Environment Victoria submission to the Productivity Commission's Five Year Assessment of the Murray-Darling Basin Plan

Environment Victoria is the state's peak non-government, not-for-profit environment organisation. Our Healthy Rivers Campaign is dedicated to working with government, communities and business for the restoration and protection of our state's great river systems. Our vision is for a future where healthy rivers sustain abundant life and prosperous communities, providing us with good food, clean water and places to love and enjoy.

We have campaigned for increased flows in northern Victoria's rivers for 15 years and have been following the development and implementation of the Murray-Darling Basin Plan since 2007. Environment Victoria holds the position that the Plan should be implemented as agreed on time and in full, with the recovery of the full volume of environmental water, that is 3,200 GL, by 2024.

However water recovery has slowed dramatically in recent years and is currently stalled at 2,106 GL, just under two thirds of the total. We are deeply concerned that without more support for real water flowing through the rivers of the Basin, nourishing rivers and floodplains and exporting salt from the system, the Plan will fail to meet its objectives both for the environment and for water-dependent communities of all types, from fish to farmers.

The fact that there is a problem of over-allocation and river degradation to be solved is in danger of being of forgotten in the rush to cut water recovery targets and 'protect' communities. In fact the best protection for communities in the long-term is a plan that meets its environmental objectives and provides long-term security for water users in a future with less water. A fully implemented Basin Plan is our best chance of achieving that.

We welcome the current assessment and the opportunity to make a submission.

Detailed comments on many of the information requests raised in the discussion paper are provided in the body of our submission, but the following dot points provide a snap-shot of key issues the Productivity Commission needs to address in its assessment:

- The protection of environmental flows is of utmost importance. There is no substitute for water actually flowing down a river. This is critical for both water quality and salt export. Downstream extraction of environmental flows is a travesty of water management, and compromises the integrity of the Basin Plan.
- Projects currently proposed for the Sustainable Diversion Limits adjustment fail key tests and should not proceed in their current form. The Water Act should be amended to include in law the tests put forward by the Wentworth Group of Concerned Scientists. Delaying implementation of the SDLs is a small price to pay for a well-designed and effective adjustment that meets its objective of 'increased environmental outcomes'.
- Infrastructure has been the preferred approach to water recovery, despite buybacks being much better value for money and more efficient. The fact that previous buyback tenders were all over-subscribed shows there is more potential water recovery that is has not yet been tapped.

- Despite significant investment in irrigation modernisation, a large percentage of irrigation channels still supply very small volumes of water. Rationalisation of these inefficient channels could deliver significant gains and result in less reliance on on-farm efficiency measures. Efficiency measures that reduce return flows should be avoided, and where that is not possible, any reduction in return flows must be accounted for and deducted from the water savings.
- Constraints in the system need to be addressed. Actual constraints, and community concern about the impacts of minor flooding events, represent a major barrier to restoring river health. There are numerous benefits from removing constraints, and ample opportunities to build community support and accelerate this work, but jurisdictions have been slow to act.
- There has been a near total failure to even try to assess socio-economic benefits of having more water in rivers. All assessments of the impact of the 450 GL of upwater focus almost exclusively on the negative impacts on irrigators but largely ignore sectors other than irrigation. Healthy rivers provide many other social and economic benefits across the Basin, particularly in the tourism industry and for recreation and well-being.
- Insufficient investment has been made into actually supporting communities in the transition to a future where there is less water for irrigation: just $100 million out of a $13 billion plan. Economic diversification will be critical to the survival of many regions within the Basin, and these efforts need to receive far more attention than they currently receive.
- There is an urgent need for a Commonwealth judicial inquiry into potential corruption within the management of the Basin Plan and into possible undue influence of vested interests on government policy and actions.

Detailed comments on information requests

Information request 2

a. risks that may prevent Basin States from successfully implementing SDL adjustment projects

The Wentworth Group of Concerned Scientists has conducted a detailed assessment of the 37 projects proposed for SDL adjustment. They developed a set of 12 conditions based on Basin Plan requirements that the projects need to meet to honour the Prime Minister's and COAG's commitments to implementing the Plan 'on time and in full'. Their assessment showed that:

> "1. Only one project, the *South Australian Murray Key Focus Area* meets the necessary conditions for approval. Approval of this project for SDL adjustment is however, contingent on upstream constraints proposals meeting targets in the Constraints Management Strategy.
>
> 2. Eleven of the projects (representing in the order of 150-270 GL water savings) require additional information before a proper assessment can be undertaken. With such information it might be possible for some or all of the projects to satisfy the 12 conditions for approval. However, all

projects would need to ensure there is no significant change in environmental flows reaching the Lower Lakes and Coorong (Condition 3).

3. Twenty five projects (representing in the order of 316-436 GL) do not satisfy these conditions and should not be approved in their current form. This includes The Living Murray works which, although they are able to be considered for an SDL adjustment, they are not likely to result in equivalent environmental outcomes because of the environmental risks identified." [1]

Many of the environmental risks identified relate to water quality and salinity impacts of works projects, some of which may require the use of environmental water to mitigate the risk of blackwater events and raised salinity as a result of the operation of the projects. Should this situation arise it would require a further adjustment of the SDL to provide more environmental water.

The Wentworth Group further concludes that many of the projects have unknown or unacceptable governance arrangements and some of the Victorian works projects do not represent value for money, being more expensive than the $1900/ML offset agreed by jurisdictions.[2]

Jurisdictions and the MDBA need to work together to ensure that all SDL offset projects meet the 12 Wentworth Group conditions before they are considered for inclusion in an SDL adjustment. One way to achieve this would be to amend the Commonwealth Water Act to include the 12 conditions for approval in legislation as part of the assessment of any proposed adjustment project.

Environment Victoria recommends the following steps are taken to ensure a successful SDL adjustment and the achievement of water recovery targets:

1. The Commonwealth withdraws the current proposed amendment to the Basin Plan prior to the Senate voting on the disallowance motion
2. The Commonwealth leads negotiations with the federal ALP and others to establish bi-partisan support for amendments to the Commonwealth Water Act 2007
3. Federal Parliament amends the Water Act to legislate more robust criteria for downwater projects, to ensure thorough assessment and compliance with all Water Act and Basin Plan requirements, using the Wentworth Group conditions as a guide
4. Basin states and the Commonwealth work together to ensure proposed downwater projects meet the new criteria and to develop constraints and upwater projects
5. The Minister tables a revised SDL adjustment amendment in federal Parliament with improved downwater projects, constraints management and additional projects to deliver the 450GL of upwater.

