sessions, have the CEWH or Department or any associated agency or stakeholder group, been able to articulate the exact ways in which the CEWH would use this additional 760GL if it was recovered through buybacks. The response has been that the Minister has said it would be recovered, so it will be. When pushed further, the Department said it was still working on what exactly it would do with the water. The CEWH should urgently publish its list of projects and outcomes for this 760 GL, and it should be open to public scrutiny before any further water is recovered.

Management of environmental water will continue to be one of the key ongoing roles for Government once the Basin Plan is fully implemented. It is a complex task which must be

focused on planning the use of water in way which produces positive environmental outcomes and where possible positive flow on outcomes for communities and local economies.

It needs to be managed with a high degree of cooperation with other water managers and users, and in a way which builds on natural events. NIC would add it is critical the 'good neighbour' policy adopted by the CEWH continues into the future and should be formalised.

NIC notes the importance of local input into environmental watering. "Localism" is vital to engage local communities in environmental watering planning and decision making. Engagement of local areas coordinators and rangers by the CEWH has gone a long way to establishing partnerships and trust through consultation and should be further encourage as a way of sharing information out of and to Canberra.

It is clear while outcomes are being delivered and significant progress has been made, there is still a lot of learning for the CEWH to do about the most effective timing of events and how to ensure best results, without impacting other water users. New science and the practical learnings of implementing environmental water management will continue to help build this knowledge and management practices.

NIC would continue to strongly encourage close cooperation and communication between all levels of management of rivers along with river experts and local communities. We also strongly encourage the collaboration and partnerships the CEWH has developed, particularly with the IIOs, in delivering e-water and encourage further take up of these into the future.

NIC has long advocated that to achieve improved ecological outcomes (which we support) a range of complementary or non-flow measures (referred to earlier in this submission), should be examined. These are measures which are complementary to the use of environmental water. The CEWH should assess how these can be delivered to achieve real results without the need for further water recovery.

NIC supports the capacity of the CEWH to trade held water and has advocated the proceeds of trading should be used to fund complementary measures. In the past, Basin Ministers requested Basin officials undertake the necessary work to examine complementary measures, though it is not clear what progress has been made to implement their use.

Any investment approach should involve a range of measures designed to support the Basin Plan's environmental objectives over the short, medium and long-term to ensure native species have the greatest opportunity to thrive. Such an approach will deliver the Basin Plan's environmental objectives over time without further collateral damage to regional communities.

We also advocate in this submission for options or derivatives trading through the River Reach program. This would allow flexibility between the use of water for the environment and the productive sector. It would give the CEWH options without committing them to exercise those options if they were not needed that season. We recommend the CEWH assess this idea and run a trial of it to test its feasibility.

NIC would note that one of the major success stories of the last 30 years has been the reduction in salinity. That is one reason we find some arguments criticising efficiency programs so illogical. It is also an example of why the outcomes of the Basin Plan must be considered. Reducing salinity was one of the major issues it aimed to address and it's been done, so we need to now consider if the volumes which the Plan called for are still accurate.

Accountability and Transparency

While we have address accountability and transparency by agency above, NIC is continuing to call for increased accountability and transparency at the Basin Officials and Basin Ministers levels.

The Federal Minister has started to publish agendas ahead of MinCo meetings, but it is often only a day or two before the meeting and is very limited. Both MinCo and BOC should publish the full agendas and papers of their meetings well in advance of the meetings, and detailed minutes of discussions and outcomes in a timely way following the meetings. Every drop of productive water use is monitored, modelled, metered and reported on by multiple agencies. The community deserves the same level of transparency and accountability from decisions makers.

Monitoring, Evaluation and Reporting

The Basin Plan Report Card should be reviewed to see if there is a better way of communicating progress. The colour gauges used often present a more negative picture of progress than is the reality.

The Basin Plan Report Card for 2022 was full of good news, but you wouldn't know it if you only looked at the risk graphs bathed in red. Great progress was overshadowed by the hunt for perfection – as if predicting the weather, managing thousands of kilometres of rivers, dams and creeks, and implementing the most complex water policy in the world could ever be flawlessly accomplished.

