
6. Market rules and trading restrictions

Key findings on market rules and trading restrictions

- Market rules are necessary because they provide clarity to market participants, reduce uncertainty and transactions costs.
- Where there are specific additional rules regarding water trade, then these should comply with the principles set out in Schedule G to the NWI Agreement. This should include whatever trading rules are set by irrigation companies, for both intra- and inter-system trade.
- The presumption should be towards opening-up trading opportunities, with restrictions imposed only where these can be justified against rigorous public-interest criteria – not the other way around.
- It is likely that some of the remaining barriers to trade are not institutional in nature, but simply due to inertia or cautiousness in State administrations which mitigate against the expansion of trading opportunities. If the parties to the Agreement comply in spirit and intent with these rules, it would go a long way towards freeing-up the market.
- Greater uniformity in documentation and timeframes for approving interstate trades would remove some necessary frictions from the market.
- Regulatory planning frameworks that provide the rules that govern trade should be completed as quickly as practicable.
- Trading rules should periodically be reviewed, to ensure they continue to meet the objectives sought of them.
- Tagging is the preferred basis framework to support interstate trade. Exchange rates will still be needed, in the short term, to facilitate interstate trade between those jurisdictions where systems do not presently support tagging, and in the longer term to address issues such as system losses in the spatial reallocation of water.
- Tagged trade would be greatly improved by allowing for the conversion of entitlement types within all jurisdictions. Such frameworks should allow for the conversion of lower to high reliability products, and vice versa. Irrespective of whether tagging is adopted, conversion factors for product conversion within systems will still be needed.
- Exit fees, as currently contemplated, likely constitute a barrier to water trade. Where exit fees are proposed to be applied, there is a need for these to be redesigned to comply with a new set of national principles.
- These principles should require that entities which propose to apply exit fees address as a first order to address the purpose of the fees - not just commence with the presumption that exit fees are necessary. Exit fees should only be applied where there is provision for regulatory oversight.
- Exit fees should not apply to the transfer of a water access entitlement, but to a decision to exit the services of the irrigation company or trust's common irrigation infrastructure.

6.1. Market rules and trading restrictions

All markets rely on rules. Rules reduce uncertainty for market participants (and reduce impacts on non-participants) and hence, lower transaction costs.

Clear trading rules encourage the emergence of market intermediaries, who can play important roles in aggregating sources of supply and demand, providing risk management services and bundling financial and physical commodity packages.

Laws governing general commercial conduct of firms and individuals, contracts and financial instruments provide much of the necessary legal framework for markets to operate. Supported by legislative frameworks which give appropriate property characteristics to water entitlements and allocations, this includes for the water market.

The key issues for water market design are where:

- there are specific and additional restrictions on water trade, designed and applied for various purposes; and
- rules vary between jurisdictions, with the potential to impede inter-jurisdictional trade by increasing transaction costs (including direct knowledge and compliance costs, the time taken to execute a trade, costs relating to uncertainty in having several 'rules makers' all within the same market, and reducing potential participation in the market).

Generally, trading restrictions should only be applied where these are the least-cost means of achieving identified public-interest outcomes. States might legitimately impose restrictions on trade which would otherwise cause increased (net) environmental harm, for instance, or which would impose other costs on third parties.

The current situation is that any rules must be consistent with the NWI, and specifically with those authorised in Schedule G to the NWI Agreement. Schedule G provides that restrictions on trade can only be used to manage:

- i) environmental impacts, including impacts on ecosystems that depend on underground water;
- ii) hydrological, water quality and hydro geological impacts;
- iii) delivery constraints;
- iv) impacts on geographical features (such as river and aquifer integrity); or

v) features of major indigenous, cultural heritage or spiritual significance.¹¹

For the effective functioning of a market rules need to be properly constructed, founded on reliable scientific and other data, and should be reviewed periodically to ensure they remain both necessary and effective.

There is also a need to ensure that, for interconnected systems across State and Territory boundaries, that rules are competitively neutral in their design and application. For instance, differences in New South Wales, South Australia and Victoria's approaches to managing salinity have the potential to bias trading outcomes across borders, as discussed above.

Compatibility of rules and other market design elements is considered further in Chapter 8.

¹¹ Refer Clause 3, *Schedule G Principles for Trading Rules, Intergovernmental Agreement on a National Water Initiative*.

6.2. Stranded assets and exit fees

Historically, irrigation companies have applied a range of restrictions that limited the volume of water that could be permanently traded out of their irrigation districts. Many of these restrictions were introduced in response to an expectation that water transfers out of these districts would 'strand' irrigation assets, increasing the costs associated with infrastructure maintenance and renewal for incumbent irrigators.

Historically, many irrigation districts introduced a volumetric limit on the volume of water that could be traded out of the district in a particular period to limit the likelihood of 'stranded assets'. The NWI has sought to reduce such restrictions on trade out of irrigation districts. Irrigation companies in the southern MDB now allow up to four per cent of the total volume of water allocated to a district to be traded permanently out in any year.

This interim threshold has been adopted by irrigation districts in New South Wales and South Australia, and will apply in Victoria from 1 July 2006. In Victoria, currently only two per cent of the total volume of water available may be traded out of the scheme in any one year. On 1 July 2006, this limit will increase to four per cent.

This interim limit of four per cent is to be reviewed by 2007. In areas outside of the southern MDB, under the NWI all restrictions on permanent trade out of irrigation districts are to be removed by 2014 at the latest.

- in irrigation districts managed by the Central Irrigation Trust, trade is not expected to be restricted by the current four per cent rule in most districts, at least given recent trading trends.
- in water districts managed by Murray Irrigation Limited, the volume of water traded in the past has been significantly less than four per cent of the total volume of water allocated to the company in any one year, and in fact net trade over the past few years has been close to zero, as trade into the irrigation area has balanced trade out.
- in Victoria, all but one of Goulburn-Murray Water's districts reached the two per cent limit in 2005-06, and trades are already 'banked-up' for 2006-07.

Coinciding with the introduction of the four per cent interim threshold, most major irrigation companies, corporations and trusts introduced exit fees on permanent trades out of their irrigation districts. In Victoria presently there is no power for rural water authorities to levy an exit fee. A number of Victorian rural water authorities are however expected to introduce fees after 1 July 2007, when the further unbundling of water access entitlements occurs.

Where they are applied, generally exit fees have been calculated with consideration to the MDBC's Principles for the Development of Access and Exit fees. These principles essentially allow for an exit fee to be calculated as the present value of future access fees that would otherwise have applied in that system, over a planning horizon and using a discount rate determined by the supplier.

Currently, exit fees levied range from around \$300/ML to \$500/ML. For example, Central Irrigation Trust in SA and Murray Irrigation in New South Wales charge \$360/ML (for a high reliability 'entitlement') and \$447/ML (for a general reliability 'entitlement', including tax), respectively.

This is little independent regulatory supervision of the fees charged. Neither State or Territory regulators, nor the Australian Competition and Consumer Commission, currently oversees exit fees. In Victoria exit fees will be regulated by the Essential Services Commission.

6.2.1. Are exit fees justifiable?

Exit fees are usually justified on the premise that remaining irrigators within the scheme should not be forced to pay higher delivery fees to cover those costs which remain in the system and which must be shared amongst a smaller customer (and volume) base.

Frequently these impacts are described as 'third party effects', in much the same way that trade causing environmental damage is reckoned to cause third party impacts. There is an important distinction, however, between trade which causes a *net increase* in costs to the community (ie, an increase in salinity) versus trade which causes a *redistribution* in fixed costs between irrigators.

There are many examples of where a change in the pattern of economic activity causes a redistribution of costs to 'third parties'. Population shifts have impacts on the distribution of local government rates and on the viability of businesses which rely on a given level of patronage to recover their fixed costs.

But only infrequently are such impacts compensated, and even less commonly would that compensation come from a 'fee' of some description on a market participant. Communities do not tax those residents whom leave the local area, even though the same concerns about sharing the fixed costs of community assets apply.

Much of the current debate about exit fees is a consequence of the confusion caused by the continued bundling of water access entitlements with access to delivery services provided by shared channels and pipelines. Where unbundling has not occurred, there is no driver to unbundle tariffs and hence charges for the recovery of fixed *infrastructure* costs are levied against the water access entitlement itself.

The tension is partly one of timing. Specifying *ex ante* the ongoing access fee responsibilities needed to support a prospective investment in irrigation assets can be seen to enhance incentives for efficient investment. This is analogous to forms of up-front developer charges which are used in many utility sectors, including in the urban water sector.

