

# ARTICLES

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## MAKING WAVES: AN OVERHAUL OF WESTERN AUSTRALIA'S LEGISLATIVE FRAMEWORK FOR THE ALLOCATION OF WATER

### PART II

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*In Part I of this paper, it was argued that a strong and clear legislative framework was required for both the allocation of water, and for combating over-allocation problems. In particular, it demonstrated the possibility of achieving a balance between the potentially conflicting objectives of water allocation: sustainable use, efficient allocation and equity. Part I also demonstrated how equity concerns could be taken into account when addressing the problem of over-allocation.*

*Part II of this paper will look at how the legislative provisions proposed in Part I would facilitate the allocation of water licences, and/or water access entitlements. Western Australia has an obligation to adopt a new, market-based mechanism for the initial allocation of water. Section 3 will explore the potential of various market-based allocation methods, such as the auction and tender processes, to be adapted to achieve social-equity objectives. In particular, Section 3 will demonstrate the practical application of the legislative powers proposed in Part I of this paper by looking at how a Minister or the Water and Rivers Commission can reserve water for social equity purposes. The final Section will examine the new entitlement system that will replace existing water licences, allowing allocation in an equitable manner as between existing licensees.*

### 3. THE ALLOCATION OF LICENCES

#### 3.1 The Current System

##### 3.1.1 *Right to take water*

The right to take water in Western Australia (WA) is granted under the *Rights in Water and Irrigation Act 1914* (WA) (RiWI Act) by the Water and Rivers Commission (Commission).<sup>1</sup> According to the RiWI Act, a person must not take water from any watercourse, wetland or underground water source outlined by the RiWI Act, or cause or permit it to be done, except under and in accordance with:

- (a) a right conferred by statute; or

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<sup>1</sup> The Commission's power to manage the State's water resources under the RiWI Act is conferred by the *Water and Rivers Commission Act 1996* (WA). Although the Commission is now the Department of Water, the Commission has not been formally abolished. The *Water Resources Legislation Amendment Bill 2005*, which is currently before Parliament, will formally abolish the Commission and transfer the majority of the Commission's powers to the Minister. However, at the date of publication, the Commission is formally the body responsible for administering the RiWI Act.

- (b) a s 5C licence granted by the Commission in accordance with Sched 1 of the RiWI Act.<sup>2</sup>

This Section is concerned with the method by which s 5C licences are allocated.

### 3.1.2 *First-come, first-served*

Water licences are currently issued at zero cost on a first-come, first-served basis until the water source is fully allocated,<sup>3</sup> with licence applications being assessed and determined in the order that they are received.<sup>4</sup> In determining whether a licence application should be granted, the Commission must have regard to all matters that it considers relevant, including those matters set out in Sched 1, cl 7(2) of the RiWI Act.

However, it is clear that, for several reasons, allocating water on a first-in-time basis is no longer appropriate, especially in areas where there is a high demand for water. First, the National Water Initiative (NWI) requires signatories to release unallocated water through market-based mechanisms where it is practicable.<sup>5</sup> Second, the current system fails to communicate to the licensee the real value of water, giving the licensee little incentive to use water efficiently. The most effective way in which water scarcity is communicated is through prices.<sup>6</sup> Third, water users no longer regard the current system as fair and equitable, particularly in areas where allocation is nearing or at full allocation.<sup>7</sup> Once all the water from a water source is allocated, the next licence applicant will have to purchase water from the market.<sup>8</sup> Those who received allocations under the first-in-time system are regarded as having received a windfall gain.<sup>9</sup> Fourth, hoarding may occur once licensees, or potential licensees, realise that water will have to be purchased from the market once all available water in a water source is allocated.<sup>10</sup> The government may face a rush of people applying for the last allocations of free water, resulting in some people acquiring more than their fair share of water, while genuine applicants may miss out. It is evident that the current system of allocation is no longer appropriate for all situations. The question is what type of allocation method, or methods, should be introduced to replace the current system in WA.

<sup>2</sup> Section 5C(1) RiWI Act 1914 (WA).

