

Irrigated agriculture in a climate change future

Australia's irrigated agricultural sector leads the world for water efficiency and adaptability.¹ Few other countries could continue to feed and clothe themselves, much less export food and fibre to the world, throughout our cycles of extreme droughts, floods, fires, and dust storms.

More than 90% of Australia's fruit, nuts and grapes; more 76% of vegetables; 100% of rice and more than 50% of dairy and sugar, came from irrigation in 2018-19, even as severe drought conditions were setting in across Australia's irrigation food bowl in the Murray-Darling Basin.

Our sector is also playing an increasingly important role working with scientists and water managers to keep rivers healthy and bring endangered species such as bitterns back from the brink through co-beneficial irrigation practices.

But irrigation farmers are on the agricultural frontline bearing the brunt of climate change. The warming drying trend of the last 20 years has highlighted to threat to our food bowls and the wellbeing of country towns relying on irrigated agriculture for jobs and economic activity.

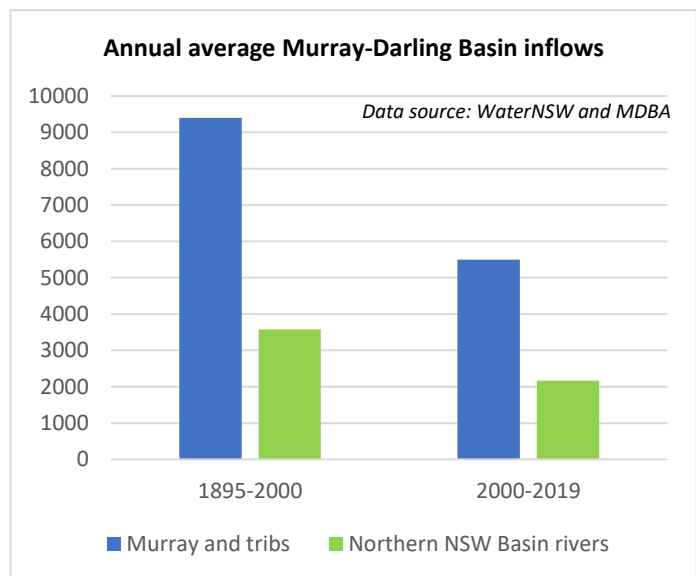
The climate change threat

The warming drying trend over the last 20 years has seen inflows into rivers across the Murray-Darling Basin almost halve.

This trend is consistent with climate change forecasts for longer, hotter droughts interspersed with more intense but relatively short-lived rainfall events.

Under the NSW Water Management Act 2000, available water is allocated in a strict hierarchy:

- Town supply
- Environment
- Stock
- Irrigators



This means, irrigators are the first to have the tap turned off when conditions turn dry. The warming drying trend means even less water is now available for irrigation after meeting other priorities first.

For example, NSW Murray General Security licence holders were allocated, on average, 81% of their licence volume before the Millennium Drought. Their licence reliability is now around 48%. In the Namoi valley in the northern Basin, General Security reliability has similarly declined from 77% to around 39%.

Reduced allocations compound the water scarcity already created when more than 20 per cent of irrigation licences were bought back under the Basin Plan. Less water in the productive pool drives up water prices on the market and reduces the capacity of farmers to make a return.