Applying *ex post* an ongoing responsibility to pay infrastructure access fees, and a requirement that water leaving an irrigation area pay an exit fee equivalent to the capitalised value of this access fees in perpetuity (or over a very long timeframe), is somewhat different.

There are no doubt examples of schemes where irrigators have co-opted the relevant service provider to undertake investments on their behalf, and where a reasonable argument might be mounted that irrigators contribute to the ongoing recovery of the costs of these investments.

However, at least some irrigation companies regard exit fees as a legitimate mechanism to insulate the company from any lost revenue that might occur from water trade. This has resulted in exit fees which are linked to asset renewal cycles or asset lives, giving a planning (and charging) horizon of up to one hundred years. Longer planning horizons, especially when coupled with low discount rates, tend to produce higher exit fees.

Exit fees calculated in this way can, in many instances, constitute a barrier to trade. This is especially so given the quantum of exit fees applied and contemplated by some of the irrigation companies. The exit fee is a substantial proportion of observed market prices, and more importantly is an even greater proportion of the likely *difference* between the market price and the seller's value from retaining the water entitlement in its present use.

There is no simple benchmark to determine whether or not an exit fee constitutes a significant barrier to trade. What is true is that, at the margin, any non-zero exit fee has the potential to constrain some trading opportunities. Every system and situation is different, and in theory any fee has the potential to discourage trade at the margin.

Consider the following example. The market price for a water access entitlement is \$1,000/ML, and an exit fee of \$250/ML applies. If the value to the seller of keeping the water access entitlement in its present occupation is equal to or greater than \$750/ML, then there is no financial incentive for trade to occur. Once other transactions costs are taken into account, including non-monetary costs such as time needed to acquire an understanding about how the market operates, then the likelihood of trade being discouraged increases.

In any situation where exit fees represent material proportion, but less than 100 per cent of the potential gain from trade, there is the potential to effectively 'lock' water into an area. Returns in other applications (outside of the irrigation area) may be higher, but the net return to the seller, after discharging the exit fee, may not be sufficient to motivate the trade. There is no single quantitative benchmark as to what proportion might be acceptable or be less likely to cause a 'significant' impact on trade.

Despite this, the offsetting benefit to irrigators remaining in these systems is probably not large:

- Assuming that fixed operating costs excluding those costs directly related to volume delivered, such as pumping costs in a piped system or bulk water supply costs) are unchanged, then an annual net four per cent reduction in water entitlements within a system would result in, all other things being equal, a 4.2 per cent increase in access charges to remaining users (ie, 100 per cent of costs recovered over 96 per cent of the prior volume base); and
- Where access charges represent, say, 80 per cent of total water charges, then the increase in total water charges would be lower still, at 3.3 per cent.

The cumulative impact of several years of increases in water delivery charges would, of course, amplify this impact. The sustained outflow of water from a particular irrigation district or area might cause an increase in charges to remaining irrigators to a level which ultimately becomes unsustainable.

There is a need, however, to consider the potential for inwards water trade. This would be influenced by factors such as changes in relative land values and the availability of surplus delivery capacity in the irrigation scheme. System costs may reduce, perhaps as higher cost delivery assets are rationalised, and this potentiality needs to be addressed in how exit fees are determined.

In those irrigation areas where permanent trade has been allowed in the past, generally the volumes of net trade (outflows less inflows) have been relatively small. This is not to suggest that net trade for all irrigation areas would be immaterial, especially as other market impediments are eased, but simply that it is not immediately obvious that opening up trade will cause an immediate and sustained reduction in the level of water access entitlements held within that scheme.

6.2.2. A way forward on access and exit fees

A practical approach would be to develop a consistent set of national principles for both access and exit fees, and to provide for some form of regulatory oversight of the application of these by irrigation companies, trusts and rural water authorities.

Such principles could build on those already developed by the MBDC, but should give greater emphasis to:

- *justification in the first instance for the imposition of an access fee and exit fee.*

The onus should be on the entity levying the fee to make the case for such charging practices, and to demonstrate that it does not result in a further institutional barrier to trade in water access entitlements. Rural water authorities in Victoria, for instance, currently do not impose exit fees, and while most have indicated an intention to do so, exit fees may not be applied in some circumstances (eg, where the future of the scheme is uncertain). An assumption that every scheme must have an exit fee, for revenue compensation purposes or otherwise, has no basis.

This justification should also demonstrate why exit fees are the preferred mechanism in the circumstances, linking back to the stated purpose of the charge.

Where concerns relate to the pace of structural adjustment or related impacts on communities dependant on irrigated agriculture, then consideration should be given to whether other support mechanisms – which do not restrict trade – are better.

There may be some schemes where there is some form of implied agreement between irrigators and the irrigation company concerning costs which have been incurred by the supplier on its customers' behalf. An argument may therefore be made that irrigators should have some continuing responsibility for recovery of these costs, even if they elect to discontinue use of the system's assets.

Where exit fees are to be applied, the supplier should be required to demonstrate how its charging practices provide an incentive for it to reconfigure its infrastructure or services.

- *allowing exit fees only where tariff unbundling has occurred, and prohibiting exit fees which apply to the water access entitlement or trade in water.*

Concerns about stranded assets are fundamentally about the recovery of infrastructure costs. By further separating the water entitlement from a delivery right, as we have suggested above, it follows that any responsibility for infrastructure costs should be attached to the delivery entitlement.

Infrastructure access fees would therefore be tied to a delivery right (where one exists or will in the future exist), or as a next-best option, to the land serviced by that infrastructure. Trade in water entitlements would be independent of either, and hence would not attract an exit fee. Exit fees should only be able to be applied where a customer elects to exit the common irrigation district infrastructure that services their property.

Delivery entitlement-holders (or land-owners) would be able to avoid paying the exit fee by selling their delivery entitlement (or land) to another party, at least in those circumstances where buyers can be found, or by continuing to pay the access charge, where this applies. This offers some scope to avoid the situation where a capitalised exit fee is paid by one party for water leaving an irrigation area, yet access fees are paid by another party for water entering a system (whether at the same time or later).

- *the categories of costs which should be permitted to be recovered through access and exit fees, and the relevant planning horizon and calculation methodology.*

The existing MDBC principles are quite broad, and offer significant discretion to irrigation companies as to the categories of costs which can be recovered through exit fees, the planning horizon and discount rate applied.

If trade is systematically out of an irrigation area then there is little economic justification for recovering capital depreciation as the question of whether the system assets would be replaced becomes relevant. The motivation for any exit fee in such systems, and especially one calculated as a perpetuity, is questionable.

The principles need to clearly articulate what cost categories may be included in an access fee, and how these might be translated into an exit fee. Bulk water fees, drainage, irrigation planning and variable costs like electricity costs for pumping should be excluded, as these obviously are unrelated to the provision of infrastructure delivery capacity.

There should also be provision for users of irrigation assets to negotiate with the irrigation company as to the ongoing arrangements for the provision of continued services, and incentives for the supplier to reconfigure its infrastructure. Users may collectively wish to negotiate an alternative level of service, or even agree on the timeframe for the termination of services in a marginal area.

Irrespective, the planning horizon used to calculate exit fees should be based on the timeframe need for planning for adjustment of services and asset reconfiguration, not the remaining technical life of existing assets. This planning horizon should be specified in the new principles, and not determined at the discretion of the supplier.

The *quid pro quo* of this approach, of course is that for new *capital* expenditures, it would be entirely reasonable that an irrigation authority require from its customers some form of undertaking to continue to pay for the costs being incurred on their behalf (eg, for channel replacement with pipelines). Again, however, this cost responsibility should not be tied to water.

Consideration could be afforded to obtaining a tax ruling from the Australian Tax Office to allow for exemption of exit fees from company taxation. Currently, irrigation corporations supplement their exit fee calculation with an amount corresponding to the 30 per cent company tax they would have to pay on receipt of the exit fee.

In those circumstances where a contractual ongoing responsibility for access charges is linked to either a delivery entitlement-holder or land-owner, then an option should be provided to discharge this responsibility through the once-off payment of an exit fee. Where a customer elects to continue to pay an ongoing access fee, then this would entitle them to ongoing access to irrigation district infrastructure servicing their property.

- *how exit fees apply where there is trade into an irrigation area.*

There is some ambiguity as to whether water which flows into an irrigation area would attract an exit fee if it were traded out at some later time (though mostly this would not be the case). There is some uncertainty also about how to deal with situations where, over time, inflows balance outflows, and levying an exit fee could result in the authority double-charging for the same service – once through an exit fee on departing irrigators, and again through an access charge levied on inbound irrigators.