<sup>3</sup> WA Water and Rivers Commission, *Draft Esperance Groundwater Area water management plan* (2005) 26, available online at: <<http://portal.environment.wa.gov.au>>; Department of Water, *Local Area Management Plan for the Groundwater Resources of the Kemerton Subareas* (2005) 17, available online at: <<http://portal.water.wa.gov.au>>; Irrigation Review Steering Committee, *State Water Strategy Irrigation Review Final Report* (2005) 54 [8.5.3].

<sup>4</sup> Ibid.

<sup>5</sup> Paragraph 72 of the NWI.

<sup>6</sup> A Gardner, D H MacDonald, V Chung 'Pricing Water for environmental externalities in Western Australia' (2006) 23 EPLJ 309, 315.

<sup>7</sup> A study in the Gnangara Mound area, Perth, WA, found that over 80 percent of those surveyed believed that a water allocation process based solely on the first-come, first-served principle was not fair and equitable: G J Syme and B Nancarrow 'Planning attitudes, lay philosophies and water allocation: A preliminary analysis and research agenda' (1996) 32 *Water Resources Research* 1843, 1846; Natural Resource Management Standing Committee, *A National Approach to Water Trading* (2002) paras 1.14, 2.4.

<sup>8</sup> Natural Resource Management Standing Committee, *A National Approach to Water Trading* (2002) para 7.3.

<sup>9</sup> T Tietenberg, 'The Tradeable Permits Approach to Protecting the Commons: What have we learned?' (Paper presented at the 1st Workshop of the Concerted Action on Tradable Emission Permits, Venice, 3-4 December 2001) 1 <[biodiversityeconomics.org/document.rm?id=713](http://biodiversityeconomics.org/document.rm?id=713)>.

<sup>10</sup> Dr John Marsden, *Water Entitlements, Water Plans & Trading for Western Australia* (2006) 62.

### 3.2.1 *The NWI requirements*

The NWI provides guidelines regarding the release of unallocated water.<sup>11</sup> Although the release of unallocated water is a matter for the States to determine, '[a]ny release of unallocated water should be managed in the context of encouraging the *sustainable* and *efficient* use of scarce water resources'.<sup>12</sup> Unallocated water should only be released where alternative ways of meeting water demands are not viable,<sup>13</sup> and such releases should occur through market-based mechanisms to the extent it is practicable.<sup>14</sup> Thus, any new allocation method must:

- (a) promote sustainable use of water resources;
  - (b) achieve allocative efficiency; and
  - (c) involve some sort of market-based mechanism.
- (a) **Sustainability**  
To maintain environmentally sustainable levels of extraction, allocations should be made in accordance with the allocation limits that are determined by a Water Management Plan (WMP). To ensure that allocations do not exceed allocation limits, WMPs should be legally binding on the Commission.<sup>15</sup>
- (b) **Allocative efficiency**  
The NWI requires water resources to be allocated in an efficient manner. This means that 'allocative efficiency' should be achieved. 'Allocative efficiency' refers to the 'allocation of resources to their most valuable uses'.<sup>16</sup> In selecting the appropriate allocation system, consideration must be given to whether the system will allocate the water to its most valuable uses. This is generally measured by the amount of money a person is willing to pay for a water allocation.
- (c) **'Market-based mechanism'**  
The NWI requires that the new allocation method facilitate the efficient functioning of water markets.<sup>17</sup> A 'market-based mechanism' is a mechanism or regulation that encourages behaviour through market signals rather than through explicit directives.<sup>18</sup>

<sup>11</sup> See paras 70 to 72 of the NWI.

<sup>12</sup> Paragraph 70 of the NWI (emphasis added).

<sup>13</sup> Paragraph 71 of the NWI.

<sup>14</sup> Paragraph 72 of the NWI.

<sup>15</sup> See discussion in Part I, Section 1 [1.2.6].

