



***RESERVE BANK FOR WATER***  
***National Water Reform, Sustainability and Micro-economic Reform***  
Environment Business Australia submission to the Council of Australian  
Governments (CoAG)  
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***Summary***

This paper has been prepared to assist CoAG in its deliberations regarding a National Water Policy. The recommendations put forward here are essentially that environmental integrity and access to timely quality and quantity water for high value agricultural usage can co-exist. We propose that the high credit rating and the financial strength of the fundamental water resource/asset base while fully protected be leveraged to achieve the creation of a national entity that would:

- Oversee a prudential framework (environmental, scientific, and economic)
- Be the intermediary between long and short term buyers and sellers, high and low quality credits in the market
- Control the overall asset base and provide the ability to strengthen the depth and liquidity of the market
- Facilitate the integration of private sector investment into infrastructure to improve environmental management and to capture water efficiency yields

This asset manager would be a bank to the water market, a Reserve Bank for Water (“RBW”).

The current national water debate revolves around two fundamental issues:

- Micro-economic reform; and
- Sustainability

Micro-economic reform has been a constant element on the economic landscape for the past two decades and has been responsible for the separation of water from land title. This separation has exposed structural deficiencies in the water management system including the over allocation of water and the differential licence and property rights systems existing between the States over which, in the interests of economic efficiency, a common water trading market needs to exist.

The negative impacts (externalities) that are not costed in to the price of water represent a significant unallocated economic drain on taxpayers, and realistic full-cost pricing needs to be introduced. Partly this can be achieved by actions of an efficient water market moving water usage from low value to high value production, and the Reserve Bank for Water will help to facilitate this.

Sustainability has emerged as an essential element underpinning policy development to protect and enhance natural resources and the economic benefits they deliver. This has coincided with the worst and hottest drought in a century resulting in sustainable water use being elevated as a significant public issue. This in turn has led to increasing public acknowledgement of the need for a re-balancing of water allocations in favour of the environment.

The current debate has focussed on environmental science, inter-governmental relationships and issues of access to timely quality and quantity access to water - versus property rights and compensation. While acknowledging the need for funding for the purchase of new environmental water the debate has had a blind spot in relation to the role that financial markets and private investment can play, and the importance of integrating these markets into a holistic sustainable solution.

Implicit in any re-balancing of water allocations is the acquisition of significantly more water for environmental use and the need for an absolute environmental entitlement to ensure sufficient water necessary to maintain river health and the viability of the commercial resource. How such environmental water is to be managed is a subject for further development, however a number of points are clear:

- There should be a separation between the environmental management and ownership or holding of environmental water;
- The value of the water to be held for the environment creates an entity of considerable financial strength and high credit quality;
- The appropriate leveraging of this financial strength could facilitate an integration between financial markets and the water market to promote investment in the infrastructure necessary for water use efficiency and to facilitate more effective water markets and instruments, as part of a broader solution integrating the environment and the economy on a sustainable basis.

Where a special purpose water owning entity was created, separate from the environmental manager, the use of its financial and credit strength to facilitate water markets and environmental outcomes through intermediation between long term and short term market participants and between high and low credit quality participants, would establish the entity as a “Reserve Bank for Water” within the water markets.

Such an entity would play a significant role in integrating the environment, water markets and the financial and investment communities, to provide environmental and economic sustainability for agricultural based communities within the Murray Darling Basin in a market-based, post micro-economic reform environment.

### ***Introduction***

This paper is written against the background of significant general concern about the state of water management in Australia, and the need for substantial reform of policy and management of water resources within the Murray-Darling Basin.

The demands of extractive users over the last century have resulted in over-allocation of water resources within the Murray-Darling Basin and the rivers no longer having sufficient water to sustain their natural health or continue as a viable resource.

Failure to rectify this situation represents the most significant threat to the future of industry and communities in the Basin, for without a healthy river system the water on which those communities and industries rely will not be available in a quantity or quality to sustain them.

The solutions to the problems, to the extent that they exist, are complex. They require the commitment of the States and the Commonwealth to deal with the issues in a positive and co-operative fashion putting aside sectional interests for the proper resolution of the problem for the Nation.