Any policy on exit fees needs to address this issue, and identify how issues of fairness to the party paying the exit fee are to be handled.

- *the interaction between exit fees and current/future volumetric limits of water trade out of irrigation areas.*

The current four per cent limit on trade is really another means of seeking to limit the third party financial impacts of water trade. Some stakeholders have suggested that these trade-out limits are quite effective, as they can both allow for the trade of reasonable volumes of water while providing incentives for irrigation companies to reconfigure their schemes to most effectively service the remaining customer base.

In the Pyramid-Boort irrigation area in northern Victoria, for instance, significant volumes of water have traded out of the area, much of this from evidently less-productive areas. To help manage these impacts, the local community and Goulburn-Murray Water are presently engaged in a study to examine possible asset and service reconfiguration options.

Trade-out limits have some advantages over exit fees in that they also provide time for adjustment by the irrigation services provider, they are comparatively more simple, direct and easy to audit, and they do not impose any additional transactions costs on trade, up to the point at which the threshold cuts in. The main disadvantage is that, as an absolute barrier to trade, the trade-out thresholds give no consideration to the value of trade – beyond the four per cent limit all trade is precluded, even that which would have occurred under an exit fees arrangement.

One option for the interaction between exit fees and trade-out limits could be to disallow altogether any exit fees while the trade-out limits apply, say for a period of three years. This would result in, at worst, a 12 per cent outwards movement in water from some schemes. During this period all States could work to agree on the methodology for exit fees that might apply once trade-out limits are removed, and could finalise the unbundling of water access entitlements to ensure that any exit fees were not attached to trade in the water access entitlement itself.

Recommended actions

- A consistent methodology for calculating exit fees should be developed and implemented by way of a set of national principles which is administered and enforced by an independent regulator.

As an interim measure, all access and exit fees levied should be consistent with the principles developed by the MDBC. However, given the continued scope for variation in the methodology adopted using these principles, a revised and nationally-consistent methodology should be developed with priority.

- Exit fees should not be able to be applied to water access entitlements. Where exit fees are used, these should relate to a decision by the irrigator to exit the services provided by common irrigation company delivery assets. Thus, exit fees would apply only to delivery rights (where separable delivery rights exist), or as an interim approach to the property serviced by the irrigation companies distribution system.

In Victoria, exit fees will attach to delivery shares on the further unbundling of water access entitlements on 1 July 2007.

In all States and Territories other than Victoria, Governments should legislate and/or regulate for access and exit fees to be applied to delivery capacity rights or to land serviced by the common irrigation district infrastructure, as appropriate.

- An independent regulator should be responsible for providing transparent oversight of the pricing policies of irrigation infrastructure service providers, with an explicit mandate to monitor and provide direction for charging exit fees.

The Australian Government and the State and Territory Governments should determine the most appropriate regulator to undertake such activity. Options include the Australian Consumer and Competition Council, the relevant State regulators, or possibly some other entity.

6.3. Exchange rates and tagging

Interstate water trading initially was conceived as occurring under an 'exchange rates' arrangement. This provides that water traded from one State to another would change in form to become an entitlement in the State of destination.

During the early phase of the interstate pilot project, where trade was limited to high reliability water access entitlements, an exchange rate of 1.0 was used for trades between New South Wales, Victoria and South Australia, reflecting the relatively common characteristics of the 'high reliability' products in each State. Transfers from South Australia to either of New South Wales or Victoria attracted an exchange rate of 0.9, meaning that a transfer of 100ML from South Australia converted to 90ML in either of the two other States.

The extension of interstate trade to include lower reliability water products, and a wider geographic area, means that a more complex system of exchange rates, or some alternative framework, is needed. Exchange rates need to both account for the spatial impacts of trading, moving water between extraction locations, and the conversion of entitlements from one form (and reliability) to another.

Subsequently, some States proposed that interstate water trade be facilitated by 'tagging' entitlements to their State of origin. A New South Wales entitlement could therefore be traded to either South Australia or Victoria (or indeed to Queensland in the Border Rivers catchment), yet would continue to be administered as a New South Wales entitlement, with all of the rights, responsibilities and characteristics of the underlying New South Wales product.

New South Wales and Victoria have announced that they intend to pursue a system of tagged trade to facilitate interstate trade in the Southern MDB. The New South Wales and Queensland Governments also have agreed to pursue a tagged trade approach to manage interstate transfers in the Border Rivers Region.

New South Wales, South Australia and Victoria are currently developing the frameworks that would allow tagged trade to commence from 1 July 2007. In the interim, the South Australian and Victorian Governments have signed an Agreement allowing permanent interstate trading between the two States on an exchange rates basis.

6.3.1. Comparison of tagging and exchange rates approaches

Tagged trade

Tagging recognises the fundamental link between the bulk supply infrastructure and jurisdiction which created the entitlement and the rights and responsibilities attached to it.

The tagged entitlement would retain all of its underlying primary resource characteristics. Where an irrigator in Victoria purchases a New South Wales Murrumbidgee entitlement, then the future performance of this entitlement would be the same as for other Murrumbidgee water access entitlements, irrespective of where the final extraction location is. The future performance of the water access entitlement, in terms of reliability, announced allocations, any relevant delivery priority arrangements, ability to access carry-over, risk sharing arrangements in exceptional circumstances (eg, drought etc.), would be the same as were it to remain within the State of Origin.

Under a tagged trade framework the State of Origin would retain resource management and bulk headworks responsibilities, while the State of Destination would regulate extraction and site use approvals. This was described by the Queensland Government (2005) as follows:

If water is traded from Queensland to New South Wales, compliance and enforcement issues with regard to the authorised use of the water in New South Wales will lie with the New South Wales government. For example, should the Queensland water account run to zero, Queensland would notify New South Wales of such ... New South Wales would then take action to shut down the New South Wales associated work.

Any non-compliance with such an order would be up to New South Wales to carry out under New South Wales law. Implementation would require the development of protocols and information sharing between the water service providers and state departments so compliance staff know whether pumping is authorised, and the relocated water can be accounted for in reporting on entitlement and take.

Under a tagged trade model, a transfer from one user to another involves only one 'transaction' the trade does not involve both a change in extraction location and product characteristics - and one change to the water entitlements register. This simplicity would be a significant advantage for stakeholders such as financiers, for whom certainty of title at all points of the transaction, and over the lifecycle of the entitlement, is critical.

Responsibility for bulk water (headworks) charges would remain with the 'tagged' entitlement. In the complex, interconnected MDB, arrangements would need to be developed to account for the different charging policies in each of New South Wales, Victoria and South Australia and the underlying MDBC and River Murray Water cost sharing framework on which these charges (where applied) are based. A South Australian entitlement traded to Victoria under a tagged system should attract headworks charges as would other Victorian entitlements.

Changes to billing arrangements may also need to be made for tributary systems that are not controlled by River Murray Water, like the Murrumbidgee and Goulburn. An option here would be for the relevant headworks operator in New South Wales or Victoria to bill the retail supplier in the State of Destination, which would then pass on the headworks costs to the individual customer.

Tagging introduces some administrative complexity because of the need to establish some communications protocols between the relevant States, covering matters such as meter reading and sharing of allocation information, and because of the need for the entitlement holder to *potentially* have to deal with multiple supply authorities. Neither of these impacts, however, is likely to give rise to significant costs.

Exchange rates

An exchange rate approach seeks to convert entitlements between *systems*. In doing so, exchange rates involve an element of product conversion, as one State's entitlements may have a different level of nominal reliability than another, as well as adjustments to account for the changed location of extraction.

An entitlement traded from South Australia to Victoria under an exchange rate system, for instance, would cease to be administered as a South Australian product, and would be redefined with all of the product characteristics of a Victorian entitlement. South Australia would have no ongoing role in the administration or regulation of any aspect of this entitlement.

The primary attraction of exchange-rate based trade is its simplicity to irrigators in the destination jurisdiction:

- purchasers would not need to deal with and understand entitlements frameworks from two (or more) jurisdictions. This reduction in information costs may encourage irrigators to look outside of their home jurisdiction when purchasing water, in the knowledge that the 'product' they purchase will be essentially the same as that able to be sourced locally; and
- likewise, purchasers would need only to deal with one bulk water supply authority, as cost-sharing arrangements between jurisdictions would resolve, at that level, any changes in shared system costs.

