

Natural Capital Accounting in Action



Australia's water accounts inform policy to tackle impact of drought

When severe and prolonged drought hit Australia's Murray Darling Basin, the country's agricultural heartland, policymakers used economic modeling to weigh up the most efficient and cost effective policies to recover water and reduce consumption. Water supply and use tables from water accounts were central to these models. The models presented clear evidence for a water buyback policy being the best to tackle the acute water shortages and limit the economic impact and environmental damage caused by the drought. Ultimately, for political reasons a different approach was adopted.

The Murray Darling Basin is one of the most important agricultural regions in Australia and a major contributor to the national economy. When the region experienced a 13-year drought, policymakers sought solutions for reducing water usage with minimal effects on GDP and employment. The result was a program which had two main elements: a water rights buyback policy, and a scheme to improve irrigation infrastructure.

Political questions

In Australia's water markets, landowners are entitled to use a specific volume of water each year. Under the water buyback scheme,

governments are able to recover water by compensating farmers wishing to sell their water entitlements. However, lack of robust analysis of this policy led policymakers, academics, farmers and the media to question how much water could really be saved and what the effect on productivity would be. What would be the impact on the profits of farmers who, despite having benefited financially from the sale of their water entitlements, now had less water available for irrigation? The expectation was that the losses to GDP and employment would be the same as in a period of drought, when blanket cuts on water allocations are imposed.

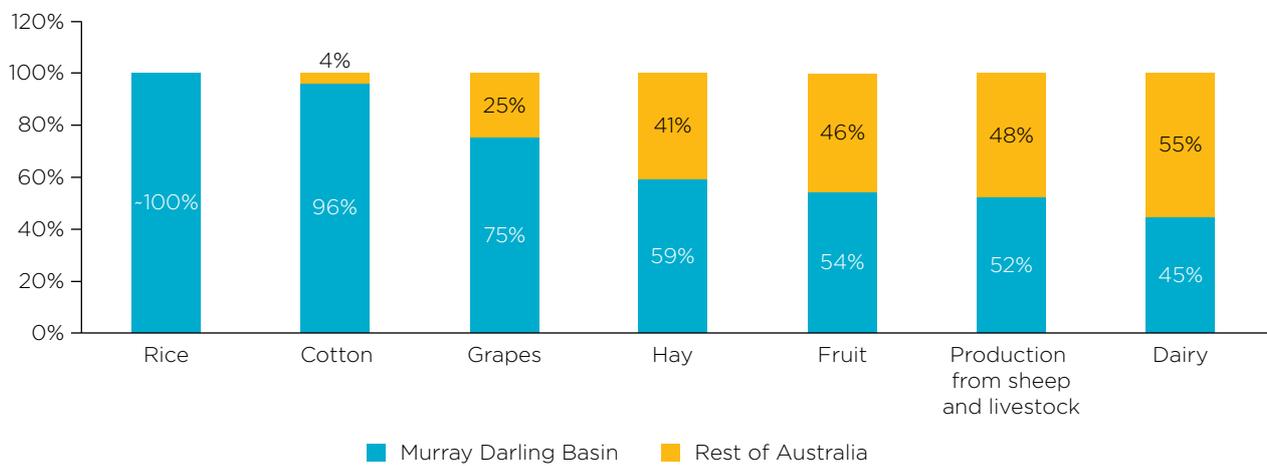
In brief

- The Murray Darling Basin is fundamental to Australia's economy, accounting for over 50 per cent of the country's irrigated produce.
- Limited information on how to minimize the impact of drought caused much political debate.
- Data from water accounts were one of the few reliable sources of information to support economic modeling to assess the proposed policies.

“By having access to the Australian Bureau of Statistics' data on water supply and use, we were able to show that the impacts of buybacks are nothing like the ones associated with droughts. The data used constructed a strong argument.”

Professor Glyn Wittwer of the Centre of Policy Studies, Victoria University





Irrigated agricultural production in the Murray Darling Basin accounts for over 50 per cent of Australia's irrigated produce. Source: MDB Authority Website.

The Murray Darling Basin Authority needed to weigh up the buyback policy against upgrades to irrigation infrastructure, a scheme that aims to recover water by reducing transmission losses. This approach was politically less contentious, but in the past had proven costly with inconsistent results.

Surprising results based on credible data

To measure the effects of the buybacks, the economic models used needed to be complemented with physical data on water supply and use. This was provided by the water accounts. Two types of water accounts are produced regularly in Australia: the Water Account Australia (WWA), composed of water supply and use tables in physical and monetary terms, and the National Water Account, which is a physical asset account.

Authorities commissioned studies incorporating data from both of these accounts. Using computable general equilibrium modeling, the studies captured patterns in water use of farmers who had been compensated for their water entitlements.

Contrary to expectations, the studies found that the scheme had limited effect on agricultural activity and jobs (regional GDP declined by 0.1 per cent; farm output by 1 per cent; jobs by 0.2 per cent). This was because farmers showed surprising flexibility in moving away from irrigated produce to dryland production and were largely able to maintain profits despite having less water available for use.

These findings confirmed that government buybacks had a positive impact on communities and, being based on robust data from water accounts, added real value to the debate. Had the accounts not been available, ad hoc data would have been compiled for the modeling, reducing the reliability and credibility of the results.

Fully informed decision making

The water accounts provided strong technical information that allowed the decision on water policy to be fully informed. However, as is often the case, social and political factors also influenced the final decision, and policymakers opted for upgrades to infrastructure as a more traditional and tangible solution to the water scarcity caused by the drought.

ABS Water Account, Australia www.abs.gov.au/AUSSTATS/abs@nsf/mf/4610.0

What is natural capital accounting?

A set of objective data showing how natural resources contribute to the economy and how the economy affects natural resources. The accounts are an extension of the System of National Accounts. Natural capital accounting integrates natural resources and economic analysis, providing a broader picture of development progress than standard measures such as GDP.



Further resources can be found at www.wavespartnership.org

Wealth Accounting and the Valuation of Ecosystem Services (WAVES) is a global partnership led by the World Bank that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts.



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