

# **Market mechanisms for recovering water in the Murray-Darling Basin**

(Notes on Productivity Commission Issues Paper)

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1. The Issues Paper is a thorough account of the tricky issues that have to be confronted in this study. In particular, close reading of the Issues Paper reveals that recovering water, or buyback, is occurring without much consideration of the use to which purchased water will be put. In addition, a substantial program of public investment in irrigation infrastructure is being developed in parallel with buyback. The objectives, content, rationale and implementation of the infrastructure program are confused. Moreover, buyback is occurring in advance of the preparation of a Basin Plan by the newly constituted Murray-Darling Basin Authority (MDBA), which, of its own account, may reduce the amount of water available to irrigators after 2011.
2. Thus, the Issues Paper, and the study, implies contemplation of several vexed questions of economic and environmental policymaking. First and foremost is the appropriate role of government? Then there is the question of which government since there is divided responsibility between tiers of government and their agencies? The Commonwealth and State Governments differ in financial capacity and, less obviously, in their technical capacity to implement environmental programs when this is warranted. As now conceived and implemented, the buyback program allows no opportunity for expression of individual, group or local preferences for environmental projects – nor financial contributions.
3. Next, the biophysical environment of the Murray-Darling Basin has multiple attributes, flow and non-flow-related. The starting point or reference case for environmental improvements is no longer an undisturbed state of nature, whatever that might have once been. There is a vast difference between the hydrology, the environment and the economic and institutional arrangements of the (unregulated) Northern Valleys and the (regulated) southern-connected Murray-Darling system. With respect to the latter, there are important differences between gravity irrigation areas and irrigation based on pumping from the Murray River, a mixture of traditional districts with shared infrastructure and private diverters. Some of the environmental changes that have occurred with extensive irrigation throughout the Murray-Darling Basin are irreversible. Finally, there is the question of sequencing?
4. The Terms of Reference for the study reflect a further dichotomy. Part of the task concerns what might be called the ‘mechanics’ of buyback, or how buyback is undertaken once the decision is taken to recover water for the environment? The other part of the exercise concerns the rationale for buyback and how buyback meshes with the rest of the convoluted agenda of today’s Australian water policy.
5. Arguably, the second part is more important (and difficult). With an active water market and hence a rich array of information about prices, the method of price discovery is less controversial. This was the position taken by ABARE in work done before the buyback program was initiated. Nor is price determination of traded water prices, for both entitlements and allocations, contentious. Early empirical work by

Henning Bjornlund using correlation analysis established that weather conditions were the major determinant of prices for annual allocations. Commodity prices, and expectations thereof, were the major determinant of the traded price of water entitlements. This was confirmed in surveys of market participants in research organised by Frontier Economics for the Rural Industries Research and Development Corporation, the National Water Commission and the (then) Murray-Darling Basin Commission (MDBC).

6. The work of Frontier Economics also revealed that there were major differences between the positive individual attitudes of irrigators to water trade and the often-negative attitudes of irrigators' organizations and local interests. This still seems to be the case. There is a queue of irrigators lining up to exit irrigation farming who are constrained by state government restrictions on trade and participation in Commonwealth buyback.
7. Though aficionados of the arcane world of water policy could be excused for wondering just what fresh information the architects of the Basin Plan being developed by the MDBA will bring to bear in their deliberations, an implication for the existing Restoring the Balance (RTB) program of water recovery might be that it will become superfluous. At least, its role will be anomalous. More water might be made available for environmental purposes in the light of the new Basin Plan. Alternatively, RTB could be thought of as a transitional measure and conciliatory gesture, reducing the amount of water available to irrigators by purchases rather than subsequent administrative changes to state water plans and the Murray-Darling Basin Cap. The RTB program is putting money into irrigation districts at a time of drought and depressed economic conditions – not that it has been demonstrated that buyback, or water policy per se, is the best way of assisting irrigation areas.
8. Obviously, the impacts on taxpayers and the potential timing of specific projects to ameliorate environmental problems will also differ according to the emphasis given to RTB and the Basin Plan. The information provided in Table 1 suggests that the intention is for RTB to continue after the Basin Plan is implemented. The Basin Plan might turn out to be not so much a plan as an idea, and not a very good idea at that.
9. The footnote at page 5 of the Issues Paper says that the final approval of the \$3.7 billion of a planned \$5.8 billion allocated to the Sustainable Rural Water Use and Infrastructure Program (SRWUIP) is “still subject to meeting due diligence requirements”. Unlike the well-rehearsed technique of cost benefit analysis long used in the evaluation of public investment, and indeed effectively pioneered in applied economics given the shoddy record of public investment in irrigation worldwide, the precise features of due diligence and, likewise, its contemporary cousins from the George Orwell school of public administration, ‘the business case’ and ‘multi-criteria analysis’, are unfathomable.
10. Apart from issues of transparency, the simultaneous conduct of RTB and SRWUIP makes it inevitable that publicly subsidised infrastructure renewal will take place in areas where water is being traded away – as indeed could be the case for a program like SRWUIP even without RTB. Prima facie, if a case exists for RTB, it should occur before SRWUIP. In any event, a long hard look is indicated for SRWUIP. The case for public provision of the essential capital equipment, off-farm and on-farm, of the irrigation industry, ostensibly part of the private economy, is tenuous. The claimed water savings from infrastructure upgrades are dubious for reasons of