An exchange rate system has also been suggested as requiring fewer legislative changes to support its implementation, as it would build off the foundations of the existing interstate pilot trading scheme. In a submission to the Australian Government on the NWI, the Australian Conservation Foundation expressed some reservations about tagging, suggesting that it would result in ever-increasing complexity in terms of having to track the tagged entitlement.

An exchange rates framework would however require the complete alignment of processes for water access entitlement creation and extinction, across two jurisdictions.

As an entitlement is traded from one State to another, the State of Origin needs to cancel the relevant water access entitlement and process this change on its water entitlements register. Concurrently, the State of Destination needs to initiate a process to create a new statutory entitlement in its jurisdiction, and establish the relevant details on its water entitlements register. This process has not worked well to date, with the MDBC having some difficulty in reconciling permanent trades between the States for the pilot interstate trading project, with timing differences in registration between States mainly responsible for these discrepancies.

A more significant concern with an exchange rates model is the potential for third party reliability impacts. It is very difficult to design a schedule of exchange rates which would convert one entitlement form into another, in a different system, with exactly the same performance under all system conditions. There exists at least the potential that exchange-rate trade would result in impacts to third parties, in the form of changed reliability of supply:

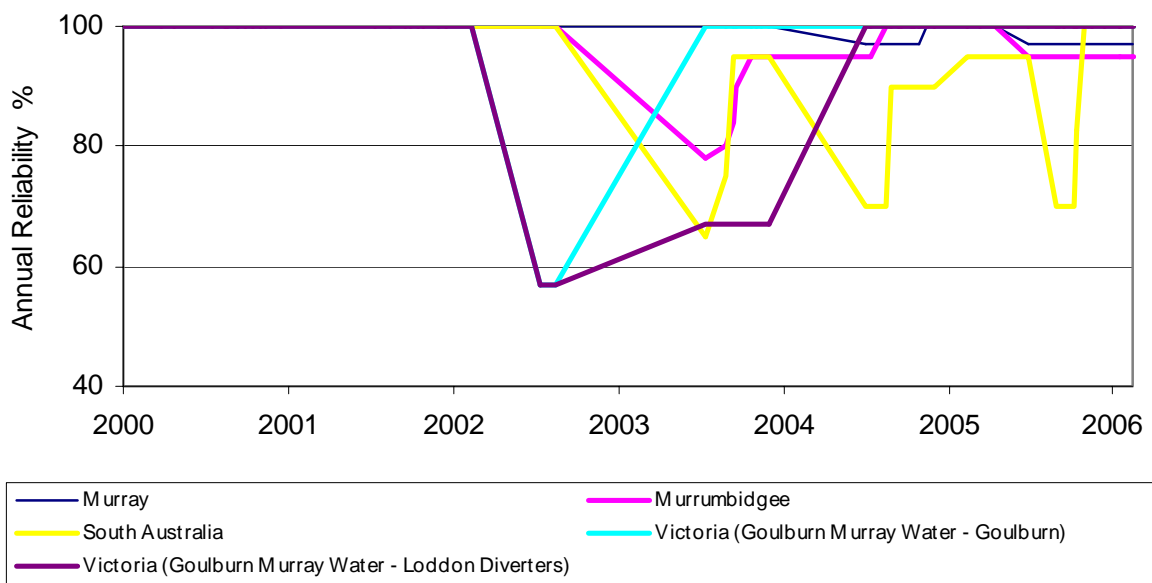
- even under 'normal' conditions, the hydrological performance of water access entitlements can vary significantly between systems, even where these systems nominally have a similar level of (average) reliability.

Consider the following illustration, where announced allocations for high reliability entitlements in the State A are currently 90 per cent. Only 9,000ML of a 10,000ML water access entitlement in that system would be available. However, downstream in State B, current year allocations for similar-reliability products are 100 per cent, reflecting the slightly better performance of the different sources which can supply this system.

If that same 10,000ML water access entitlement from State A had been exchange-rate traded to State B, then this system would now need to accommodate an increase in supply requirements of the full 10,000ML, even though within State A only 9,000ML would have been made available. This difference – a shortfall of 1,000ML - is essentially carried through a socialised reduction in reliability to all irrigators in State B (the State of Destination).

Such a scenario is far from academic. The actual reliability of individual sub-systems across the interconnected southern MDB can vary substantially in any one year (see Figure 6, below). As exchange rates need to work against average reliabilities, this impact cannot be directly addressed through the way in which exchange rates are set (except by lowering the exchange rate, which itself reduces the incentive for the seller to trade interstate).

Figure 6: Comparative performance of selected high reliability water access entitlements



- Exchange rates may also concentrate the impact of changes in the relevant water sharing plans at periodic reviews.

Consider the following illustration where a supply system in State A which has a high reliability entitlement base of 100,000ML. Over the 10 year term of the water resource plan that applies in that State, a significant proportion (say a quarter, or 25,000ML) of this entitlement base is traded downstream under an exchange rates model, to a system administered by State B. The exchange rate for this trade is assumed to be 1:1, as the average reliability of the products in each State are similar.

At the review of the water resource plan in State A, it becomes apparent that the river system can no longer sustain the same level of consumptive use, and a significant proportion of this consumptive base needs to be clawed back. State A's capacity to manage this is reduced because it now administers only a fraction of the original entitlement base, the balance being converted to entitlements managed in State B.

To manage this situation effectively the system of exchange rates would need to be able to be retrospectively amended, so that the 25,000ML traded from State A to State B initially at an exchange rate of 1:1 could be readjusted with a new (lower) exchange rate. Alternatively, the remaining 75 per cent of consumptive entitlements in State A would need to be restated (with either/both a lower reliability or volumetric entitlement) to accommodate the system's now reduced sustainable consumptive yield.

Exchange rate trade therefore has the potential to amplify the impact of future revisions to water sharing/resource plans on entitlement holders within certain schemes. If anything this creates an incentive for the State of Origin to seek to limit outbound trade, or to structure exchange rates such that the volume of water 'leaving' the system, and the impact on remaining irrigators is lessened.

Within reasonable ranges of trading volumes some stakeholders contend that these impacts are probably not large, but all generally accept that the potential exists. More important is that the likelihood and magnitude of third party impacts will increase with the cumulative impact of trade, especially where trade causes some systematic outbound flows from some system.

Tagging would avoid this by ensuring that entitlements 'created' within a particular system retain the risks and responsibilities of that system. It removes the incentive (and opportunity) for States to seek to influence trading outcomes. A water entitlement which is traded through a tagged trade framework would be administered no differently by the State of Origin, with the only practical change being a shift in the point of extraction (and a consequent change in which jurisdiction is responsible for regulating extraction works, metering and site use approvals). A summary comparison of tagging and exchange rates is provided in Table 8.

Table 8: Summary comparison of tagging and exchange rates

Criteria	Exchange rates	Tagging
Efficiency & equity	<p>Primary concern is the potential for third party impacts, both in a 'normal' season, during extreme allocation events (eg, very low announced allocations), and when underlying water sharing/resource plans are revised</p> <p>Any third party impacts would be shared by all water access entitlement holders in the receiving valley/State</p>	<p>Limits third party impacts by retaining the link between the entitlement and the risks and responsibilities carried by the entitlement holder</p> <p>Removes third party impacts and places risks with the buyer</p>
Climate change and risk	<p>Impact of climate change on rainfall/inflows will be different between States and valleys. To address this risk exchange rates will need to change over time, and to avoid third party impacts would need to be retrospectively applied (which States have signalled would not occur)</p>	<p>Risk is assigned to the buyer, including future changes in reliability or system performance resulting from climate change or other factors</p>
Product choice	<p>Product choices limited to water access entitlements available in the State of Destination.</p> <p>Exchange rates do however streamline the process of product conversion for a low reliability (State of Origin) to high reliability (State of Destination) transfer, as this is a single transaction from the buyers' perspective</p>	<p>Market participants can choose between water access entitlements from any system (able to be physically transferred) and with varying reliability and characteristics (eg, access to carry-over)</p>
Administrative practicability	<p>Simpler from irrigator's perspective, as avoids the need for the purchaser to obtain information on another jurisdiction's water management frameworks. Entitlement holders may have more confidence in their 'home' jurisdiction, and hence be more likely to look interstate to trade with an exchange rates system</p>	<p>Transactionally and conceptually less complex at the State-level</p> <p>Some ongoing administrative issues in communications protocols/information sharing between jurisdictions, though not significant</p>

Tagging is in our view the preferred mechanism for facilitating cross-border trade in water access entitlements. Tagging ensures that the individual rights, responsibilities and risks embedded on one jurisdiction's water access entitlements are preserved, and not socialised across the system and across other users as would be the case under an exchange rates framework.