The work of The Wentworth Group of Concerned Scientists and their “Blueprint for a National Water Plan”, released 31 July, 2003, is to be commended and it is hoped the proposals detailed below will complement and support Wentworth’s Blueprint and form the basis of a revised National Water Initiative from CoAG

### ***Structural Reform***

Debate about national water reform, particularly in the Murray-Darling Basin, cannot be entered into without the initial observation that water reform must be looked at in the context of two fundamental issues: structural adjustment to micro-economic reform and market-based pricing, and a broader recognition of sustainability as an essential element underpinning the development of policy and the economy.

The micro-economic reform process involves a move from a highly protected and regulated economic environment where externalities increasingly drain both natural and financial capital, to a regulated market-based economy that has the flexibility to facilitate resource allocation that is determined by market price, rather than by government policy or administrative dictate. Water reform is at the tail end of the micro-economic reform process that has been sweeping through the Australian economy over the last two decades. That water is one of the last remaining reform agendas is not surprising, since water is at the root of the agricultural economy and the rural sector has been significantly quarantined from market forces when compared to many parts of the economy.

### ***Market based water pricing: separation of water and land title***

The fundamental water reforms of the past ten years, have been the separation of water from land title and the establishment of water trading markets. These reforms have brought some of the greatest structural changes to affect rural Australia, and have not been without pain. The resulting move of water from lower to higher value use has exposed the risk of stranded assets and stranded communities, as traditional crops and activities become uneconomic under higher water price conditions, and water is traded to new crops in new locations.

However the ability to trade and the existence of a readily discoverable water price has also brought significant benefits by identifying the opportunity cost of inefficient activities and thereby providing an incentive for more water efficient production and investment. The existence of a market also improves the quality of investment decisions by providing current price data where before there was uncertainty. The market has also provided the opportunity for more productive and efficient water users to expand investment in new activities and technology that provide greater economic security to rural communities, and allowed lower value producers to exit and realise good value for water sold. The efficiency benefits can be

measured in higher returns per megalitre used and a more robust, economically sustainable agriculture.

To date, costs and consequences of degradation of valuable natural resources have not been captured and allocated against the economic beneficiaries causing the degradation. The result is that any cost of remediation has been largely borne by the taxpayer, or that no remediation has been undertaken, and the resource continues to degrade. The development of efficient water markets provides an opportunity for these previously unallocated costs to be captured within a rising water price and more directly attributed to water users.

### ***Impact of Initial Reform***

As is often the case, the first steps of reform expose the full nature of the problem hitherto hidden by institutional rigidity. Such has been the case with water reform.

### ***Over-allocation exposed***

The move to market-based resource allocation through water markets, with separation of water rights from land, has been successful in lifting the value of the water and redirecting it to higher value uses. However, a consequence of the higher value and greater mobility provided by the markets has been to expose the level of over allocation of water resources. Previously unused or under-used licences have been 'awakened' and traded, the 'sleepers' and 'dozers', who now find their previously unused licences of significant value. The impact of the activation of these licences has been to increase demand on an already capped water supply at the expense of the existing regular users, whose allocations have been reduced to provide water for these newly activated licences.

### ***Differential Entitlement Systems- need for common property rights***

The emerging water markets have also exposed the artificial boundaries created by Federation, in the form of differential water entitlement and property rights systems as between the states. These differences work against the development of a single unified market across the Murray Darling Basin (and indeed the entire country) and promote market inefficiency and fragmentation. Fragmented and inefficient markets do not provide sufficient depth, liquidity and therefore stability of pricing to attract investment and market growth, and thereby fail to deliver the full range of benefits available with robust market structures.

A priority for CoAG must be the development of a *uniform common system* of water access entitlement/property rights across the Murray–Darling Basin to reduce impediments to a single and unified water market. The benefits to such a system are not only to the market, but also to government. A streamlined uniform system should be cheaper to administer, both for government and for the participants, due to the reduction in duplication of administrative functions.

Failure to overcome States' parochial interests and maintain separate and different entitlement and rights systems perpetuates the same impediments to trade that were bequeathed by the different State railway gauges at the time of Federation. All other significant interstate market and regulatory regimes have adopted uniform national regulations and structures – corporations law, stock markets, financial markets – water and agricultural trade is no less important and deserves the same level of attention and commitment to overcome these institutional constraints.

