

Basin Plan water recovery has had socio-economic impacts on irrigators and communities in northern Victoria. Further water recovery from the consumptive pool will add to the impacts already being experienced

Frontier Economics and Tim Cummins have updated their analysis on the socio-economic impacts of Basin Plan water recovery from 2017¹.

Key Findings

The updated analysis shows that:

- previous water recovery has resulted in less irrigation (**50% less water use in the GMID**), putting the viability of major irrigation districts and the industries and communities they support under pressure
- water prices have risen significantly (**by an average of \$72 per ML**) due to water recovery from the consumptive pool, particularly in dry years
- irrigation businesses are more reliant on the allocation market and have greater exposure to high water market prices – up to **50% of GMID irrigators rely on the allocation market to meet their water needs**
- further water recovery from irrigators (buybacks and on-farm projects) will add to the impacts already being felt and **undermine the ability of irrigation communities' to plan for the future**

Socio-economic impacts of water recovery on irrigation industries and communities

Water recovery has continued to reduce water use in the Goulburn Murray Irrigation District (GMID) impacting agricultural production, in particular dairy

The 2017 analysis found water use in the GMID would have been 30% higher in the previous three years (2013-14 to 2015-16). This update shows that if water recovery had not occurred, water use in the GMID could be expected to be about 50% higher in recent years (2018-19 to 2021-22). Subsequently, GMID milk production could be expected to have been about 50% higher than observed in recent years. This foregone production would have had significant flow-on benefits in towns and communities where farm inputs are sourced and dairy manufacturing occurs.

Buybacks and on-farm water recovery have pushed up water prices and more irrigators are dependent on the water market

Evidence from a range of water market experts including ABARES² and Aither³ show that buybacks and on-farm projects that permanently take water out of the consumptive pool have put upward pressure on water prices across the Basin.

ABARES estimate water recovery to date has increased allocation prices by an average of \$72/ML in the southern MDB. This affects the large proportion of irrigators who depend on the market as a result of buybacks and on-farm programs; 54% of dairy farmers surveyed in the GMID identified that allocation trade makes up a large part of their farm water use⁴

¹ Tim Cummins & Associates and Frontier Economics 2017, Social and economic impacts of the Basin Plan in Victoria, report for Department of Environment, Land, Water and Planning, February.

² Whittle, L. Galeano, D. Hughes, N., Gupta, M., Legg, P., Westwood, T., Jackson, T. and Hatfield-Dodds, S 2020, Economic effects of water recovery in the Murray-Darling Basin, ABARES Insights, Issue 7, Canberra, September.

³ Aither 2020, Southern Murray-Darling Basin water market: Trends, drivers and implications for Victoria, Melbourne, Aither Pty Ltd.

⁴ Goulburn Broken Catchment Management Authority (GBCMA) 2021, Regional irrigated land and water use mapping in the Goulburn-Murray Irrigation District 2019/20 - Farm Irrigation Survey Technical Report.

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On-farm projects that require transfer of entitlement benefit the participant, but have adverse effects on other water users and irrigation communities

Building on the findings of analysis in 2017, and more recent reports including the 2020 Basin Plan evaluation and the Sefton review, the 2022 analysis confirms the effects of on-farm programs:

- irrigators who received an irrigation infrastructure subsidy significantly increased (21-28%) their water extraction, relative to those who did not receive any grants⁵
- increasing on-farm water demand while reducing supply via entitlement transfer increases allocation prices – likely around double the price impact of buybacks²

There is now more volatility in the total volume of allocations available for irrigation from one year to the next – increasing the risk profile for irrigators of low allocations and high water market prices

The Commonwealth Environmental Water Holder's (CEWH) portfolio is proportionally dominated (in long term equivalent terms) by Victorian high reliability entitlements (41%). NSW general security entitlements make-up the next largest portion at 28%. Because of this, the remaining consumptive pool is weighted towards less reliable NSW general security entitlements. Consequently, allocations against entitlement are now more variable year-on-year, at the Basin-scale, than in the past.

Horticulture now accounts for a greater proportion of water use – increasing dependency on intervalley trade and exacerbating the risks of drought for permanent plantings

The consumptive pool has decreased significantly, and the mix of industries has changed; horticulture, with its relatively fixed water demands now accounts for a larger proportion of the consumptive pool. In the dry conditions of 2019-20, when Victorian Murray allocations failed

to reach 100%, more than 300 GL of allocation was traded into the lower Murray from the Goulburn and interstate to support horticulture.

Analysis from Aither⁶ suggests that in the lower Murray, during periods of extreme dry (similar to 2007-08), water demand from existing perennial horticulture plantings at full maturity (1,247 GL) may exceed available water supply within the region (498 GL) by 60%.

This means that in a repeat of the Millennium Drought more high value horticulture will have to be dried off than would have been the case if the consumptive pool had not been decreased.