[1] Wentworth Group of Concerned Scientists (2017) Assessment of projects proposed for SDL adjustment.
[2] Intergovernmental Agreement on Implementing water reform in the Murray-Darling Basin

b. *the extent to which adopting a different definition of 'neutral or improved socioeconomic outcomes' for efficiency measures to what is in the Basin Plan would affect the likelihood of projects being delivered on time and on budget*

Discussion of the socio-economic impacts of efficiency measures to date has largely been in terms of negative impacts on irrigators. Little effort has been made to identify or quantify the positive social and economic impacts of more water for the environment and improved river health. For example the Victorian government report 'Social and economic impacts of the Basin Plan in Victoria' devotes over 100 pages to analysis of negative impacts on irrigators but only 10 pages to environmental outcomes.[3] These 10 pages are largely about the uncertainty of the environmental outcomes and do not ascribe any potential social (eg improved amenity, recreational opportunities and well-being) or economic (eg improved ecosystem services, increased tourism) to the environmental outcomes.

When the positive benefits of improved environmental condition are taken into account a very different picture emerges. For example, the recent Basin Plan evaluation conducted by MDBA shows that visitor numbers have risen steadily in the Basin in recent years. Tourism expenditure in 2016/17 was $7.5 billion, an increase of $1.8 billion over the last 5 years, and there are now around 31,000 tourism related businesses across the Basin.[4]

If the definition of socio-economic outcomes is to be changed from that in the Basin Plan, it must be broadened to include all the impacts of environmental water recovery through efficiency measures, positive as well as negative, and across sectors other than irrigation. Community profiles published by MDBA show that communities best able to cope with reduced water availability are those with diversified economies, and that employment growth is occurring in sectors other than agriculture.[5] Tourism is one of those growth areas and it is supported by improved environmental health. Increasing the scope of benefits of irrigation efficiency would be an enormous boost to the social acceptability of the projects, making it much easier to deliver them on time and within budget.

c. *whether there are other novel approaches to recovering water for the environment, such as purchase of entitlement options, that may contribute to Basin Plan outcomes while achieving neutral socioeconomic outcomes*

While the Productivity Commission is seeking novel approaches to water recovery, it is important not to overlook existing opportunities that are yet to be realised.

Goulburn-Murray Water (GMW) is Victoria's largest rural water corporation with 25,000 customers, over 6,500 km of irrigation channels and around 70% of Victoria's stored water under its management. It is also delivering the GM Connections Project, the largest irrigation upgrade in Australia's history, with $2billion of investment by the Commonwealth and Victorian governments.[6]

However there are serious concerns about GMW's long-term ability to deliver reliable and affordable water to its customers.[7] A recent analysis of meter usage and channel data showed that 80% of GMW's channels delivered less than 500 ML during the 2017 irrigation season, and accounted for only 18% of total deliveries. A third of these channels delivered less than 50ML. In

[3] TC&A and Frontier Economics (2017) Social and economic Impacts of the Basin Plan in Victoria
[4] MDBA (2017) Social and economic benefits of environmental watering
[5] https://www.mdba.gov.au/publications/mdba-reports/southern-basin-community-profiles
[6] GMW Annual report 2016/17
[7] https://www.premier.vic.gov.au/blueprint-for-transforming-goulburn-murray-water/

contrast, 20% of channels delivered 500 ML or more during the season. These 20% of channels accounted for more than 82% of total deliveries in 2017.[8]

The Strategic Advisory Panel that undertook the analysis notes that there is potential to reduce GMW's irrigation footprint by negotiating with landholders on underutilised channels. They also note that rationalising these channels (decommissioning or providing a lower level of service at a lower price) would not have a major impact on revenue nor would exit fees be excessive, and that there was little rationale for modernising underutilised assets.[9]

In other words the Connections Project has not yet reached its potential and there is still a genuine need and a golden opportunity to rationalise the channel system to make it viable into the future. Rationalisation would generate water savings, estimated by EY as up to 239 GL,[10] that could provide a very significant contribution to achieving the 450 GL upwater in addition to as yet unquantified social and economic benefits. It would also secure the future viability of GMW by reducing its liabilities and upkeep expenditure.

Other neglected opportunities exist. In 2009 CSIRO devised a method for determining which areas are best suited to irrigation. Its 'traffic lights' approach looked at soil, environmental and location characteristics to assign land in irrigation areas to three planning zones – green for sustainable irrigation, amber for environmental restoration including biodiversity and carbon plantings and rural amenity, and red for transition to dryland agriculture.[11] A pilot study in the Torrumbarry Irrigation Area showed that applying the approach would increase agricultural profitability by 24%, reduce the cost of running the irrigation system and return around 20% of the water used (60 GL) to the environment. In addition stopping irrigation in the red zones would reduce salinity and save about $50 million in salinity mitigation costs over the next 30 years. Rational planning provides multiple benefits. However no government has been willing to implement the system in its entirety so the benefits are yet to be realised.

In another example, Kow Swamp, a small storage in northern Victoria, was identified as a potential source of water savings back in 2007. It loses approx 35 GL per year to evaporation, about the same volume that the City of Bendigo consumes.[12] To date no serious consideration has been given as to whether these losses could be reduced and Kow Swamp returned to a more natural condition. Other similar opportunities exist across the Basin.

Information request 3

[8] Goulburn-Murray Water Review (Jan 2018) Strategic Advisory Panel.
[9] Ibid p7
[10] Ernst & Young (2018) Analysis of Efficiency Measures in the Murray-Darling Basin: Opportunities to recover 450GL in additional environmental water through efficiency measures by 2024 with neutral or positive socio-economic impacts
[11] Crossman, N, Connor, J, Bryan, B, Summers, D and J. Ginnivan (2009) *Reconfiguring an irrigation landscape to improve provision of ecosystem services*, Socio-Economics and the Environment in Discussion, CSIRO Working Paper Series 2009-07, CSIRO http://www.csiro.au/files/files/pqha.pdf
[12] https://www.theage.com.au/news/in-depth/the-turning-point/2007/02/22/1171733950536.html?page=fullpage#contentSwap2

The Commission is seeking information on actions governments should now take to achieve SDLs in the Northern Basin.

The 'toolkit' measures proposed by MDBA to improve environmental outcomes in the northern basin do not require an amendment to the Basin Plan in order to be implemented. They are subject to a separate intergovernmental agreement between NSW, Queensland and the Commonwealth and can proceed irrespective of any disallowance motion in the Senate. Environment Victoria recommends they can be implemented as soon as possible, particularly with regard to the protection of environmental flows from downstream extraction.