### ***Security for finance***

A further unforeseen impact of the separation of water and land title has been on security for financing. Previously where water and land title were merged, a mortgage over the land provided good security for financiers. However, with separation, in many cases, the preponderance of value was with the water rights and the land was of nominal value without water. In these cases a lender's security essentially evaporated, and without a mortgageable security over water the lender's risk profile and complexity of financing increased, with a corresponding impact on the cost and availability of finance to the borrower.

The development of a property right that provides a mortgageable security with a tenure sufficient to allow financing of longer term infrastructure, is necessary to ensure the availability of finance to the water based agricultural industry and avoid capital and investment constraints. The adoption of a common property standard across the states would avoid artificial credit constraints as between borrowers in different states due to differing property rights.

The problems highlighted are the result of belated change to a century of institutional inertia in the regulation of water in the Murray Darling Basin. Failure to move forward and properly address these issues that have been exposed will mean that reform has stalled and the benefits that will drive a more productive and sustainable economy will be squandered.

### ***Re-balancing Water Allocations to the Rivers***

The fundamental issue in relation to the sustainability of our river systems is the provision of more water for the rivers to return them to a healthy state. The challenge is to find mechanisms for re-balancing water allocations between the environment and consumptive use without diminishing the economic productivity of the Murray-Darling Basin. The key to this challenge is through efficient use of water; efficient and uniform water markets; uniform water allocation regulation and property rights; and, private sector investment to achieve a sustainable balance between long term efficient economic production to support rural communities, and the health of the river system for all the communities who rely on it.

The Living Murray Initiative proposes that up to 1,500 GL of water, perhaps more, be returned to the rivers to restore river health, and it has been argued that this can be achieved without diminishing farm productivity. This is based on the proposition that opportunities exist for significant water savings from greater efficiency in water use. However to achieve these efficiency savings significant investment is required in infrastructure to reduce transmission, drainage and evaporation losses, and to reduce wasteful practises such as flood irrigation. Environmental efficiencies can also be realised through improved river infrastructure, the timing of artificial flood events and greater control over flow management.

It is of course important that efficiency gains not be translated into greater take-out of water from the system as this would undermine the viability of reform and the integrity of the ecological structure that is the ultimate resource base for high value productivity.

The current proposition is that the funds for the acquisition of the additional environmental water be provided by government, for example the full sale of Telstra would provide sufficient catalytic financing. The availability of these funds for water purchases can also be leveraged to attract private sector finance to provide significant improvements to infrastructure to capture efficiency gains as well as to facilitate more efficient water markets.

In this way the objective of improving river health can be integrated with the improvement of consumptive use practices to provide a sustainable environment and regional economy.

### ***Infrastructure investment***

Traditional approaches to infrastructure project finance seek to fund capital works expenditure from cashflow generated by the use of the asset over their effective lives, thereby minimising the annual finance charges and spreading the cost equitably to all users over the life of the asset. This avoids the problem of users early in the asset life over-paying for use, while users in the later life of the asset gain a free ride.

In applying these principles to water efficiency infrastructure, the issue is how to generate cashflow from the assets to service the finance charges. Two basic models exist : –

- collecting a tolling charge from users for water delivered; or
- selling the volume of surplus water generated by the infrastructure efficiency.

Each has its problems. Taking risk on a farmer's ability to pay the toll over the long term of the financing may not be attractive to a financier due to a lack of direct access to a farmer's cashflow and the generally low credit risk of the industry. The fragmented and inefficient water markets also create difficulties for a financier in taking risk against the long term price of water to amortise financings. However, where the market was well developed, with good depth and liquidity, financiers and investors could take risk against a water price confident in the knowledge that the market would always be available to make a price for the water to be sold.

At present, apart from the problems already identified above (fragmentation, lack of a uniform property rights and allocation regime), the market suffers from the lack of a substantial credit and term intermediary, and this has been a blind spot in the predominantly scientific water debate. Such an intermediary would stand between high and low credit quality participants, and long and short term contractual parties, to facilitate trade thereby providing increased depth and liquidity to the market.

The existence of such a party would be the trigger to facilitating significant private sector capital to fund the infrastructure necessary to generate the required water efficiency saving to provide the additional water for the rivers. That the private sector has an appetite for financing public infrastructure is beyond doubt, and is evidenced by billions of dollars already invested in toll roads, electricity, gas, port, airport infrastructure and rail infrastructure.