For example, the SDLAM supply and constraints projects showed 30 of 36 projects were likely to operable or very close to it by the deadline, while only six remain at risk. The graph though was red and at high risk. Over 83% completion, which is a phenomenal effort considering the scale of these projects, was shown in a negative light and contributed to negative public discourse.

On the Efficiency Measures projects the report noted only 26 gigalitres recovered. It was again in the red, but when you consider it's a significant proportion of 62 gigalitres needed to be recovered to meet the benchmark, there is still time to reach that target – maybe orange or yellow would have been more appropriate.

Reports, like the Basin Plan Report Card, should celebrate the fact that over 2,100 gigalitres has been returned to the environment and is delivering results. 98% of surface water and 92% of groundwater targets have been met with only 49 gigalitres left to recover under Bridging the Gap. Environmental water delivery was down, thanks to the floods, yet somehow both risk indicators for Bridging the Gap and e-water are labelled as good progress, but not on track.

MDBA needs to reassess its rating scales and come up with something a bit more positive about the progress of the Basin Plan. It's working and it's delivering results. There's still work to be done, but it's not all in the red as the graphs would have you believe. If you only strive for perfection in a system with so many variables, you'll never see the wins or appreciate the scale of what has been achieved.

More generally speaking, there are a lot of agencies and independent reviews of the Basin Plan. These are in addition to the information and consultation sessions held on individual issues and Governments need to consider consultation fatigue.

It is incredibly important for communities to be consulted and that should always be a high priority for governments, but they should work more closely together to ensure information is

shared and where possible consultation and engagement is done in collaboration with other agencies to save stakeholders and communities from having to constantly repeat themselves. Decision makers should also use the reports and recommendations to take action. For example, it is unclear how many, if any, of the Productivity Commission's 2019 Basin Plan report recommendations were implemented, but here we are again putting forward submissions to a new inquiry.

Recommendations

10. The New South Wales Government must urgently resubmit all outstanding Water Resource Plans and the MDBA needs to assess and accredit the plans as soon as practicable.
11. MDBA needs to assert its independence from the Minister and the Department by publicly sharing information and views on the Plan and its progress.
12. MDBA need to actively engage with stakeholders to update the socio-economic sciences on the impact of the Plan now and into the future.
13. MDBA should work with the States to increase transparency and accountability in water allocations processes and decisions.
14. The IGWC should take a lead role in promoting the truth, particularly on compliance statistics, to dispel myths and build community trust in the system.
15. DCCEEW must urgently publish its recommended prioritised list of projects and outcomes it would like to achieve if the shortfalls in SDLAM and the Efficiency Measures programs are recovered through buybacks.
16. All Basin Governments should recommit to the socio-economic neutrality tests for the 450GL.
17. DCCEEW need to engage in genuine consultation for water policy, particularly on finalising the Basin Plan, into the future.
18. The CEWH should be acknowledged and congratulated for achieving bird and fish breeding events throughout the Basin for the past two years.
19. The CEWH should significantly increase its communications and efforts to publicise and celebrate its wins, and correctly inform the public on environmental water and its use in the system.
20. The CEWH should increase its accountability and transparency by publishing work plans and self-assessed reviews of its annual outcomes, and the IGWC should take a role in reviewing those work plans and achievement of annual performance goals.
21. The CEWH should urgently assess and publish what it would do with an additional 760GL of water if it was recovered through buybacks.
22. The CEWH and DCCEEW should continue to work with and find additional partnerships with IIOs and other stakeholders to deliver environmental outcomes.
23. The CEWH should assess and publish findings on how complementary measures and options trading schemes could be used to avoid buybacks, create flexibility and deliver environmental outcomes.
24. The CEWH and DCCEEW should assess the progress made on salinity management and whether the original Basin Plan volumes are needed given that progress.
25. MinCo and BOC should increase accountability and transparency by publishing papers and decisions in a timely manner.
26. The Basin Plan Report Card needs to more accurately reflect progress and wins.
27. All agencies commit to genuine consultation, while exploring options to joining consult to avoid fatigue and overlaps.