Flood plain harvesting is a common practice in the northern basin that currently sits outside the licencing framework. It involves the capture of floodwater as it overflows from creeks and rivers and flows across the floodplain, and its diversion into private storages for future use for irrigation. The NSW government is in the process of quantifying these flows with a view to converting currently unregulated and unmetered diversions into a new form of licence or tradeable property right. The volumes are very large, with 614 GL identified as eligible for new licenses in the Gwydir catchment and 211 GL in the Border Rivers, and far in excess of the 210GL across the entire northern basin that was used to estimate the baseline diversion limits for the Basin Plan. The process currently underway is an opportunity to recover the 70 GL required to meet the SDLs in the northern basin and remove any need for an amendment to the Basin Plan.[13] Converting a portion of the currently unlicensed floodplain flows into environmental entitlements would be cost free and have no impact on other licenced diversions.

Information request 4

a. *why progress to remove constraints has been slower than expected*

Progress has been slow for a number of reasons:

(i) Concerns about the third party impacts of constraint management have eroded support for the projects. However these concerns are often overstated. Communities remember the devastation caused by flooding in 2010 and 2012 but forget that this was caused by historically extreme rainfall. The volumes of held environmental water are small in comparison and insufficient to cause prolonged periods of severe flooding.

To take the Goulburn River as an example. The combined environmental water holdings of the CEWH and the VEWH in Lake Eildon are 352 GL (long term average yield)[14]. In the extremely unlikely case that the environmental manager decided to release all the environmental water in a single event, 352 GL would result in flows of 20,000 ML/day along the river, below the minor flood level in Shepparton[15], for a total of 17 days. This is in not the weeks or months of severe flooding feared by communities.

[13] See Inland Rivers Network submission to this inquiry for details
[14] http://www.vewh.vic.gov.au/watering-program/how-much-water-is-available
[15] MDBA (2014 Goulburn Reach Report, Constraints Management Strategy

In reality no environmental manager is going to be rash enough to release their entire holding of environmental water in a single event. Environmental watering is carefully planned[16] to create variability in the flow regime and requires approval from the water resource manager before any release takes place. In the case of the Goulburn, the water resource manager is Goulburn-Murray Water who have guaranteed that they will not release environmental water if it will have third party impacts.

(ii) There has been considerable misunderstanding about the relationship between environmental watering and blackwater events, and environmental watering has been held responsible for a number of blackwater events. This misunderstanding has eroded both community and government support for constraints management. In fact environmental water can be used to reduce the risk and severity of blackwater events, and removing constraints would reduce the risk further.

In late 2010 the millennium drought was followed by unprecedented rainfall across much of Victoria. Unseasonal spring and summer rain washed years' worth of accumulated organic matter into the river systems and resulted in a major blackwater event in the Murray-Darling Basin that extended over 2,000km and continued for several months. Widespread fish kills resulted, although species were affected to differing degrees and the magnitude of the fish kills was lower than expected given the extent and severity of the event.[17]

The severity of the 2010/11 event was caused by the unusual situation of prolonged drought followed by exceptional and repeated rainfall events. A number of other blackwater events have followed in recent years when rainfall has been above average, including a major event in the Edwards-Wakool in 2016, when dissolved oxygen levels fell below 4mg/L. While there have been suggestions in the media that this event was exacerbated by the delivery of environmental water,[18] there has been no monitoring or other scientific evidence to support this claim.

In fact the evidence points in the opposite direction and environmental water can be used to mitigate the impacts. For example, heavy rain caused floodwater with a heavy organic load from Pranjip, Castle and Seven Creeks to enter the Goulburn River on 29 December 2016. As the water turned black and some fish deaths were reported, Goulburn Broken CMA made the decision to release environmental water from the Goulburn Weir to help re-oxygenate the water and avoid a larger event. The strategy proved successful and disaster was averted.[19] Environmental water was also used in the Loddon River in 2017 to reduce the risk of a blackwater event, which did not eventuate.[20]

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[16] http://www.environment.gov.au/water/cewo/publications/managing-commonwealth-environmental-water-portfolio http://www.vewh.vic.gov.au/news-and-resources/resource-library/seasonal-watering-plan

[17] http://www.mdfrc.org.au/publications/factsheets/201313133694.asp

[18] For example http://www.riverineherald.com.au/regional/2016/10/28/58039/environmental-water-leads-to-more-kills-chair

[19] http://www.riverineherald.com.au/rural/2017/01/03/67940/blackwater-flush-kills-goulburn-river-fish

[20] http://www.vewh.vic.gov.au/rivers-and-wetlands/northern-region/loddon-river

In addition to its role in mitigating the impacts of blackwater events already in progress, environmental water can be used to reduce the risk that they will occur. Black water is caused by the build-up of organic matter on the floodplain. More frequent environmental watering can reduce the level of build-up. Water should be delivered during cool weather and before peak litter accumulation is reached. Increased flow can also be used to dilute floodplain discharge in receiving channels.[21] However constraints are obstructing the delivery of environmental water to floodplains and until these are dealt with the full benefits of environmental water as a risk management tool will not be realised.

b. the implications of this slow progress.

Governments have listened to community fears about constraints management projects and their commitment has wavered. These projects are only being pursued to the extent that they provide a potential SDL offset as part of the package of measures for consideration in the SDL adjustment. In June 2017 the Victorian government withdrew the Goulburn constraints management proposal from consideration because if did not provide a sufficient downwater component. They replaced it with the new 'Goulburn key focus area' project which is restricted to in-channel outcomes. According to the Wentworth Group it will not provide any improvement on pre-Basin Plan outcomes as flows will be restricted to the current maximum of 20,000ML/day at McCoys Bridge.[22] As a result Basin Plan objectives for the Goulburn will not be met and the contribution of the Goulburn to downstream flows will be limited. This is the direct consequence of the Victorian government's lack of commitment to constraints management

The lack of progress in managing constraints is also having an impact on the recovery of the 450 GL of upwater. If constraints are not dealt with the upwater will fail to achieve its full potential, and the slow progress on constraints is being used by opponents of upwater to undermine the case for its recovery.

The combination of constraint relaxation and an additional 450 GL upwater can substantially increase environmental benefits, with many more flow indicators being met for the River Murray (17/18 as compared to 13/18 for the upwater alone) and the potential to benefit large areas of natural wetlands and floodplains in the lower Murray.[23] Doing both together creates more than the sum of the benefits of each individual action.

