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This Droplet explores options for dealing with the question of how to address over-allocation in the Murray Darling Basin. Droplets explore ideas and propositions which, if developed further, might improve water use. Ideas are explored from a fundamental perspective. They search for the building blocks and concepts that one might consider using if one was able to start without being constrained by prior decisions.

The unmentionable option: Is there a place for an across-the-board purchase?

"Under the Plan, the Commonwealth Government will invest up to $3 billion over 10 years to address over-allocation in the MDB. Planned in conjunction with the modernisation programme, this will be achieved by providing assistance to irrigation districts to reconfigure irrigation systems and retire non-viable areas (such as those at the end of isolated channels or in salt affected areas)." A National Plan for Water Security, Jan 2007

The issue

Over 10 years, the $10 billion National Plan for Water Security proposes to use $3 billion to address over-allocation in the Murray Darling Basin and to invest $5.8 billion on "modernising irrigation in Australia." By any measure this is a lot of money and will buy a lot of water. At current market prices, $3 billion would buy around 1,500 GL of high security water or around 5,000 GL of general security water.

To put these numbers into perspective, the total cap on surface water entitlements in the Southern Connected River Murray System is 8,734 GL. Depending upon how it is measured, the intention appears to be to buy back between 15% and 30% of water entitlements in the Southern Basin. Some of the water is likely to come from connected groundwater systems but this will not change the magnitude of the proposed investment.

Another way of understanding the size of the proposed change is to look at the permanent water market. The largest amount of permanent water entitlements ever traded in one year is less than 100 GL.

Given the size of the proposed investment, what should be done first? How should the reform plan be sequenced? How should the market be used? How should irrigators be engaged in the process?

Irrigation in the 21st Century

Many of the irrigation systems present today were designed and constructed to take advantage of technologies, water delivery systems and water measurement systems from another era. The plan envisages totally different control and measurement systems.

With much less water, much less infrastructure will be necessary – especially if the system is modernised. Major changes in system configuration, in control systems and in the size and extent of distribution infrastructure can be expected. Imagine irrigation systems with fewer channels and fewer off-takes. Fully automated, total channel control systems could be the norm. Delivery charges could halve.

Sequencing the proposed reforms

With an investment of the scale proposed, there is a risk that wrong infrastructure could be modernised. Australia could end up investing in the upgrade of redundant infrastructure. Do it the wrong way around and we could end up with gold-plated irrigation systems without any water to put in them!

Somehow, some-one is going to have to work out which bits of the system can make the best use of the available water, available land and available technology. No matter how this is done, ultimately, irrigators working through the market will have their say.

Given the reality that the market ultimately will have its say, it may be more efficient to start by buying water and letting the market decide where this water should come from. Once this has been done, planning for system modernisation and reconfiguration can be undertaken with greater confidence.

The water market

The volume of entitlements involved in the Plan's proposed voluntary buy-back is at least 15 times greater than the total amount of permanent water entitlements that have ever been traded in a year.

This observation suggests that if the Commonwealth simply stood in the market and started buying water it would need to buy-up everything offered for many years. Some market engagement is possible and could be part of the mix but, if the proposed time-lines are to be honoured, most activity would need to be off-market. Otherwise, the market would be massively distorted. During periods of rapid adjustment, it is critical that the market sends clear long-term signals about future realities.

Off-market mechanisms

There are two main ways that off-market purchases can be made. The first is to run a voluntary tender process. Every irrigator would be invited to indicate how much entitlement they would be prepared to sell to the Commonwealth Operator at differing prices. This option is being widely discussed and is certainly part of the solution mix.

Voluntary tender processes rely on the willingness of people to sell. With a single large political entity involved, voluntary buy-backs involve considerable gaming. The irrigators most likely to offer to sell at an acceptable price are those most likely to exit the industry and move to another location. From a regional development perspective, many communities may prefer a process that encourages local investment. One way of retaining more of the money in a district and forcing all irrigators to consider the alternatives is to take a percentage off every water entitlement in each region. We think that it is worth seriously considering an across-the-board, pro-rata purchase of a percentage of each water entitlement in a region as a worthwhile part of the mix of strategies used to resolve over-allocation problems.

An across-the-board pro-rata purchase

There are currently around 12,000 irrigators in the Southern Connected Murray Darling System. An across-the-board pro-rata purchase would give every irrigator some money and empower them to decide whether to improve their irrigation system, buy water or invest in something else. Much of the money would be invested locally.

If $1 billion is shared equally among these 12,000 irrigators, each would receive $83,333. If $2 billion was invested in an across-the-board buyback, each would receive twice this amount with $1 billion left either for another pro-rata reduction and / or for other off-market strategies.

To avoid a sudden shock to the system and allow all to think carefully, payment could be made up-front. This could be implemented by taking the pro-rata amount of water taken off the top of every entitlement and leasing it back for two irrigation seasons at no cost. It would give each irrigator time to carefully evaluate the options, watch the market and decide on the best investment decisions to make.

If each irrigator was paid full market value, then the benefit of continued access to this water for two further seasons could be regarded as a compensation for disruption. As many would choose to buy-back water and some would choose to sell more water, all government charges associated with permanent water trades could be waived for two years. To maximise opportunities for adjustment and clearly signal a preference for extensive modernisation, part of the $3 billion could be used to pay all exit fees.

Taxation issues also need careful consideration. For some people, compulsory acquisition arrangements may be more advantageous than those that apply to the voluntary sale of an asset.

Where to from here - Getting the option mix right

The Murray Darling Basin Commission has just announced that it is prepared to buy water for the environment from willing sellers and put in place a mechanism to allow people to express an interest in doing this. As a result, we will soon know how much water is likely to be offered voluntarily and what effect this process will have on the water market.

No-one knows how much water will be made available voluntarily and how much will need to be recovered using a compulsory mechanism, but, given the size of the current market, we expect that the amount likely to be sourced voluntarily will be much less than that which the Plan proposes to acquire.

We are not suggesting that all the $3 billion should be spent in one hit via an across-the-board, pro-rata purchase with a two season lease back, but we do think that such an approach has merit and should be part of the mix of strategies used. Side by side with a standing offer to buy more water from willing sellers under the same terms and conditions, rapid progress could be made in a way that retains confidence.

Variants to consider include implementation at a slower rate and the idea that the water market could be deepened by buying back an extra 1% or each entitlement and putting this 1% back into the market so that it is deeper and starts with a significant volume of water that is available immediately for purchase.

We consider it essential that the forthcoming legislation should contain sections enabling implementation of an across-the-board pro-rata purchase. The next step is to work out how much needs to be sourced from each region.

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