How well is the Plan responding to climate change and how should this be improved?

A point which is often overlooked is that climate change is already built into the Plan through the allocations process. Water is allocated to human needs (drinking and hygiene) first, then to the environment and finally to the productive sector which grows our food and fibre. Some years farmers will get no allocations and thus not be able to grow any produce that season. The addition of water markets over the top of this allocations process has meant the available water goes to highest value use. In dry years, cotton, rice and other annual crops simply aren't grown.

Going forward, thought should be given to how these allocations are managed, particularly in dry years. The current allocations process puts the majority, if not all, of the risk of addressing climate change on the productive sector – as it is often last to get any water. We do note though that there is an element of shared risk, especially at extremely dry times and in periods of very low inflows.

Human needs should always remain the highest focus, but that should be extended to include some form of food security and availability. Irrigation is responsible for the vast majority of our fruit, nuts, grapes, rice and vegetables, and large volumes of other commodities in both dry and wet years. These commodities form the largest parts of the healthy eating pyramids and guides published by governments and health practitioners. If the hotter and drier climate predictions are to materialise, governments are going to need to add some level of food production to the human needs portion of the water available in the Basin to ensure irrigators can grow the food we need to survive.

As for the remaining productive uses, in addition to this new base level for human needs, and the environmental water, irrigators should not be solely responsible for absorbing climate impacts. Environmental water and productive water will both need to shoulder the impacts, and it should be addressed in proportion. Future iterations of the Plan should take steps to allocate water perhaps on a one-for-one or two-to-one basis between the environment and productive sector to ensure outcomes for both during the dry years.

As mentioned above, NIC supports the increased funding and commitment to update the Basin science, but caution it must be open to debate, not blinked or biased, and needs to consider options above and beyond just adding water. It should be noted that the impact of the Basin Plan can be seen in the outcomes achieved during the most recent drought versus those achieved in 2006. The Plan ensured water was able to flow over the border into South Australia and connectivity was vastly better. Storages and infrastructure helped deliver these results, which is why it was built in the first place – to store water for use in the dry times.

Recommendations

28. The PC should acknowledge the allocations process means climate change is already built into the Plan.
29. The Commission should review the inclusion of some level of food availability and security into the human needs component of the allocations process, and the balance remaining irrigation and environmental water, particularly in dry years.

How well is the Plan addressing the interests of Aboriginal people?

This is a question which is best addressed by Aboriginal people directly.

NIC acknowledges the importance of water to Indigenous communities in the Murray-Darling Basin. We have supported the \$40 million fund allocated to purchasing water for First Nations and continue to encourage the Government to get that money out into communities so it can be put to use.

We have continued to support the engagement of First Nations peoples by water agencies, including MDBA and CEWH, to ensure Aboriginal knowledge and expertise is harnessed in managing rivers and water ways. It is particularly important in building and maintaining cultural sites, and we are very supportive of further involvement of Indigenous Australians in managing the Basin, including but not limited to, addressing cultural flows. NIC has always advocated for the triple bottom line objectives of the Basin Plan. While we consider First Nations peoples as key parts of our communities and productive sector, and acknowledge their roles in managing environmental water for shared benefits, we also understand and support the need for First Nations as the fourth pillar of what will become the quadruple bottom line of the Basin Plan. This is a significant addition to the triple bottom line – productive, environment and community – of the current Plan and we welcome the change.

NIC is a partner in the Economic Participation of Indigenous Communities Cooperative Research Centre (EPIC CRC) bid and will continue to work with stakeholders to get the bid up and CRC running. NIC wants to share information and knowledge, and help First Nations people grow successful food and fibre businesses within the Basin. There is an incredible untapped potential for First Foods, Indigenous owned and led agribusiness, and tourism, and we strongly encourage the Government to back this bid to help fund the research and policy work which can make these dreams a reality.