Failure to manage constraints means that environmental water is unable to be delivered to crucial floodplain sites and its use is restricted to in-channel and low-lying sites. This opens up the CEWH to accusations that s/he has more water than can be delivered for environmental purposes and increase pressure to sell 'surplus' water back to irrigators. The real issue is not that the CEWH has too much water but an inability to deliver it to achieve floodplain objectives.

c. what can be done to ensure that constraints are removed in a more timely manner while managing impacts on third parties

[21] http://www.mdfrc.org.au/publications/factsheets/201313133694.asp
[22] Wentworth Group of Concerned Scientists (2017) Assessment of projects proposed for SDL adjustment.
[23] MDBA (2012) Hydrological modelling of the relaxation of constraints in the southern connected system

The many benefits of constraints management have been repeatedly underestimated and ignored. The benefits include:

- **Maximising the benefits from limited environmental water available**

It is in everyone's interest to gain the maximum benefits from water returned to the environment, to which communities and taxpayers have made a very significant contribution. Making optimal use of environmental water will reduce the need for future water recovery.

- **Resolving long standing problems of minor flooding in rural and urban areas**

Minor flooding in towns and urban areas can disrupt the use of public infrastructure such as low-lying roads, caravan parks, playgrounds and sporting facilities. Repairs and maintenance costs to local, state and federal governments have traditionally been a drain on finances and resources. Creating easements to allow environmental water delivery would also allow for the passage of minor flood events and reduce inconvenience to landholders. Making use of available constraint management funding to upgrade low lying infrastructure such as roads and bridges is an obvious benefit to communities.

- **Upgrading aging levees and flood control measures**

Many flood protection levees across northern Victoria are in disrepair and at risk of failure, with ownership and responsibility for management disputed. Clarifying the status, condition and effectiveness of current levees as part of a constraints management program opens up opportunities to resolve these issues and for strategic improvements to enhance their flood protection value.

- **Increased flood protection**

Jurisdictions are investing heavily in flood protection planning and infrastructure after the flood events of recent years. Integrating consideration of the delivery of environmental water into this process and pooling resources with constraints management would be a significant budget benefit.

- **Prevention of blackwater events** as outlined above

- **Improvement in floodplain health** brings economic and recreational benefits, such as increased tourism and fishing opportunities and improved ecosystem services.

Both proponent jurisdictions and affected communities require a change of attitude to constraints management. Acknowledging and quantifying the benefits would be a major first step in reducing community anxiety and resistance.

d. strategies that are, or could be, put in place to increase the extent to which Basin Plan objectives are met when constraints cannot be removed.

Adequate protection of environmental flows is key to the success of the Basin Plan, with or without constraints management. The Basin Plan requires 'unimplemented policy measures' such as crediting return flows for downstream use and the ability to call on held water to 'piggyback' on to

unregulated flows to achieve environmental outcomes must be in place by 30 June 2019.[24] Whether these measures will be implemented throughout NSW as required remains unclear.

If constraints cannot be removed one possible pathway to improving environmental outcomes would be to change river operating rules to prioritise environmental outcomes over irrigation water delivery. Some of these options are being explored through the 'Enhanced environmental water delivery (Hydro cues)' project being developed by NSW, Victoria and South Australia as a supply measure. This project aims to increase 'environmental water holders' ability to time releases of environmental water from dams with increases in natural flows caused by rainfall'. However the project proponents recognise that the success of such measures is dependent on the ability to manage constraints and that without constraints management benefits will be limited.[25]

Information request 5

a. *the extent to which the Australian Government's strategy to recover water in areas where gaps remain will be cost effective, align with the Basin Plan's environmental objectives, and be transparent*

The Government's 1500 GL cap on water purchases is a severe limitation on the cost effectiveness of water recovery. The Productivity Commission itself has commented many times on the cost effectiveness of water purchases as a means of water recovery, most recently in its report on National Water Reform:

> 'The purchase of water entitlements from irrigators is an equitable and efficient response to the structural change arising from the recovery of water for the environment. Sales are voluntary and the use of market mechanisms ensures a reasonably consistent treatment of irrigators and supports an efficient allocation of water resources'. [26]

The *Restoring the Balance* water purchase program has been quite transparent with readily available information on the volumes and reliability of water recovered and the average cost of the entitlements. This level of transparency is not available for SRWUIP infrastructure projects with 'commercial in confidence' often cited as the reason for not making details publicly available. The projects often take several years to plan and construct and the public has little information to go on after the initial announcement. The actual volume and reliability of the entitlements created from these projects is not known until well after the project is complete.

The Australian Government has consistently favoured infrastructure projects as a means of water recovery in recent years despite these being significantly more expensive.[27] Much of the 'low hanging fruit' has already been achieved and the cost multiplier compared to water purchase is

[24] Murray-Darling Basin Plan s 7.15
[25] Register of SDL adjustment projects https://www.mdba.gov.au/basin-plan-roll-out/sustainable-diversion-limits/sdl-adjustment-proposals-state-projects
[26] Productivity Commission (2017) Draft Report on National Water Reform p423
[27] Commonwealth of Australia (2014) Water Recovery Strategy for the Murray-Darling Basin

increasing. There are also serious doubts about the equity and benefits of on-farm water efficiency programs. The Productivity Commission recently stated:

> 'Water efficiency programs have been beneficial for irrigators but have arguably delivered less equitable outcomes than water purchases. For example, irrigators who had earlier spent their own money on improving water efficiency on their properties did not have viable water saving proposals to advance for funding. Others who had not made these investments could pursue government grant funding. The gains for some of these irrigators are expected to be significant with DAWR forecasting a 135 per cent increase in pre-tax profits for large cotton farmers in Trangie participating in the Private Irrigation Infrastructure Operators Program.'[28]

The Turnbull Government has pursued a policy of targeted water purchases in conjunction with infrastructure projects. This has led to some highly questionable purchases, such as the purchase in June 2017 of very low reliability water entitlements from Tandou station for double the market value as determined by the Government's own valuer.[29] This purchase was made to facilitate the highly controversial Menindee Lakes supply measure, for which no business case has been publically released.[30] No justification for the high purchase price has been provided and the local community remains deeply concerned about the purchase, the Menindee Lakes project and the related Broken Hill pipeline.

b. risks to achieving water recovery targets by 1 July 2019 and, where not already addressed under current arrangements, how any shortfalls may be resolved

The principle risk to achieving water recovery targets by 1 July 2019 is the assumption made by all jurisdictions that proposed changes to SDLs will be allowed by the Senate. The Australian government is relying on the proposed reduction of 605GL in water recovery to pass the Senate if it is to have any chance of meeting its 'bridging the gap to the SDLs' commitments. There has been a total failure to do any contingency planning for if the amendment is withdrawn for further consideration or disallowed, or if the supply projects turn out to be unfeasible or fail to deliver their supposed benefits. Victoria and NSW have instead threatened to walk away from the Plan if they do not get the adjustment they are seeking.