The administrative arrangements required to facilitate tagging need to be resolved, but should not present an insurmountable task. Under a tagged system, each jurisdiction will need to amend its water management legislation and administrative practices to:

- allow irrigators to extract and use a water entitlement which is authorised under another State's legislation, and for the State of destination to regulate any associated works;
- provide for the interoperability of water allocation accounting systems, such that an irrigator's water use can be tracked as to which allocation (from which entitlement) is being used;
- allow for a fee to be charged to read a meter, even though the water allocation may be authorised under another State's water entitlement, and for this meter reading to be relied upon by both the State of origin and destination; and
- allow for irrigation districts to charge for off-river water delivery, irrespective of the jurisdiction which administers the primary water entitlement.

Existing water accounting systems should be capable of accommodating tagging, with some supplementary protocols agreed between the relevant States for information sharing and coordinated and compatible meter reading arrangements. Issues with water accounting are more the capacity of existing systems to accommodate any accelerated uptake in temporary trading (irrespective of whether this is between or within States).

In addition, in some jurisdictions legislative changes may be required to existing legislative frameworks to ensure for instance, that water access entitlements created in the State of Origin can be recognised and applied in another jurisdiction. The legislative issues associated with tagged trade are further discussed at Appendix J.

6.3.2. Tagging and product mix

A desirable feature of a tagged trading system is that it has the potential to widen the scope of products available to irrigators.

Irrigators in the southern interconnected MDB would be able to access any and all of the different entitlement forms operated by New South Wales, Victoria and South Australia. The same would apply in the Border Rivers area between Queensland and New South Wales.

Under a tagged system of exchange the familiarity of the existing mix of entitlements would be retained – as it is evident that entitlement form has both shaped and been influenced by the pattern of irrigated agriculture in each jurisdiction – and the system would allow irrigators to choose a product mix which best suits their risk profile and operational requirements. As ACIL Tasman (2003) observed in its report on potential water trading products:

... having the ability to accumulate water from different sources, with different characteristics, adds to the flexibility users have to sculpt a mix of entitlements, and their demand patterns, to deliver a cost-effective outcome (p.38).

Tagging would provide an avenue to allow entitlement holders to manage, at an individual level, their unique supply and reliability requirements.

This is perhaps most important where systems are managed in a comparatively 'general' fashion, with entitlements specified with common characteristics and where, within that State, there are fewer opportunities for a user to acquire a combination of higher/lower reliability products to meet their requirements.

Conversion between products of different reliability

To fully realise the benefits of product mix diversity, desirably there should be greater scope for conversion between lower and higher reliability products, where these exist. Mostly this issue is raised in the context of New South Wales general reliability water access entitlements and the ability to convert these into high reliability water access entitlements. Although, this issue will also be relevant in Victoria once its revised entitlements framework come into effect on 1 July 2007.

Permanent trade across States is mostly expected to be in high reliability entitlements, facilitating a continued shift towards horticulture, viticulture and other higher-value applications within the Basin. The existing product mix proportions, which reflect a host of historic factors, are most unlikely to align with the market's current (or future) demand for water access entitlements of differing levels of reliability.

The types of entitlements currently available in each State reflect in part the types of uses in which water is employed (and vice versa). For example, in South Australia and Victoria users that have access to high reliability water entitlements have developed infrastructure and industries reflecting these reliable flows. In New South Wales, irrigators hold entitlements that are of high or low reliability, partially reflecting the type of agricultural products they produce. There is some expectation that irrigators in South Australia and Victoria will be more likely to purchase high reliability entitlements than general reliability water access entitlements from New South Wales.

In New South Wales, general reliability water access entitlement holders have been permitted to convert entitlements into high reliability water access entitlements through periodic tendering processes. Under the *Water Management Act 2000* (NSW) and statutory planning process the relevant Government Minister may formally declare conversion rates. These frameworks need to be formalised to allow these entitlement types (and others as appropriate) to be converted at the demand of the entitlement holder (where practicable) at any time. In fact, during the course of this study some significant progress was made on this front, with New South Wales announcing amended factors for the conversion of general reliability to high reliability water access entitlements on the Murray (0.60) and Murrumbidgee (0.55) systems.

It needs to be recognised that conversion factors are essentially a form of exchange rate, and therefore there is still the potential for third-party impacts in the conversion between product type. There are however two important distinctions:

- firstly, although there is potential for third-party impacts arising from the use of conversion rates, in comparison to an exchange rate based system for interstate trade, the impact of any changes would be expected to be relatively localised and less significant, and therefore more readily addressed; and
- secondly, such product conversion is different to the broader application of exchange rates to cross-border trade because it retains the system-specific characteristics of the (converted) entitlement. A Murrumbidgee general reliability water access entitlement which is converted to a high reliability product using a conversion factor of 0.55 is still a Murrumbidgee product. If there is an adverse year in which high reliability allocations cannot be fully delivered within this system, then this risk remains with the 'converted' product and the entitlement holder, not with the State of Destination.

Allowing conversion between entitlement types, within each jurisdiction and/or specific catchment, would ensure that the product mix with the most value to the market is achieved. This is important not just to interstate trade, but to trade across and within valleys *within* each State.

Retail tagging

Retail tagging involves creating a permanent link between an entitlement and the irrigation district in which it presently resides. Trade in this case would require that ongoing responsibility for the purchaser of an entitlement external to the irrigation district to pay an ongoing charge even though the water may be used in another valley or even interstate.

Retail tagging is analogous to exit fees, which are discussed above, and if implemented in the form suggested by some irrigation companies would constitute a barrier to trade. This is both because of the direct cost it imposes on the transaction and probably more importantly because of the administrative complexity it creates in having to monitor where water has come from and track the path of a tagged entitlement as it may enter and exit several different irrigation schemes over time.

Interstate trade and administrative forfeiture rules

Another dimension is the carry-over provisions which are allowed in some systems, most commonly in New South Wales for general reliability entitlements. Carryover essentially removes what are sometimes described as administrative forfeiture rules, which provide a 'use it or lose it' incentive to irrigators towards the end of the water year.

Most jurisdictions in Australia apply administrative forfeiture rules which limit the ability of water access entitlement holders to carry-over water allocations into subsequent periods. In the southern MDB, administrative forfeiture rules apply in SA and Victoria. In both states, water access entitlement holders at the conclusion of a water year forfeit the volume of water un-used portion of a water allocation. This may create incentive for water access entitlement holders to use their allocation inefficiently, particularly where the marginal costs of using 'surplus' water allocation volumes is low or zero.

In New South Wales, carry-over is permitted in some catchments. In the Murray and Murrumbidgee river valley, irrigators are permitted to carry-over 50 per cent and 15 per cent respectively of their water allocation to the following year. Irrigators are also permitted to carry-over water (to varying extents) in the Lachlan, Belubula, Macquarie and Cudgegong river valleys.

There are hydrological and operational limitations on the extent to which all systems are able to accommodate continuous accounting/carry-over of water allocation from year to year. Providing for carry-over essentially means that more of the available storage capacity will be used, and while this provides an immediate buffer to next years' reliability, it increases also the probability that storage inflows will exceed capacity and cause the storage to spill. Carry over of course can only be provided where storage is available – for a 'run of river' system obviously there is little practicable opportunity for carry-over to be provided.

We are attracted to the concept of carry-over, largely for the reason that it allows individual irrigators greater flexibility in managing their water use and future water supply reliability. However, we recognise that carry-over essentially is another dimension of the water access entitlement product on offer in the relevant system, and a decision to allow carry-over needs to consider impacts on reliability and system operation. These decisions properly should be made by the relevant system operators, in consultation with irrigators and other users.

Where carry-over provisions differ between jurisdictions, some Governments and water authorities have introduced bans on late season trade to limit the extent to which water may be transferred temporarily across jurisdictional boundaries. These restrictions seek to limit irrigators' ability to access whatever carry-over provisions may apply in another State.

In Victoria, for instance a late-season ban is imposed on temporary transfers in to New South Wales for exactly this reason.

As we understand it, the Victorian Government's concern is that allowing late season transfers of water allocation to New South Wales will have the effect of increasing Victoria's "apparent" water use, thereby lowering the Victorian share of water held in common water storages. The effect of this would be to lower the actual reliability to Victorian irrigators in the following water year. Conversely, New South Wales irrigators would be able to use their entire New South Wales entitlement volume, and still carry-over whatever volume they are able to acquire from their Victorian counterparts, buffering their reliability in the following year.