hydrology and hydrogeology. So-called losses from leakage and seepage are available elsewhere in the landscape as groundwater that could be pumped, and return flows that are available to the environment, or other irrigators. Sometimes, measurement errors are called losses when their elimination, at great expense, results in reduction of water available to irrigators that could be achieved more cheaply. This is to be seduced by the mysteries of accounting, not science or economics. Seepage to saline groundwater and evaporation are uncontroversial losses that could be avoided by public or private investment in irrigation infrastructure.

11. Embarking on a program of buyback suggests an implicit decision that there is too much irrigation in Australia. But the decision has been taken without attempting a formal valuation process to assess potential environmental benefits and worthwhile projects, as difficult as that would be. More than the environmental effects of irrigation are pertinent to consideration of the community-wide impacts of irrigation, an overriding responsibility of the Productivity Commission (PC).
12. A major reason for the policy dilemmas surrounding irrigation is that irrigation was established for mainly non-economic reasons. Many irrigation areas have dismal prospects because of settlement history and the concentration of small farms. Consequently, it was always a long shot that the water reform program initiated by COAG in the mid-1990s would succeed. An example is the idea of cost recovery in water pricing. Now completely thrown out the window with recidivist programs like SRWUIP and similar state-based adventures, it was always going to be difficult for regulators to set prices to recover the costs of something that should not have been there in the first place – irrespective of controversies surrounding the treatment of sunk capital in setting prices for existing irrigation systems.
13. These observations lead to the question raised in the Issues Paper – for example at page 7 whether “using buyback mechanisms to indirectly achieve structural adjustment or other social objectives might not be the most effective or efficient approach”? While the environmental objectives of buyback need to be clarified, and selection and conduct of environmental projects more carefully considered, recent sharp falls in the prices of irrigated products like wine grapes and dairy products highlight the positive effect buyback has on the incomes of irrigators and regional income in areas now affected by the slump of the wine and dairy industries.
14. A single policy should not bear the burden of solving too many problems. But attitudes to buyback as an instrument of industry adjustment might change if the commodity downturn is protracted, as might prove to be the case in the wine industry. If this were the case, the answer to the question posed by the PC at page 15 is probably yes. Buybacks could be designed to assist with structural adjustment and, in particular, relieving an incipient problem of substantial social distress in the old pumped irrigated horticultural districts on the Murray River. Parts of these districts cause salinity damage, and might best be retired from irrigation for environmental reasons, and revegetated.
15. In the section ‘Why water is being recovered for the environment’ (page 12), the Issues Paper highlights, inter alia, the spatial dimension of environmental issues. Hence the real tension between the centralised financial capacity of the Commonwealth, as reflected in RTB, and the decentralised technical capacity of the states and local agencies to actually implement environmental actions when the effects occur, and potential remedies can be found, within state borders. Current

funding arrangements are biased towards solving environmental problems crossing state borders. The productive work on salinity of the MDBC/MDBA as a coordinating agency between the Commonwealth and states springs to mind. The MDBA has recently published a case study of water purchases to stimulate a bird-breeding event in the Narran Lakes near the border of New South Wales and Queensland demonstrating the need for local resources and cooperation. This would be of interest to the PC. In particular, it demonstrates how useful it is to have allocations as part of the portfolio of water products held for environmental purposes. [A detailed evaluation of the project was undertaken by Griffin nrm and Tim Cummins & Associates – <http://www.mdba.gov.au/files/publications/Options-for-environmental-water.pdf>]

16. The price effects of RTB – as introduced in the Issues Paper in the question at page 16 – are of interest for a couple of reasons. As a matter of straightforward microeconomics, the effects on the traded prices of entitlements will be small if the explanation posited above concerning the effects of commodity prices on traded water prices is accepted. RTB will affect the market for seasonal allocations but, as always, whether this is a good or bad thing depends on whether you are buying or selling. It is clear evidence that particular interests in irrigators' organizations are calling the shots in debates over water policy that somehow or other higher prices of allocations, or entitlements, are thought to be a bad thing.