The other major risk is the lack of progress on upwater projects. If the 605 GL amendment is made, the government must find 61 GL of upwater through socially and economically neutral projects by 1 July 2019. Victoria is refusing to consider any on-farm efficiency projects to contribute to this goal[31] which makes delivery extremely unlikely.

Environment Victoria believes the proposed SDL adjustment should be withdrawn and replaced with a package of more rigorously assessed supply projects, adequate constraint measures and efficiency measures to recover the 450 GL of upwater. Delaying implementation of the SDLs is a small price to

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[28] Productivity Commission (2017) op cit
[29] https://www.theguardian.com/australia-news/2017/oct/27/government-likely-to-have-bought-ghost-water-in-78m-deal
[30] https://www.theguardian.com/environment/2018/apr/11/the-menindee-lakes-project-who-loses-and-who-really-wins
[31] https://www.premier.vic.gov.au/standing-up-for-the-basin-plan-and-victorian-communities/

pay for a well-designed and effective adjustment that meets its objective of 'increased environmental outcomes'.[32]

c. *examples of water recovery (both infrastructure projects and purchases) that have been either well implemented or had major deficiencies, including risks to securing contracted but not yet delivered water from water-saving infrastructure projects.*

The 'Restoring the Balance' buyback program has been a highly effective tool for retuning water to river systems to improve their ecological health. 1186.7 GL (65%) of the 1826.2 GL recovered to date and now in the hands of the CEWH and achieving environmental outcomes has been achieved through this program.[33] Economic analysis by the Productivity Commission[34] and others has demonstrated the cost-effectiveness of buybacks and their popularity with irrigators has been confirmed, with many participants suggesting they would repeat the process.[35] Every buyback tender in the southern Basin was oversubscribed.

This program is in strong contrast to recent Commonwealth 'targeted' purchases at Tandou and the Condamine-Balonne in Queensland,[36] where the government paid well over market value for highly unreliable water. These purchases, which were undertaken without an open tender, lack transparency, do not appear to be subject to due diligence and represent highly questionable value for money. In addition the reliability of the water is so low that is questionable when if ever it will be available for environmental use and whether it is able to be used to meet Basin Plan objectives.

Infrastructure projects both on and off-farm are also subject to difficulties and uncertainties. Off-farm projects such as the GM Connections Project require auditing before savings can be calculated and handed over to the CEWH. The most recent audit concludes that savings of 231 GL have been achieved against a target of 429 GL by 2020, suggesting that much work remains to be done for the project to deliver in full. The majority of savings to date were achieved through service point replacement and rationalisation, with a staggering 88 GL in savings attributed to meter error.[37] How much of that water is indeed a true saving is unknown as some of that water would have returned from paddocks and irrigation bays to the rivers, wetlands and aquifers.

The same issue of failing to account for return flows has been repeatedly raised in connection with on-farm efficiency projects, most recently by a group of respected scientists and economists in the Murray-Darling Declaration.[38] Efficiency measures that reduce return flows should be avoided, and where that is not possible, any reduction in return flows must be accounted for and deducted from the water savings.

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[32] Murray-Darling Basin Plan s5.06

[33] http://www.agriculture.gov.au/water/mdb/progress-recovery/registered-water-recovery

[34] Productivity Commission Research Report (2010) Market Mechanisms for Recovering Water in the Murray-Darling Basin

[35] Marsden Jacobs (2012) Survey of water entitlement sellers under the *Restoring the Balance in the Murray-Darling Basin* program

[36] https://www.theguardian.com/environment/2018/mar/21/australian-governments-water-buyback-displayed-pythonesque-haggling-skills

[37] Cardno (2017) Audit of Irrigation Modernisation Water Recovery 2016/17 Irrigation Season

[38] https://theconversation.com/the-murray-darling-basin-plan-is-not-delivering-theres-no-more-time-to-waste-91076

Information request 6

a. *what specific assistance has been provided to help communities adjust to the Basin Plan*

Commonwealth commitment to helping communities adjust has been minimal, with only $100 million allocated to economic diversification out of a $13 billion Basin Plan budget. This means that communities impacted by water reform have not received adequate assistance to adjust to a future with less water. The major tools used to support communities (water purchase and infrastructure upgrades) have only been offered to irrigators and do not necessarily benefit the broader community.

Commonwealth government spending on water reform in the Murray-Darling Basin[39]

DAWR Program	Component	Commitment ($b)	Expenditure ($b)
Sustainable Rural Water Use and Infrastructure (SRWUIP)	Infrastructure (MDB)	4.9	3.6
	Water purchase	3.1	2.7
	Supply measures	1.3	0.03
Enhanced Environmental Outcomes (Water for the Environment Special Account)	Efficiency measures	1.6	0.01
	Constraints	0.2	0.06
SA River Murray Sustainability Program		0.3	0.2
SA Riverland Floodplains Integrated infrastructure Program		0.2	0.06
MDB Regional Economic Diversification Fund		0.1	0.1
The Living Murray		0.2	0.2
Other Basin related activities	Various	1.1	1.0
TOTAL		**13.0**	**7.9**

Different communities will require different solutions and the communities themselves are best able to advise governments about that they most need as they prepare for a future with less water. Solutions for could include restructuring industries as a whole, providing specific assistance to individual businesses, assisting with the labour market, and investing in new economic opportunities. A regional development package could also include investment in other non-water infrastructure (e.g. internet, education, transport) to support new economic opportunities, decentralisation of public services, and a regional development fund from which community groups

[39] The Wentworth Group of Concerned Scientists (2017) Review of Water Reform in the Murray-Darling Basin

can bid for projects. With just $500 million, or 10% of the remaining $5.1 billion water reform budget, it is possible to implement the Basin Plan in full while delivering a regional development package to assist communities to manage the necessary transition.[40]

b. *the extent to which this assistance has supported particular industries or regions*
c. *evidence that this assistance has facilitated adjustment that would not have otherwise occurred and has contributed to meeting the intended outcome of the Basin Plan, including more resilient industries and communities with confidence in their long-term future*
d. *whether future structural adjustment assistance is warranted, and if so, what lessons can be learnt from past programs.*