We are not convinced as to the merits of such restrictions, and would generally argue for bans on late season temporary transfers and other similar impediments to be removed:

- allowing trade between jurisdictions with- and without carry over arrangements will allow the market to demonstrate the value of these system operating rules;
- to the extent that supply reliability is reduced in Victoria, then this would be no more than would occur were existing entitlement holders to *use* (rather than trade interstate) their full water allocation volumes – for which no restrictions presently apply;
- it would allow Victorian entitlement holders full access to the water market for the full year, and would enhance opportunities for efficient water users to profitably trade surplus water allocations; and
- tagging would allow Victorian irrigators to hold New South Wales water access entitlements, consequently giving them access to whatever carryover provisions may be available. This would allow them to circumvent the restrictions on late season temporary transfers by strategically drawing on a combination of New South Wales and Victorian water allocations during the year.

Recommended actions

- Both New South Wales and Victoria (from 1 July 2007) have developed the legislative basis to support interstate 'wholesale tagged' trade.

In other States and Territories where cross-border trade is feasible (in particular, South Australia and Queensland), Governments should amend legislation and administrative systems to support tagged trade.

Tagged trade also has implications for current MDB cap arrangements which limit the volume of water that may be diverted by States whom are party to this Agreement. Accordingly, a system will need to be developed so that upon the transfer of a water access entitlement or allocation (whether under tagged or exchange rate trade), the volume of cap attributed to that entitlement is also be transferred into the State of Destination.

The cap implications of more widespread entitlement conversion (from lower reliability to high reliability, for instance) also need to be considered. The parties to the Murray Darling Basin Agreement need to agree on the principles to guide this, and whether, for instance, the State which supports the conversion of one product-type to another also receives the cap 'headroom' which might result.

- More timely and compatible water accounting systems would need to be developed to facilitate large-scale tagged trade. Current water accounting frameworks are insufficient to adequately account for large-scale tagged trade, and in fact need to be improved to facilitate any significant expansion in (temporary) trade.
- Under a tagged regime, water accounting frameworks should:
 - provide information on the volume of water or share of water available for use under an allocation at a point in time. This information is required to:
 - allow water authorities to charge delivery costs. Billing systems would need to be robust and accurate reflecting use (on a quarterly, half yearly, annual basis, as appropriate),
 - allow for the resource (including environmental flows) to be appropriately managed in the State of Origin and Destination;
 - be updated regularly to account for allocation announcements by relevant State agencies;
 - provide a mechanism for jurisdictions to register allocations on a system that has a common interface to allow for information exchange;
 - ensure that information on use, water access entitlement specification and allocation transfers are simultaneously updated in the State of Origin and State of Destination;
 - provide a system that adequately relays necessary information to the jurisdiction charged with enforcing the rules associated with use; and
 - where a water access entitlement is traded, allows for registers to be updated in a timely manner to assist resource managers and to minimise the potential for fraud.

- All States and Territories should consider further the potential for the removal or relaxation of administrative forfeiture rules to allow carry-over, subject to limitations associated with storage capacity and hydrological considerations.
- Late-season restrictions on temporary trades from Victoria to New South Wales should be removed.

6.4. Separating transfer and use approvals

Rules governing the use and application of an asset should to the greatest extent possible be separate from the process of approving a transfer in ownership.

In other asset markets, the process of approving the transfer of ownership is separate and administered apart from the process of approving any change in the use of that asset. The property market is an example here. Almost any entity is able to acquire a property asset, but this does not provide them with unfettered rights as to what purpose that property will be used for. Rules governing changes in the use of that property need still be adhered to.

An effective market in water would mirror these principles – the administration of a transfer of ownership would be separate to the process of approving any change in the use or form of that entitlement. This generally is the approach that most jurisdictions are following in designing their use approval and trading frameworks.

However, in some jurisdictions water access entitlement or allocation holders are required to gain approval for use, some of which involve complex hydro-geological assessments. Approval processes for trades vary between the States and Territories. For example:

- In South Australia, under the *Natural Resources Management Act 2004* (SA) approval to use water is bundled with a water (taking) allocation. Section 150 of the Act provides that “a water (taking) allocation may be fixed by specifying the volume of water that may be taken and use or by reference to the purpose for which the water may be taken and used or in any other manner.”

Hydro-geological assessments are also required to trade a water (taking) allocation where it is to be transferred to a new location. This assessment considers the impact of the proposed trade on the structural integrity of aquifers, water quality and other water resources and ecosystems dependent on underground water.

Alternatively, the holder may apply to convert their water (taking) allocation to a water (holding) allocation, which does not require a use approval for it to be transferred. This mechanism allows parties to trade water without the need for complex use approvals.

- In the Northern Territory, only water allocated for consumptive ‘beneficial’ uses in the relevant Water Allocation Plan may be traded. Beneficial users may include agricultural, cultural, aquaculture, public water supply, environment, riparian and the manufacturing industry. Accordingly, unless water used for one of these uses in the Territory, it cannot be traded.

- Similar restrictions apply in Western Australia where specific rules limit the scope for non-users and non-occupies or owners of land to trade water access entitlements (eg, speculators). For instance, a Western Australian Water Licence may only be held by the owner, occupier or person who has access to land where there is water. Where water is unused, it cannot be traded and may be re-allocated by the State Government.

Increasing scope for trading pre-approvals

There is greater scope in the water sector for the use of pre-approved trading limits, zones and other mechanisms to reduce the time and cost of transacting.

‘Generic’ trading rules can expedite approval processes by removing the need for market participants to undertake at times lengthy, complex and costly approval processes.

Currently, approval processes for trade can take up to six months to complete. The Allen Consulting Group (2006) found that approvals for temporary and permanent transfers vary significantly between jurisdictions. Table 9 below outlines the typical time by selected States to process regulatory approvals.

Table 9: Typical time for regulatory approvals, selected States

State	Temporary	Permanent
Queensland	1 day	1 week for pre-tested trades
New South Wales	3 days	Up to 6 months
Victoria	1 day	4 to 6 weeks
South Australia	5-7 days	6 to 8 weeks

Source: The Allen Consulting Group, 2006.

Rules that ‘pre-approve’ trades are usually developed by pre-testing the impacts of certain types of transfers within defined limits and areas. The rules communicate to market participants the types of trades that will and will not be permitted, hence providing defined boundaries within which trade can occur. Such rules reduce the extent of Government involvement at the time the transaction occurs, and can therefore expedite trading processes.

These rules are usually developed as part of water resource management planning processes. For example, generic rules that govern water dealings in the New South Wales Murray and Lower Darling Regulated Rivers Water Sources, detailed in the relevant Water Sharing Plan, prohibit:

- the movement of New South Wales Murray water access entitlements from upstream of the Barmah Choke (taken as the Murray River downstream of the Gulpa Creek offtake at Picnic Point) to downstream of the Barmah Choke;

- assignments of water allocations from upstream to downstream of the Barmah Choke if this will diminish the ability to fully supply orders for water downstream of the Choke;
- movement of water access entitlements or assignment of water allocations between the water resources and any water sources in New South Wales other than the Murrumbidgee or an unregulated catchment in the Murray (trading and assignment between the New South Wales Murray and the Lower Darling is permitted); and
- trading of supplementary water access entitlements or their water allocations between water sources.

While there are concerns that generic trading rules may be too conservatively set in some catchments, pre-approvals embedded within trading protocols at least allow temporary trades consistent with those rules to occur promptly without recourse to an external approving agency.

The transparency of these generic rules for pre-approved trades also ensures they are subject to external scrutiny. The market and other stakeholders can periodically reconsider whether a particular rule is delivering on its stated purpose, or whether a modification may be warranted. *Ex post* approvals processes tend to be more discretionary, and less amenable to such scrutiny.

Practically, the complexities of the water sector, as compared to other markets, means that it is infeasible to define *ex ante* rules for all trades, and even where some trades are constrained this may be an entirely appropriate outcome.

Recommended actions

To expedite trading processes approvals related to use and trade should be separated. Trading processes should be distinct from use approvals to allow non-users to hold and trade both water access entitlements and allocations.

Remaining rules that link use and trading approvals should be removed. This includes:

- in Western Australia, the requirement should be removed for a water access entitlement holder to use the allocated water; and
- in the Northern Territory, remove the requirement that the holder of a water access entitlement must use water under that entitlement for 'beneficial' uses.

Use approval processes and requirements should be clearly communicated to potential market participants to allow potential users of water to effectively coordinate obtaining use and trading approvals separately. Processes that allow market participants who intend to use water to gain both use and transfer approvals expeditiously should also be available.