NIC does not necessarily see a need for a separate category of water entitlements for First Nations people. The current productive pool and market would be a better fit to allow water to be traded freely between all productive users. This could include, for example, First Nations owning entitlements but trading allocations on the market to generate incomes when they aren't or can't use the water, or purchase of entitlements and farms for conversions to First Foods or other productive businesses.

NIC would welcome an enhanced First Nations engagement regime to further improve our connections with Indigenous peoples across the Basin.

Recommendations

30. The Productivity Commission and all agencies should actively engage First Nations groups to assess the impact of the Basin Plan.
31. The Commission should recommend a new model for engage with First Nations to ensure increased engagement from all Basin stakeholders.

How well has community consultation and engagement been conducted? How can this be improved?

As noted above, there are a lot of agencies which have responsibilities within the Basin. There have also been countless reviews and inquiries, with further to come as part of the Basin Plan Review, the Water Act Review and this PC Inquiry. These reviews are in addition to the information and consultation sessions held on individual issues and the day-to-day engagement stakeholders and communities have with agencies and regulators. Governments need to consider consultation fatigue. It is incredibly important for communities to be consulted and that should always be a high priority for governments, but they should work more closely together to ensure information is shared and where possible consultation and engagement is done in collaboration with other agencies to save stakeholders and communities from having to constantly repeat themselves. Decision makers should also use the reports and recommendations to take action, otherwise they risk people disengaging from these processes. For example, it is unclear how many, if any, of the Productivity Commission's 2019 Basin Plan report recommendations were implemented, but here we are again putting forward submissions to a new inquiry. Perhaps the Commission could note these recommendations and actions taken since publication, in this new inquiry report.

Generally speaking, Basin agencies have been good at engaging with communities, as noted above. MDBA, CEWH and BoM, in particular, have really tried to actively engage and not just do it via Teams or Zoom, but to get out on the ground and meet with people in the Basin. DCCEEW is the one exception.

Its latest round of "consultation" on the "Strategic Purchasing Framework" was a textbook example of what not to do. Invitation only sessions, ID checks and heightened security, locked doors and ludicrously short notice periods is unacceptable and needs to be called out. Senior officials from DCCEEW at Senate Estimates tried to sheet the blame for their lack of consultation onto NIC and it was simply not believable or credible. They said NIC told DCCEEW not to consult because of the floods. That is not what was said. NIC said be careful how you consult and engage, because of the floods, as people were experiencing difficult times. The advice was meant to help them consult and consider their approach, and how to not automatically upset people and create further anxiety in communities, not to be used against us and deliberately shirk their responsibilities to consult.

The Minister and Department/Agency officials should hold town hall forums and consultation/information sessions with Basin communities to discuss policy and potential changes. This is especially the case once the Minister has reviewed the ideas submissions and decides how to finalise the Basin Plan. Decision makers need to hear how their decisions will impact all stakeholders from farmers, to schools, to hospitals, to value-add businesses, to workers and local businesses. Not only so they can make informed decisions, but also to do the right thing by communities and explain themselves. They are accountable to the people and should have the courage of their convictions to front up and work through the issues – that and it's just the right thing to do.

Recommendations

32. The Minister and agencies should commit to genuine consultation, including use of town hall forums, to hear ideas and listen to feedback to make informed decisions, and to outline and explain decisions to affected stakeholders.

What lessons should be learned from programs aimed at helping communities adjust to the Plan?

When it comes to water recovery through buybacks, the biggest mistake that could be made is to think this is solely about the one farmer or entitlement owner who is impacted. The Minister has acknowledged people are willing to sell to the Commonwealth. What has been overlooked is that the individual farmer or entitlement holder may wish to sell their water under a buybacks program for a variety of reasons from financial to environment to retirement to duress reasons, and that will vary from individual to individual. That does not mean the same will be true for their neighbours or anyone else in the system. The individual may walk away happy with their sale, but the impact will be felt beyond that individual.