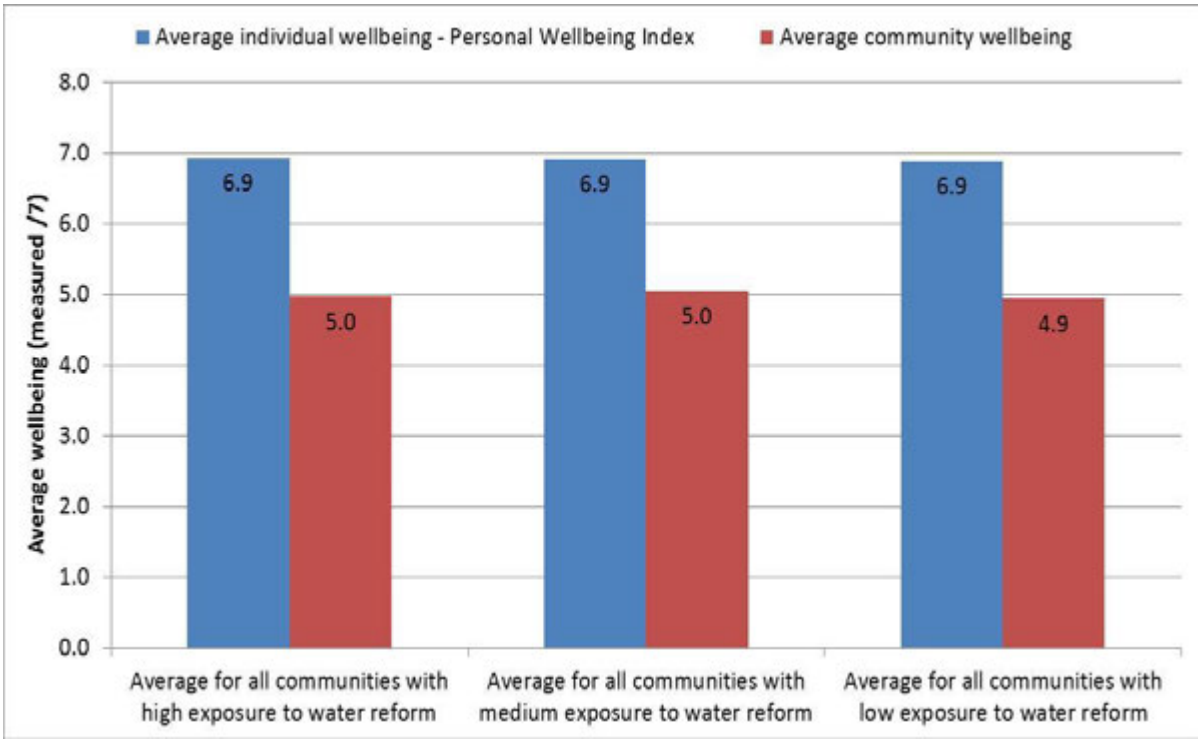
There is a lack of publically available information on how the MDB Regional Diversification Program has been used and its outcomes, so comment on these points is difficult. However the Regional Wellbeing Survey has come up with some very interesting insights.

The Regional Wellbeing Survey[41] is an annual omnibus survey of rural and regional Australians conducted by the University of Canberra. It is designed to produce data that all rural and regional communities and organisations can trust to be independent and objective and it provides a unique evidence base not available elsewhere.

The 2015 data showed that attitudes to the Basin Plan were not correlated with either individual or community wellbeing. People living in communities where there is greater concern about the Plan did not report lower than average confidence in social and economic conditions in their communities.

As shown in the graph below, the survey also demonstrated that individual wellbeing and perceptions of social and economic outcomes for communities were not associated with differing levels of water recovery. People living in communities where substantial proportions of water have been recovered were just as likely to report having confidence in their local economy and community as those in communities where little or no water recovery has occurred. This data suggests that water recovery has had little effect on social and economic wellbeing of communities relative to other factors.

[40] See Wentworth Group (op cit) for further details
[41] http://www.canberra.edu.au/research/faculty-research-centres/ceraph/regional-wellbeing/survey-results



Average individual and community wellbeing reported by residents living in communities with high, medium and low exposure to water reform in recent years. 'Regional Wellbeing Survey' analysis supplied by Dr J Schirmer, University of Canberra, Sept 2015.

Information request 7

a. *the main risks to remaining WRPs being finalised and accredited by mid-2019*

Water Resource Plans (WRPs) are a crucially important component of the Basin Plan. They are intended to reconcile state planning frameworks with the requirements of the Basin Plan in terms of SDL compliance, planning for environmental water, maintaining water quality standards, risk management etc.[42] They are essentially where 'the rubber hits the road' in terms of how the states implement the Basin Plan.

Unfortunately the state planning frameworks do not articulate well with the Basin Plan, particularly in Victoria where the Victorian Water Act and its instruments are structured in a radically different way to the Commonwealth Water Act. The draft Wimmera-Mallee Water Resource Plan published in 2017 ran to hundreds of pages and was highly complex as it attempted reconcile the two legal frameworks. This made it very difficult for the public to engage, particularly as there was not going

[42] Murray-Darling Basin Plan Ch 10

to be any obvious change to the way water was managed as a result of the WRP, and only 12 public submissions were received. [43]

Given the technical nature of the documentation, it is very difficult to make an assessment of whether what is proposed by the states actually meets Basin Plan requirements. This requires detailed knowledge of legal frameworks and current practice in all the states and is highly resource intensive. It has taken the MDBA and DELWP many months of negotiation to reach a mutual understanding of the content of the Draft Wimmera-Mallee WRP and for the MDBA to give feedback on the plan. Coupled with delay in the SDL adjustment process, which was originally intended to be completed in 2016, there is a high degree of risk that WRPs will not be accredited by 30 June 2019

b. *how, and to what extent, recent measures to make the WRP accreditation process more efficient and streamlined have sped up the preparation of WRPs and whether there are opportunities to further streamline the accreditation process for WRPs*

As draft WRPs are submitted to MDBA for assessment, the process will become easier as understanding grows and precedents are set. However there remain huge challenges in how different forms of take (floodplain harvesting, stock and domestic use, interception by plantations, regrowth after bushfires, farm dams etc) are measured and accounted for, and differing expectations between the MDBA and the jurisdictions on the content and degree of certainty in the WRPs

The preparation of WRPs has slowed in recent months due to uncertainty over the SDL adjustments and compliance issues in the north. In Victoria the process is further compromised by the upcoming state election in November 2018 with submission of further WRPs to the MDBA for assessment likely to be delayed until after it has taken place. This means that there will be a flurry of WRPs to be submitted in early 2019 with really tight timelines for assessment. Deadlines may need to be extended.

c. *other ways WRPs or associated planning processes (e.g. consultation, modelling inputs) could be changed to better meet the objectives of the Basin Plan*

d. *how effective Basin States have been in consulting with all relevant stakeholders*

As pointed out above, Victoria has received few submissions to the draft Wimmera-Mallee WRP. The reasons are likely to be the complexity of the issues and the fact that there will be little change as a result of the WRP – water recovery in the Wimmera-Mallee is complete and environmental targets set, so there are few issues of contention except future risks, recreational use and interception activities. DELWP has undertaken to work with Traditional Owner groups to work out how their concerns can be better integrated into the WRP.

