

Submission on the bill that would establish a commission of inquiry, with the same powers as a royal commission, to inquire into the management of the Murray-Darling Basin water resources and related matters.

I write in support the proposed bill.

Our current approach falls short of what is required by the Water Act 2007 in terms of: i) returning "to an environmentally sustainable level of extraction"; ii) what is needed to ensure a sustainable future for Basin communities, and; iii) what could be achieved in terms of overall public benefit. There is also scientific evidence to suggest that the 2750GL water recovery target is inadequate. Indeed no river in the world is known to function with that proportion of water extracted without it having a significant impact on ecological health.

Perhaps the most significant aspect of all of this that is under 'our' oversight (and something that requires critical review) is how we go about allocating resources to fix the problem and how we account for this expenditure.

Our current approach to implement sustainable diversion limits is achieved through water recovery, whereby the Australian Government acquires water for the environment through: i) subsidies for irrigation efficiency infrastructure or ii) direct purchase of water entitlements from irrigators. This approach has two key areas worthy of critical examination:

1. In terms of it being a way to allocate resources (i.e. \$\$\$):
 - billions of dollars have been used to subsidise increases in irrigation efficiency. Most ecological economists who have examined this expenditure have stated that at best it has contributed to no benefit and, at worst, led to reduced net water availability. This is largely because the existing management approach does not account for the return flows that occur from existing practices, nor does it consider that stakeholders will increase the utilisation of water under revised water entitlements.
 - there is also a question of value for money in purchasing efficiencies: could more be achieved from this multi-billion budget through direct purchase? The peer reviewed evidence provided in papers published by Professor Quentin Grafton, John Williams, Lin Crase, and Sarah Wheeler, amongst others is "YES". The expenditure of funds for enhanced environmental outcomes has not been effective, nor does the planned expenditure represent value for money. Even under the very best case scenarios the cost of enhanced environmental outcomes through purchasing efficiencies is twice as costly as that compared to entering the market and buying from willing sellers (see Grafton and Wheeler 2018, Table 2). Moreover a large body of creditable economic evidence supports the conclusion that the net economic impact of water entitlement buybacks are mostly locally positive on balance.
2. In terms of accounting for what has been purchased: the long-term average yield of the acquired water entitlements through water recovery is counted as 100% towards achievement of the adjustment to the SDL in the current Basin Plan (Grafton and Williams 2018). Yet water entitlements are, on average, not fully utilised. For example Wheeler et al. (2014) found that between 2006–2007 and 2010–2011 irrigators in the Southern Murray-

Darling Basin used on average only 72% of the water they received. Thus, the actual net increase in stream flows is substantially less than what is accounted for by the Australian Government.

There are also a number of other issues of concern associated with management of the Basin's water resources, namely:

- There is good evidence (see Grafton and Wheeler 2018) to show we are not adequately modelling flows in the Northern Basin. The MBDA (2018) observes that when flows fall below 400-500 ML/d at Bourke, there is a divergence between the observed and Baseline model flow exceedance curves, indicating the model has difficulty predicting these flows.
- We don't know how much water is taken by floodplain harvesting. Indeed the volume of water harvested has been grossly underestimated for many years (Grafton and Williams 2018). Without knowledge about floodplain water use, including the evaporative losses from storages of harvested water, not only do the water balances of the Murray-Darling remain incomplete, but any approach to water allocation and recovery cannot be fully assessed in terms of its costs and benefits (particularly for the Northern Basin). There is a high degree of uncertainty associated with accounting for water because we currently can't describe and quantify floodplain capture, so it is very risky to adopt this process as water to obtain environmental water. Indeed you may have thought, that even if you had to do it, a way to manage the risks would be to adopt competitive and transparent processes about purchasing this type of water. Yet astonishingly the government not only continues to purchase this category of water and but has stopped using the open tender processes that it previous used (see <https://theconversation.com/australias-watergate-heres-what-taxpayers-need-to-know-about-water-buybacks-115838>).
- We are embedding mistakes based on our history. We are suggesting everything will be the same. Climate change is not considered in the determination of the SDLs because SDLs are based on the historical climate data.

In sum real environmental water recovery is not likely to be on target because current practice have distorted accounting methods around: a) return flows; b) increasing utilisation of water entitlements by stakeholders; c) what actual environmental water is recovered and how to measure d) climate change impacts over time. There are also very real questions about whether the current approach is value for money.

I would make a two final points in regard to this bill:

1. Basin communities are not realising the gains to be had by a better management approach. There is much literature that recommends there are much more beneficial ways to support local rural communities through health, education and effective structural adjustment projects than using subsidies for irrigation infrastructure and supply projects. As a member of the Basin Community, I would hope the Australian Government has a desire to ensure we take an approach that benefits all for the long term- not just a few in the short-term.
2. Given the history of controversy around current management and the scale of resources allocated to manage it appropriately, it would seem prudent- even on face value - to review what we are doing -even if it might find nothing wrong. You would think any initiative or action should do 'no harm' and be directed at the effort for which it was originally employed: i.e. improve ecological outcomes. Yet after more than five years, the River system has not benefited as it should have. The recent fish kills and the blue-

green algal blooms a few years ago along the Murray show that the system remains at the tipping point of sustainability. And yet we keep on having controversies including:

- The investigations by the NSW Independent Commission against Corruption into allegations of water theft
- Efficacy of some scientific work and hydrological modelling (concerns raised by CSIRO and Wentworth Group)
- Uncertainty around 36 of 37 projects proposed for SDL adjustment (Wentworth Group of Concerned Scientists [http:// wentworthgroup.org/wp-content/uploads/2017/11/SDL-adjustment-submission-Nov-2017-Fullsubmission.pdf](http://wentworthgroup.org/wp-content/uploads/2017/11/SDL-adjustment-submission-Nov-2017-Fullsubmission.pdf))
- The SA Royal Commission.

Literature Cited

CSIRO. 2008. Water availability in the Murray-Darling Basin. A report to the Australian Government from the CSIRO Murray-Darling Basin Sustainable Yields Project. CSIRO, Canberra, Australia, 67p.

Grafton, R.Q. and Wheeler, S. 2018. Economics of Water Recovery in the Murray-Darling Basin, Australia. Annual Review of Resource Economics. 10:1, 487-510.

Grafton, R.Q. and Williams J. 2018. Submission to the SA Royal Commission.

Murray-Darling Basin Authority. 2018. Ecological needs of low flows in the Barwon-Darling Technical Report. Murray-Darling Basin Authority, Canberra.

Wheeler, S., Zuo, A. and Bjornlund, H. 2014. Investigating the delayed on-farm consequences of selling water entitlements in the Murray-Darling Basin. Agricultural Water Management 145, 72-82.