There will also be significant third-party impacts. Farmer's employees may lose their jobs. Their transport and shipping company loses a client. The local café has fewer patrons. The local school has a couple less students. The town has less people, thus the local hospital gets less resources. Value-add manufacturing and processors have one less client which may impact their viability, risking closure and job losses. The other farmers on the channel have to pick up the maintenance costs, adding pressure to their finances. Other farmers left in the system will have higher water prices because the supply has gone down and there may be conveyance issues because there's less water in the system, not to mention the delivery fee and termination fees impacts for the irrigation schemes. Increased farm costs, where possible, are passed on up the supply chain adding pressure to costs of good, which eventually get passed onto consumers and puts pressure on the cost of living.

As noted above, dryland farming isn't an option for a lot of irrigated farms due to size of the farms or climatic conditions. The Government needs to consider additional support programs from relocation to training and development to farm exit packages to industry and community support which will be needed to undertake any buybacks program at scale. It must also consider food availability, security, trade and the cost of living. And, it needs to consider these programs on an ongoing basis as more farms and reliant industries could become unviable as the snowball and Swiss cheese effects take hold in communities.

Any transition and support programs need to be in place before one drop of additional water is recovered through buybacks, if the Minister chooses to go down that path against community wishes.

The Government should also engage in an active campaign to inform people about how the Basin Plan actually works and dispel myths, including how food is grown and where it is grown, and how practices have changed and celebrating progress to date.

Recommendations

33. The Government must acknowledge the impact of buybacks are felt beyond the individual who sells their water entitlements.
34. The Government must consider and make appropriate arrangements to address the flow on effects of buybacks, including transition and support programs, if it pursues this harmful form of water recovery.
35. The Government should run a public information campaign to educate the public on the Plan and progress to date, as well as changes to farming and water management practices since inception.

Does the implementation of the Plan reflect a commitment to the best available scientific knowledge? How well is this knowledge communicated? What improvements should be made?

The Plan and the management of the system are based on research and modelling from over a decade ago. It is difficult to see how the Plan and management have adapted to learnings as the Plan has been implemented.

In this submission, NIC has noted the commitment to update the Basin science and modelling, including integrating modelling and river management with the states' systems to ensure a more seamless platform, which we support. We would also like to see ongoing science and adaptation built into the Plan to ensure the best available science and research, as well as practical learnings, are reviewed and incorporated in a much more dynamic process – rather than waiting over a decade to review it and implement any necessary changes.

This applies to weather and climate modelling too. The Plan needs to be responsive to weather and climate to ensure systems are adaptable to variability – particularly management of the system in both extremes of drier and wetter.

NIC is a member of the MDBA's climate working group and is comfortable with its progress on this front. We do remain sceptical of the efforts being made to address the socio-economic sciences to evaluation the impact of the Plan and the potential future impact of an updated Plan on communities, industry and our economy. The science hasn't been well communicated to date and in fact, the Minister and other senior leaders seem to often quote scientific research from over a decade ago. The MDBA's Review Roadmap seems to address this through the Outlook and Evaluation stages of the Review and the issues papers which will be released for consultation during this process. NIC would like to see the science look at complementary measures and how they could improve environmental outcomes throughout the Basin, including the ten set out in Baumgartner et al. (2019).¹⁵

Recommendations

36. The Government should commit to ongoing science and research on the impact of the Plan and factors affecting the Plan, and ensure agencies can adaptively manage the Plan based on this updated science.

¹⁵ <https://onlinelibrary.wiley.com/doi/abs/10.1002/rra.3438>

Are there any other issues with Plan implementation that you wish to raise?

Legislative Change

There are solutions, some of which are suggested by NIC in this submission, and many more will be provided to government. However, to consider these legislative amendments are required.

Those discussed earlier include:

- Extension of the timeframes for exiting projects for SDLAM, Efficiency Measures and Constraints
- Opportunity for new ideas to be included for SDLAM projects.
- An improved delivery model for projects
- Flexibility in how the efficiency measures are achieved.

Farmers who have wetlands on their properties and who water those wetlands, should have those contributions count towards volumes under the SDLAM program.

Thought should also be given to changing the project development and delivery models to accommodate a partnership-based model to further reduce project risk.

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