The tightening timelines mean that Victoria will not be able to provide a three month public consultation period for future WRPs as they did for the Wimmera-Mallee. This is a serious concern

[43] https://engage.vic.gov.au/draft-wimmera-mallee-water-resource-plan

as the issues are complex and likely to be contentious in the Goulburn-Murray, and there will be little opportunity for stakeholders outside of the Working Group to engage.

Information request 8

a. *how environmental water planning under the Environmental Management Framework is, or is not, facilitating achievement of the Basin Plan's environmental objectives within legislated timeframes, and what improvements should be made.*

b. *how effective and efficient the delivery of environmental water is — including through coordination among owners of held environmental water, managers of planned environmental water and other stakeholders — and how any barriers could be reduced*

Delivery of environmental water has been as efficient and effective as possible given current constraints on both the volume of water available and the physical and management constraints on its delivery. The full suite of environmental objective will not be achieved until all the water is recovered and just as importantly, constraints are managed. A recent review of the CEWH found that its decision making processes are robust and its management of environmental water effective.[44]

c. *whether Australian and State Government objectives for the delivery of environmental water align, any examples of where this has not been the case, and how differences are resolved through the Environmental Management Framework*

There is not so much a clash of objectives between jurisdictions, but more competition between management objectives when the volume of environmental water is limited. For example water holders may have to decide whether to meet watering requirements for fish spawning and migration or for a particular vegetation class. The operation of the SDL adjustment mechanism exacerbates these problems as it involves comparing different types of environmental outcomes and assigning them equivalence with resultant trade-offs between different outcomes and river reaches. A supply measure may improve outcomes for a small area of floodplain vegetation but may worsen salinity outcomes in the Lower Lakes and Coorong. Work to date on the supply projects does not demonstrate how they contribute to targets for ecological recovery in the Basin-wide Environmental Watering Strategy.

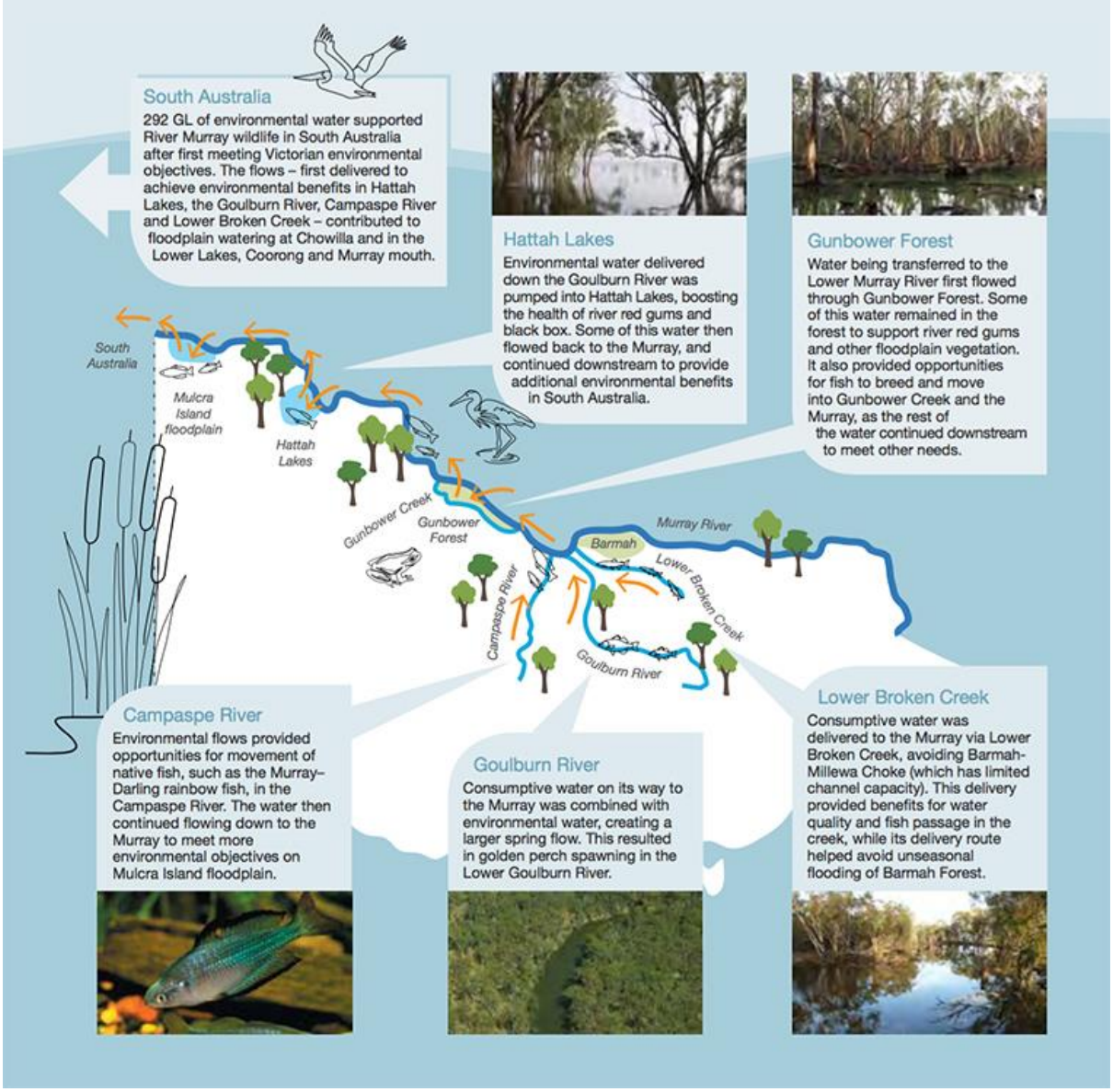
Claiming credit for environmental success is more contentious. The Victorian government is very keen to claim credit for improvements in environmental condition in its document *Victoria's Basin Plan Environmental Report Card.*[45] It outlines some significant and very welcome local improvements, but does not document how these contribute to the long-term targets of the Basin-wide Environmental Watering Strategy or provide system-wide benefits. It ascribes much of its success to complementary works and the use of environmental infrastructure to deliver water, and uses these points to justify yet-to-be approved supply projects for which business cases are not