State and Territory Governments should examine current frameworks that govern trading approval processes to examine whether there is scope to augment or develop generic rules and introduce or augment existing mechanisms for pre-approval.

- Trading policies and regulations should incorporate a mechanism, such as a 'trigger point,' that provides for their review.

Regulatory triggers may include where other extreme climatic conditions (such as drought) significantly impact on the characteristics of the resource, or where legislation and/or regulation is reviewed that impacts on the availability or characteristics of water resources.

6.5. Completion of regulatory and water planning frameworks that govern trade

In most jurisdictions, water management planning processes must be completed prior to the trade of entitlements to water.

All States and Territories (other than the Australian Capital Territory) are in the process of completing regulatory planning processes, most of which incorporate rules that govern water trade.

- In New South Wales, water planning frameworks for most surface water sources have been completed where trading is most likely to occur.
- In Queensland, landholders are only permitted to trade water where Resource Operations Plans are yet to be completed. As at April 2006, the Queensland Government had completed Resource Operations Plans for six of the 23 systems identified for planning. Queensland intends to have completed all Resource Operations Plans (ROP) by 2009.
- In South Australia, water (holding) and water (taking) licences are only issued in Prescribed Water Areas. Accordingly, South Australia's legislative and regulatory frameworks do not provide formalised frameworks for trading in areas other than those that are Prescribed.
- In the Northern Territory, water trading is only permitted within Water Control Districts where water allocation plans have been completed. As at April 2006, planning for only one of the six Water Control Districts had been completed.
- In Tasmania, water management plans have only been completed for three of the 16 'priority catchments' in the State. Specific rules that govern trade within a catchment are outlined in the relevant water management plan. The general principles that are to govern trade are outlined in the *Guiding Principles for Water Trading in Tasmania*.
- In Victoria, Stream Flow Management Plans (SFMPs) outline the rules for sharing water from unregulated sources in a region. For unregulated sources, where specific SFMPs have not been completed, generic trading rules are being developed using a sustainable diversion limit methodology. Despite this, approximately 80 per cent of water in Victoria is managed under bulk entitlements issued to Rural Water Authorities. Environmental planning frameworks protect environmental flows managed under bulk entitlements (eg, regional river health strategies).

- In Western Australia, the arrangements that govern water trading are under review by the State Government. In September 2005, the Western Australian Government announced that it would review the regulatory and policy arrangements that govern water trading, namely Statewide Policy No.6, *Transferable (tradeable) Water Entitlements*. Presumably, the Interim sub-policy to guide the operational management of trading that was released by the Water and Rivers Commission in 2003 will be updated concurrently.
- Water management in the Australian Capital Territory is guided by the Territory-wide Water Resources Management Plan – *Think Water, Act Water*. In the ACT, frameworks to support trade are yet to be developed given a perceived lack in demand for water trading within the Territory and pending the finalisation of the MDBC's cap on water diversions. Currently, trades are assessed on a case-by-case basis by the Environment Protection Authority.

The extent to which planning processes have been completed partially reflects the State and Territory Governments' priorities for water management planning. Generally, it appears that priority has been afforded to systems that are considered to be over-allocated or 'stressed' which seems to be a reasonable approach. However to facilitate trade, planning processes should be completed as quickly as possible, having regard as a priority not only to systems which are over-allocated but to those where trading may offer the greatest immediate returns.

Planning processes that govern groundwater trading appear to have lagged the development of surface water trading frameworks. In addition, the rules that have been introduced to manage groundwater and surface water trading appear not to be consistently applied.

Differences in the rules that govern groundwater and surface water use generally reflect a precautionary approach to groundwater management. Such an approach may be warranted given uncertainties about the characteristics of groundwater resources; for instance, insufficient information on groundwater recharge rates and other aspects of hydro-geological connectivity.

In some jurisdictions, where trading in surface water if allowed, there has been no trade in groundwater from interconnected sources. Where water and groundwater resources are highly interconnected trading rules should account for both groundwater and surface water sources that may be impacted by a transfer.

Unless the rules that govern trade are compatible between groundwater and surface water sources, trade has the potential to create further inefficiencies. For example, where groundwater trade is restricted and surface water is not, and the sources of flow are interconnected, there is the potential for substitution between sources which may create adverse market and environmental outcomes.

Differences in the approaches adopted by different jurisdictions to groundwater management loosely reflect the nature of the water resources they manage, and those resources that were identified as priorities in planning and management processes. Despite this, it appears that overall groundwater planning processes in most States have lagged the completion of surface water planning processes.

For instance, in New South Wales, no formalised trade has occurred to April 2006 given the planning processes that allow for trade have not been completed for most groundwater sources. Many groundwater regulatory planning processes have been deferred, despite trade occurring in related surface water systems. However, planning processes are progressing with the release of the Draft Water Sharing Plan for the Lower Murray Groundwater Source in March 2006. Drafting for currently deferred groundwater management plans in the State will commence in July 2006.

Similarly in Queensland, water planning processes have not been completed to allow for trading in groundwater. However, planning processes governing the use of Queensland's most significant groundwater resource, the Great Artesian Basin, are progressing. In March 2006, the Queensland Department of Natural Resources, Mines and Water released the Water Resource Plan for the Great Artesian Basin. It is unclear the extent to which the Government will allow for groundwater trading within or external to the Basin. The Queensland Government has also signalled it will review some existing plans to provide for groundwater management.

Where trade is permitted, it is generally confined to within aquifer transactions. In the Northern Territory and South Australia, trade is permitted and has occurred in groundwater resources within aquifers. In the Northern Territory, trading is permitted across management zones but is limited to within aquifer transactions given the geographical dispersion of groundwater resources.

In South Australia and Victoria, trade is limited to within water management areas, within trading zones, within aquifers. The Australian Competition and Consumer Commission noted in its submission to the Productivity Commission's inquiry *Rural Water Use and the Environment: The Role of Market Mechanisms*, that groundwater trading zones in South Australia appear to be more for administrative purposes than related to managing groundwater.

Some trading zones or management areas to which trade is confined do not appear to relate to the hydrological characteristics of the resource. Although the NWI supports the establishment of trading zones to facilitate the administration of trade, where zones preclude trade and where the benefits of removing such restrictions significantly outweigh the associated costs, such restrictions should be removed.

In some cases, governments may introduce restrictions that limit trade to achieve water management outcomes that are relatively unrelated. For instance, in South Australia a 20 per cent 'reduction factor' is applied to water allocations that are traded (permanently or temporarily) in the Northern Adelaide Plains Prescribed Wells Area as a precaution until sustainable extraction limits are better defined. In this way, it appears that the South Australian Government is using the mechanism of trade to reduce water consumption where alternative mechanisms could be employed.

As reduction factors have the potential to impede trade they should be removed, and alternative mechanisms introduced that are separate from trade to directly address concerns regarding resource over-allocation. This might include the restatement of existing consumption entitlements, reducing either or both the volumetric or reliability components to bring these back within sustainable limits. This would allow for the achievement of the desired environmental outcome, without restricting opportunities for trade.

Recommended actions

- Governments should continue to develop the appropriate regulatory frameworks that provide the basis for entitlement specification and the rules that govern trade. By jurisdiction, required actions include:
 - In Queensland and New South Wales, complete water planning frameworks, with a particular focus on finalising plans related to groundwater management and trade, and those plans where the potential benefits to be derived from trade are greatest;
 - In South Australia, examine options to allow water to be traded external to Prescribed Areas, as appropriate;
 - In Victoria, continue developing Stream Flow Management Plans to manage unregulated water as appropriate;
 - In the Northern Territory, complete planning processes for Water Control Districts as appropriate;
 - In Tasmania, complete water management plans as appropriate. In addition Tasmania should consider establishing the system of trading zones and exchange rates provided for in its *Guiding Principles for Water Trading in Tasmania*;
 - Western Australian Government to complete its review of Statewide Policy No.6 *Transferable (tradeable) Water Entitlements for Western Australia* that governs trade and implement changes to the operational management of trading as appropriate; and

- Australian Capital Territory Government to commence designing and developing the regulatory and policy frameworks that will govern trade in anticipation of the MDBC finalising the cap on water diversions for the Territory which is estimated for completion in mid-2006.