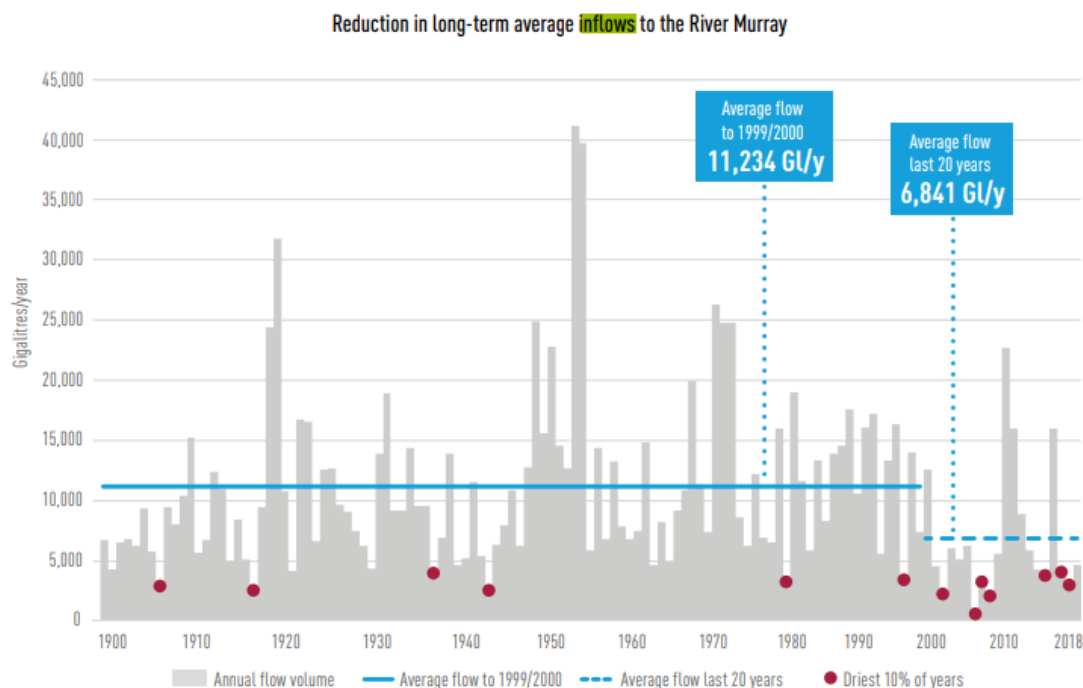
¹ For example, according to the Australian Government Department of Agriculture, Water and the Environment: "Australian cotton growers are now recognised as the most water-use efficient in the world and three times more efficient than the global average". See: <https://www.agriculture.gov.au/ag-farm-food/crops/cotton>
"The Australian rice industry leads the world in water use efficiency. From paddock to plate, Australian grown rice uses 50% less water than the global average". See: <https://www.agriculture.gov.au/ag-farm-food/crops/rice>

Irrigators are not compensated for the loss of water from climate change. Under Water Act 2007, Sch 3A, irrigators bear the full risk of any reductions or less reliable water allocations as a result of “seasonal or long-term changes in climate” and “periodic natural events such as bushfire and drought”.

Declining licence reliability also means less water for the environment

Declining licence reliability is not just a problem for irrigators. The environment now owns about 28% of all water licences in the southern Basin, to help boost existing river flows. These licences retain the same characteristics as if still owned by irrigators. If irrigators are allocated less, then so is the environment.

For example, the environment owns 481 billion litres, or 29%, of NSW Murray General Security licences. It can expect to get, on average, 48% of 481 billion litres a year, compared with the historical 81%.



Climate change mitigation

The NSWIC last November voted to create a dedicated Climate Change Policy Portfolio. Irrigators are on the frontline in experiencing the adverse impacts of climate change, and the Council is proud to be moving to the frontline in advocating for practical, sensible policy responses to support our sector. This includes economy-wide targets to reduce greenhouse emissions cost-effectively and efficiently.

Adaptive management

Climate change is used to justify changing water sharing arrangements at national, Basin Plan and state levels. These changes are highly likely to overreach and tend to try to 'drought-proof' the environment at the expense of productive water users.

The blunt instrument of licence buybacks in particular is not an answer. Since irrigators' entitlements are already switched off during dry periods, purchasing licences will not deliver any more water for the environment or critical needs during those times, either. **It will only drive towns and communities out of business in wetter years for a diminishing return to the environment.**

Adaptive management is the smart answer. An example is the NSW Resumption of Flow rule introduced in July 2020 to protect first flows after an extended low flow or dry period in the Barwon-Darling system.

The rule was activated for the first time in mid-January 2021 when irrigation extraction around Bourke was suspended for 12 days until WaterNSW forecast at least 400ML/day would reach Wilcannia 600 kilometres away. In the event, more than 1000 ML/day flowed past Wilcannia from 1 – 10 February.

In practice, irrigators coming out of a three-year drought contributed a significant portion of their licensed water to replenish the Barwon-Darling River and town supplies downstream, with no compensation. Nonetheless, our sector broadly supports this and other rules to improve connectivity.