[44] Byron, N (2017) Review of the Commonwealth Environmental Water Holder's operations and business processes
[45] DELWP (2017) Victoria's Basin Plan Environmental Report Card

publically available. While the realisation of environmental gain is really welcome, the use of these improvements to justify a particular course of action using untried and untested mechanisms is not.

d. *the extent to which the Prerequisite Policy Measures (PPMs) assumed to exist under the Basin Plan will be in place by the target date of 30 June 2019, so that the Plan's environmental objectives can be achieved under the SDLs agreed by governments, and how any identified concerns should be addressed*

PPMs are largely in place in Victoria and the VEWH has been able to demonstrate how the protection of environmental water can provide benefits at multiple sites.



Multiple uses of environmental water and return flows in Victoria[46]

However the lack of protection afforded to environmental water in NSW is an ongoing threat to the Basin Plan, which will not be successful until PPMs are fully implemented in all jurisdictions. Environment Victoria has been raising this issue with the Victorian government since September 2016, but our request for an examination of the impacts of NSW's actions on other states has not been taken up.

e. *any opportunities to better integrate environmental water planning and management with natural resource management programs and complementary works to facilitate achievement of the Basin Plan's environmental objectives.*

Complementary actions are very important in achieving Basin Plan outcomes but they are a complement to environmental water recovery, not a substitute for it. They enhance the benefits of water recovery but do not substitute for them.

An obvious example of where complementary measures would enhance the benefit of water for the environment occurs at Barmah National Park in northern Victoria. A key objective of environmental watering at this important Ramsar site is to stimulate growth of the endangered Moira grass and to regenerate the seed bank. The watering is very successful in achieving its objective but the benefit of the action cannot be realised because feral horses and pigs eat and trample the grass before it can set seed. Removing the horses and pigs from the park would mean that Basin Plan objectives could be met, but water is the essential ingredient for making the grass grow.

Information request 11

a. *risks to meeting critical human water needs (CHWN) under the Basin Plan, how the Plan addresses these risks, and what, if any, further measures are required*

Water quality and algal blooms are key threats to critical human water needs (CHWN). In April 2017, over 1000 km of the Murray from Albury to Mildura was affected by an algal bloom, at the same time as 500 km of the Darling. In 2018, residents on the lower Darling are again extremely concerned about their water quality and critical human needs, with some people having to drive long distances to even take a shower.[47] Water NSW shows a slew of algal alerts across the Basin[48] while Victoria lacks a central data base for this type of alert.

NSW must resolve extraction limits in the Barwon-Darling water sharing plan and give full effect to PPMs if this situation is to be improved. Throughout the Basin the provision of environmental water mitigates the risk of algal blooms and is a key reason why the water recovery target of 3200GL needs to be delivered in full. However the water must be of suitable quality – the introduction of nutrient rich water into the South lagoon of the Coorong under the Southeast Flows Restoration Project has

[46] VEWH (2015) *Reflections: Environmental watering in Victoria 2014-15*

[47] http://www.abc.net.au/news/2017-11-22/parents-blame-government-for-toxic-river-making-kids-sick/9181886

[48] https://www.waternsw.com.au/water-quality/algae#stay

caused unprecedented algal blooms and the death by starvation of thousands of migratory shorebirds.[49] This is wholly unacceptable.

Information request 12

a. *risks to the MDBA's ability to monitor and enforce compliance with the Basin Plan and WRPs from July 2019, and what, if any changes should be made to address these risks*

Following the ABC Four Corners program 'Pumped', which aired on 24 July 2017, there have been numerous inquiries into compliance that have made important and useful recommendations. All jurisdictions and the MDBA are intending to do better, and Victoria is proposing legislative amendments to improve its compliance regime and increase penalties for unauthorised water use.[50]

It is too early to assess the benefits of these changes as many are yet to come into force.

However there remain unresolved issues of alleged corruption and undue influence over water management in general and Basin Plan implementation in particular. Immediately after the Four Corners report, former NSW water Minister Kevin Humphries and senior bureaucrat Gavin Hanlon were referred to ICAC for investigation, the results of which are not yet known.[51] There have also been suggestions of undue irrigator influence in the development of the Barwon-Darling Water Sharing Plan in 2012 and retrospective approval of illegal floodplain harvesting works by the current NSW Water Minister.[52]

Similar allegations have been made in Queensland and criminal proceedings are underway.[53]

The South Australian Royal Commission into the Murray-Darling has wide terms or reference but nothing specific about the influence of vested interests or corruption. Only a Commonwealth judicial inquiry would have adequate powers to establish whether water sharing rules across the basin favour particular interests and the extent to which vested interests are driving government policy and action.

b. *the extent to which non-compliance with the Basin Plan will be addressed by recent changes to compliance and enforcement announced by governments*

c. *any further changes that should be introduced to increase water take compliance across the Basin.*

Environment Victoria supports the inclusion of all forms of take (including stock and domestic use, interception and flood plain harvesting) in the licencing framework in all jurisdictions to ensure

[49] http://www.abc.net.au/news/2018-04-27/coorong-murray-darling-basin-how-to-kill-a-river-system/9698108
[50] Victorian government (in prep) Water Amendment Bill 2018
[51] https://www.smh.com.au/environment/nsw-ministers-call-for-urgent-overview-of-water-issues-lame-acf-says-20170725-gxhyb4.html
[52] https://www.dailytelegraph.com.au/news/nsw/barwon-darling-water-sharing-plan-minister-niall-blairs-water-woes-continue-with-laws-to-pardon-illegal-flood-works/news-story/4a325b044f05a401bc0251f1d3f9a6dc
[53] http://hansard.parliament.vic.gov.au/isysquery/5d4e8b77-4a67-483b-b009-d2ef0986131e/1/doc/

equity between users. We also support a ‘no meter, no take’ policy for all licenced water extractions. Adoption of both these policies would make compliance much easier to enforce.

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