### ***Environmental water ownership and management***

The proposal to acquire large volumes of water for environmental use brings with it a number of administrative issues which will have an important bearing on the structure and operation of the proposal. How will the water be held and managed?

The functions of water ownership and river or environmental management rely on different skill sets and objectives. Environmental management of the water is a scientific and hydrological discipline requiring a different skill set and objectives to asset management, which is essentially a financial or prudential discipline. For this reason ownership and management should be split between two separate entities with separate and specific objectives.

### ***The Asset Manager as the Reserve Bank for Water***

The environmental management would be undertaken based on best scientific knowledge, by establishing objectives and flow regimes for water use, which the environmental manager would provide to the asset manager as a water delivery schedule. The asset manager would be responsible for the financial/ prudential management of the water assets and would seek to maximise the value of the assets within prudential limits and within the flow regimes set by the environmental manager. This would allow the asset manager to trade or otherwise manage the water subject to the mandated flow regimes, and always with the ultimate objective of maintaining or improving the environmental assets for the benefit of the river.

The asset manager would be the entity charged with the role of acquiring additional environmental water. For this purpose it would be funded by Government on an agreed programme over time to achieve its required target. These acquisitions, combined with the transfer of existing environmental water allocations will give rise to a balance sheet of considerable size. If, say, the environmental allocation is 5,000GL and we apply a value of \$1,100/ ML, it represents \$5.5bn of value. As we expect water values to increase with scarcity, this value should increase over time.

### ***Balance sheet and credit quality to facilitate markets***

The size and strength of this balance sheet, combined with the position of the asset manager as the largest single participant in the broader water market, creates a unique opportunity of leverage to improve infrastructure quality and water usage efficiency across the Murray Darling Basin. The management and deployment of this balance sheet provides the ideal vehicle to intermediate between long and short term, and high and low credit quality water market participants to facilitate a deeper more liquid water market and the investment of private sector capital in large long term projects.

In these circumstances project financiers of long term infrastructure projects will be able to enter into long term contracts with the asset manager for the sale of water generated from efficiency gains from new infrastructure, secure in the ability of the manager to honour its contractual obligations over the length of the contract. Where projects may be for a term of 20 years or more, the traditional market participants would not, under the present regime, be of sufficient credit quality to allow risk to be taken against them over that term.

The high credit worthiness of the asset manager will also allow it to secure more favourable pricing in its long term contract negotiations than is available to other lower credit purchasers, and thereby ensure it maximises its opportunities to secure water from efficiency yield projects.

(These arrangements would also assist in overcoming the concern raised by Young and McColl (Robust Reform: The case for a new entitlement system for Australia), while encouraging water use efficiency. Young & McColl have argued that, perversely, water efficiency savings by irrigators may not be beneficial to environmental flow, as the savings will be used elsewhere, and inefficiently used water that had once leaked back to the river systems through ground water, will now be lost to the environment completely.)

The asset manager could also trade short term in the water market due to its price making strength. The ability to make markets also provides the ability to generate trading revenue by intermediating in the market to smooth and manage the water price within prudential limits with the objective of maintaining an orderly market for all participants.

The use of its high credit rating and the financial strength of its asset base to intermediate between the long and short term buyers and sellers, high and low quality credits in the market and the relative size of its asset base and its ability to strengthen the depth and liquidity of the market means that the asset manager is in fact a bank to the water market – a Reserve Bank for Water.

***Integration of Structural Reform and Sustainability***

The existence of such a powerful independent government participant in the market may give rise to concern in some quarters. However, where the charter of the RBW has been properly drafted and the management properly executed, it holds the potential to provide a point of integration between the environment, the agricultural economy, the water market, scientific advice, and large private sector infrastructure investment, to significantly progress the structural reform process for water.

The ability to leverage the cost of acquisition of water for environmental flow with the development of an efficient integrated water market and the facilitation of private financing for much needed water efficiency infrastructure across the Murray Darling Basin, would be a most significant achievement in providing a sustainable economic and environmental base for the communities within the Basin. It would also provide a new source of water for environmental flows, without diminishing the productivity of the Basin economy.

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