Significant social and economic impacts can be expected if changes are made to allow large volumes of water recovery from the consumptive pool to recover an additional 450GL for enhanced environmental outcomes

The use of buybacks to recover the additional 450 GL would require legislative change. If buybacks were used to recover the long-term annual average of 450 GL of water entitlement, and this purchase was broadly in line with the current composition of the CEWH portfolio, this would include nearly 200 GL of Victorian HRWS and would be expected to reduce annual water use in northern Victoria by 216 GL (with NSW water use reducing by 197 GL and SA by 37 GL).

This has been estimated to result in a **reduction in irrigation area of more than 50,000 ha in northern Victoria** (and a total of nearly 95,000 ha across the southern MDB). In a repeat of the Millennium Drought this would effectively **dry off an additional 12,400 hectares of high-value horticulture**.

The consequent economic impact would be expected to be in the excess of **\$500 million annually** in terms of the gross value of foregone irrigated production across the southern MDB.

Northern Victorian gross value of agricultural production would be expected to **decline around**

⁵ Wheeler, S. A., Carmody, E., Grafton, R. Q., Kingsford, R. T. and Zuo, A. 2020, 'The rebound effect on water extraction from subsidising irrigation infrastructure in Australia', Resources, Conservation, and Recycling, vol. 159, no. 104775.

⁶ Aither 2020, Southern Murray-Darling Basin water market: Trends, drivers and implications for Victoria, Melbourne, Aither Pty Ltd

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\$270m annually, with agricultural employment contracting by approximately 900 farm jobs.

In addition to this, there would be associated job losses in up- and down-stream industries, as well as in irrigation-dependent communities. For example, in the dairy industry, reduced milk supply has resulted in dairy processing factory closures (such as Rochester and Leitchville).

MDBA's community profiles from 2018⁷ show that northern Victorian communities are already dealing with **irrigation job losses of over 40%**.

It is unclear how much additional water recovered under the 450 GL could be used for environmental watering given the constraints to water delivery that currently exist in the system.

Buying back water entitlements to recover any shortfall in achieving the 2,750 GL target would involve significant socio-economic impacts

Current estimates indicate that up to 94% of the 2,750 GL target could be achieved (leaving a shortfall of 160.3 GL). However, if various identified risks cannot be managed, the shortfall in the 'Bridging the Gap' requirement at 30 June 2024 may be significantly larger — up to 372.3 GL.

Assuming a portfolio mix similar to what the CEWH currently holds, the economic impact of buying back 372.3 GL would be in the order of **\$400 million annually** across the southern MDB. In a repeat of the Millennium Drought, buying back 372.3 GL would effectively **dry off an additional 8,700 hectares of high-value horticulture**.

If buybacks were used to recover a 'Bridging the Gap' shortfall of 372.3 GL **and** an additional 450 GL of water for the environment, in line with the CEWH's existing portfolio, the gross value of irrigated production lost across the southern MDB would be in excess of **\$900m annually**. Removing this water from the consumptive pool would effectively **dry off an additional 21,100 hectares of high-value horticulture** in a repeat of the Millennium Drought.

Table 1: Potential impact of further buybacks

Recovery scenario	Plantings at risk in sMDB ^a	Value of agriculture lost in the sMDB
372.3 GL ^b	8,700 ha	\$400 m/yr
450 GL	12,400 ha	\$500 m/yr
372.3 + 450 GL	21,100 ha	\$900 m/yr

^a Based on shortfall of allocation required for existing mature plantings in a repeat of 2008-09 'Millennium drought' allocations.

^b Current effective shortfall in achieving the 2,750 GL target is 372.3 GL. This will reduce as more SDLAM projects become operational.

What is the Victorian government doing to respond to this updated analysis?

This analysis strengthens the Victorian Government's existing commitment to meeting its obligations under the Basin Plan in a balanced way. Victoria's position is that:

- Recovery of the Basin Plan's 2,750 GL target is a legislated requirement and must remain the key priority for all governments.
- Any additional water recovery beyond the Basin Plan's 2,750 GL target must have neutral or improved socio-economic outcomes as required under the Basin Plan. This means they must comply with the socio-economic criteria adopted by Ministerial Council in 2018.
- Victoria will continue to support investment in off-farm water infrastructure projects, such as the LMW and GMW Water Efficiency Projects, which are recovering 17.7 GL for the environment without negatively impacting communities.
- Complementary works and measures - including the SDLAM Victorian Murray Floodplain Restoration Project - are essential to recognising the environmental outcomes of the Basin Plan. These projects must be delivered to get the most out of the water already recovered for the environment.

For details on the report visit:

<https://www.water.vic.gov.au/mdb/mdbp/social-and-economic-impacts-of-the-basin-plan-in-victoria>

⁷ MDBA 2018, Southern Basin community profiles, Murray-Darling Basin Authority, Canberra

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