Governments should undertake to complete groundwater management planning process as expeditiously as possible, especially where:

- sources are highly connected with surface water sources;
- significant trade occurs in the surface water resources;
- it has been identified that trading in groundwater from the source will result in significant benefits;
- where it is deemed to be a priority from an environmental perspective; and
- ensure rules applied to surface water and groundwater resources are consistent, particularly where systems are highly interconnected:
 - in New South Wales and Queensland, groundwater planning processes should be completed with priority where surface water and groundwater systems are highly interconnected, and the potential for adverse outcomes is high; and
 - in South Australia and Victoria, restrictions should be removed that have the potential to limit trade to within management zones, where further gains may be derived from allowing trade across zones, or between aquifers and surface and groundwater sources, as practicable.

6.6. Rules governing market participation

6.6.1. Opening up market participation

Market rules desirably should not proscribe any party from participating in the market, unless there is a clear public policy justification. This may occur where the integrity of the market relies on the confidence of participants in the credit worthiness of transaction counterparties, and hence participation may be subject to prudential or other requirements.

In the case of the water market, there are probably fewer such arguments for limiting market participation. The efficiency consequences of such restrictions are likely to be quite large. Limiting the market to only a subset of users constrains at any point in time the range of marginal values that might support trade. The equity arguments also are not compelling. Removing limits on market participation supports a deeper, more liquid market in water entitlements.

The majority of trades have been between users in industries where water is a major input to production (ie, agriculture). Available evidence suggests that trade has re-allocated scarce water resources towards more profitable industries for use, or more profitable users within the industry.

What is less certain is how the market might have performed were some of the continuing restrictions on market participation removed or eased. Limitations on market participation vary between States and Territories. Restrictions imposed that have the potential to limit trade include:

- non-landholder or non-occupier of land;
- non-user of an allocation; and
- inter-sectoral transfers.

Non-land owner/occupier

In some jurisdictions, although water access entitlements and allocations are separate from land title, the holder is required to own or occupy land.

In Victoria, Western Australia, Northern Territory and the Australian Capital Territory, the holder of a water entitlement is generally required to own or have access to land related to that entitlement.

In comparison, in New South Wales there is no requirement to be a landowner or occupier to hold a water access entitlement. Anyone can own a Queensland water allocation, but interim water allocations and water licences must generally be owned by the landholder. In Tasmania, although there is no formal legal requirement for a water access entitlement holder to own land, indirectly the approval processes result in landholders holding water entitlements.

In South Australia, the holder of a water (holding) allocation is not required to be a landholder. Where the water access entitlement owner applies to have the water (holding) allocation converted to a (taking) allocation, there is a requirement to link the allocation with land. In addition, although most allocations have been converted to volumetric allocations some remain area-based. The 2005 National Competition Policy assessment of water reform progress noted that South Australia expects the process of converting to volumetric-based allocations to be completed by July 2007.

In Victoria, under proposed reforms, no more than ten per cent of the total water share within any system will be permitted to be held unattached to land. Accordingly, 90 per cent of water entitlements will be tied to land. Where a water user's water share exceeds twice the volume they are permitted to hold under their water use licence, they are automatically classified as 'non-water user' and subject to the 10 per cent rule described above.

Non-users

Some jurisdictions continue to limit non-users of water from holding water access entitlements and allocations.

In Western Australia, the Government's policy on the *Management of Unused Licence Allocations* states that sleeper licences or an equivalent are not tradeable. Under this policy, Government may re-allocate the licence to another holder who will use the allocation.

In the Northern Territory, in declared Water Control Districts, only water used for consumptive 'beneficial uses' may be traded. Beneficial uses include water used for agricultural, cultural, aquaculture, public water supply, environment, riparian uses and for use in the manufacturing industry. Accordingly, if the potential holder of a water access licence or allocation does not fall within these beneficial use categories, or the prospective holder wishes to only to 'hold' the allocation, these entities are prohibited from trading within Water Control Districts.

Typically, such restrictions are imposed to limit substantial increases in historical levels of water use from the 'activation' of previously un-used entitlements, or to ensure water that is held is used.

Inter-sectoral transfers

The extent to which water may be traded between the rural and urban sectors is dependent on the interconnectedness of delivery mechanisms and rules introduced by Governments regarding such trade.

In some jurisdictions, although there are no specific policy mandates that restrict trade between rural and urban sectors, such trade appears to be discouraged.

Such restrictions might be thought of as a way to ensure that water remains in irrigated agriculture, thereby protecting rural areas from the pressures of further structural adjustment. There are concerns that urban water authorities may have other supply options available to them, whereas irrigators may not, and these urban authorities may also have 'deeper pockets' and a higher ability to pay.

Policies differ between State and Territory governments. Given that there are generally few legislative restrictions to such trade and policy positions on this issue are not well documented by Governments, it is difficult to determine the extent to which trade between rural and urban sectors has been curtailed.

In some cases, a key restriction to the expansion of such trade is a lack of interconnectivity between the water supply systems that service rural areas and urban centres of activity.

In other jurisdictions, transfers between the urban sector (for domestic and manufacturing use) and the rural sector have occurred. For example, in Tasmania, the Northern Territory and South Australia there has been limited trade between these sectors.

Removing restrictions on market participation

The market should allow for any parties to hold and trade water entitlements, whether or not these are to be used for a particular purpose, or at all.

This also should include removing restrictions on urban water authorities, mining companies or other parties (such as companies wishing to procure environmental flows, perhaps as part of an overall 'green' investment strategy) holding water access entitlements.

From a market design perspective such restrictions are inefficient and, in the medium- to long-term, probably ineffective:

- the constituencies such barriers are meant to protect will, in time, realise that the value of one of their core assets (a water access entitlement) is actually being diminished by these policies;
- restrictions can seriously distort investment decisions, causing urban water authorities to rely on potentially more expensive options such as desalination or recycling, over trading.

The issue is not whether a particular user has other supply options, rather it is the relative marginal cost of these options. At one level, all water users have alternative options – ranging from dryland farming, to various irrigation techniques employing differing quantities of capital and water inputs. It would be no more efficient to suggest that coastal urban communities should rely on desalination, simply because this option is technically feasible, than it would to suggest that all forms of irrigated agriculture should comply with some maximum technically feasible level of water-use efficiency; and

- existing policies also operate to prevent existing water authorities from purchasing water entitlements from irrigators – they would not operate to prevent an irrigator or group of irrigators choosing to sell water to urban users (such as a major commercial or industrial users, or a new, non-Government ‘retailer’), using third party access mechanisms which already exist.

One of the key attractions of a market is that it is an effective means of redistributing resources between competing uses, towards those whom value the resource most and, in most situations, use the resource to the greatest benefit to the economy overall. If urban authorities are prepared to pay to acquire water access entitlements from others, including irrigators, then this most likely is because the value of water to them, as compared to alternative supply (or demand management) options, justifies this.

From a practical perspective, and despite the high value of this trade, the likely volume of such transfers is probably not large. Urban water use is a small minority of total water use in Australia, and the volumes of water used even in major metropolitan cities generally is quite small compared to that used in irrigation.

Obviously, all market participants should then have common responsibilities regarding matters such as:

- pricing, in that all holders of water access entitlements should pay headworks charges (where relevant), irrespective of how the water is employed;
- compliance with resource management obligations; and

- if the intended use is a non-consumptive application, then this would still need to comply with arrangements for management of any in-channel capacity constraints.

However, lifting remaining restrictions on who may participate in the market may introduce the prospect of so-called 'water barons' or speculators entering the water market. Their motivation presumably would be to secure a large interest in the water market, and then use their resulting market power to extract higher returns from either the future sale of water access entitlements or in the temporary market.

As observed by the Australian Competition and Consumer Commission (2006), there is no reason to suspect that such conduct is any more likely from non-landholders than existing market participants. Nor is there any research to suggest that a market speculator would be able to profit from acquiring water access entitlements and then withholding supply from the market.

If anything, the wider the potential pool of market participants, and the fewer the restrictions between market segments (whether functional, geographic or temporal), then there would be less prospect of any party – non-landholder or otherwise – gathering any level of market power.

Recommended actions

Restrictions that limit market participation should be removed. This includes:

- In Victoria, Northern Territory, Western Australia and the Australian Capital Territory removing the requirement for a water access entitlement holder or allocation holder to own, occupy or have access to the land to which water may be attached, as practicable.
- Where restrictions exist on trading un-used or sleeper entitlements these should be removed. In particular, restrictions on holding or trading 'sleeper' licences should be removed in Western Australia and the Northern Territory.
- Restrictions on inter-sectoral trade should be removed, and opportunities for inter-sectoral transfers not otherwise discouraged. Jurisdictions should develop frameworks to facilitate inter-sectoral trade where appropriate to enable markets to efficiently allocate water among competing uses.