<sup>16</sup> C Chan, P Laplagne and D Appels, Productivity Commission Staff Research Paper: The Role of Auctions in Allocating Public Resources (2003) 2, available online at:

< <http://www.pc.gov.au/research/staffres/auctions/index.html>>; see also Richard A Posner's definition in *Economic Analysis of Law* (2nd ed, 1977) 10; R Eckersley 'Markets, the State and the environment: An overview' in R Eckersley (ed), *Markets, the State and the Environment: Towards Integration* (Macmillan Education Australia, Melbourne, 1995) 7-45; J McKay and H Bjornlund 'Recent Australian Market Mechanisms as a Component of an Environmental Policy That Can Make Choices Between Sustainability and Social Justice' (2001) 14 *Social Justice Research* 387, 396.

<sup>17</sup> Paragraph 64(iii) of the NWI.

<sup>18</sup> S Whitten, M van Bueren & D Collins, 'Setting the Scene: What are market-based tools and why use them? An overview of market-based instruments and environmental policy in Australia' in S Whitten, M Carter & G Stoneham (eds), *Market-based tools for environmental management – Proceedings of the 6<sup>th</sup> annual AARES national symposium 2003* (2004) 6, 7, available online at:

According to the National Water Commission, WA has failed to meet its obligation to use market-based mechanisms in releasing unallocated water.<sup>19</sup>

### 3.2.2 *The forgotten element – equitable water allocation*

The NWI, and water reform in general, has largely been driven by the goals of ensuring sustainable use, providing environmental allocations, and implementing a water market or other market-based mechanisms to allocate water efficiently. What is clearly absent from the NWI is how the goal of equitable water allocation can be maintained in the midst of these water reforms.<sup>20</sup>

The aim of achieving efficient allocation through the use of market-based systems conflicts with that of equitable allocation. A market-based system relies on market forces to allocate water rights. Normally, market forces dictate that water is allocated to the highest bidder. In contrast, equity suggests that everyone should have a fair opportunity to access water.<sup>21</sup> Allocation of water by market forces may cause considerable financial hardship to smaller and lower-income operators who do not have the means to compete with wealthier water users and irrigators, resulting in some potential licensees being pushed out of the market. The consequence of this is the creation of two classes of irrigators: a 'water rich' class who is able to operate throughout times of scarcity, and a 'water poor' class that may eventually be forced to give up farming.<sup>22</sup> Water users have indicated that water markets alone are not considered fair or acceptable processes for allocating water.<sup>23</sup> For example, a survey conducted in the Gnangara Mound area, Perth, found that more than 80 percent of surveyed water users in the area:

- believed that, if water could be bought and sold, some water users would miss out on water unfairly;<sup>24</sup> and
- disagreed with the concept of using market-based mechanisms to allocate water to the highest bidders.<sup>25</sup>

Multiple studies conducted by Syme around Australia, and in Perth, revealed that respondents considered water to be a common good and should be managed for the welfare of the community as a whole.<sup>26</sup> According to Syme, if there is to be community acceptance of the use of market

<sup>19</sup> <<http://www.rirdc.gov.au/reports/AFT/04-142.pdf>> (accessed 2 July 2006).

<sup>19</sup> National Water Commission, *2005 National Competition Policy Assessment of Water Reform Progress* (2006) 5.11, 5.36-5.37.

<sup>20</sup> See, for example, para 37 of the NWI which fails to address how social objectives (raised in para 36) can be achieved through water planning.

<sup>21</sup> G J Syme & B Nancarrow, 'The determinants of perceptions of fairness in the allocation of water to multiple uses' (1997) 33 *Water Resources Research* 2143, 2150.

<sup>22</sup> J McKay and H Bjornlund, 'Recent Australian Market Mechanisms as a Component of an Environmental Policy That Can Make Choices Between Sustainability and Social Justice' (2001) 14 *Social Justice Research* 387, 397.

<sup>23</sup> G J Syme, B Nancarrow and J A McCreddin 'Defining the components of fairness in the allocation of water to environmental and human uses' (1999) 57 *Journal of Environmental Management* 51, 67. See also table 1 on p 59 which shows that those surveyed in all five studies ranked the notion of selling water on the market to the highest bidder as the statement they disagreed with the most; G J Syme and B Nancarrow 'Planning attitudes, lay philosophies and water allocation: A preliminary analysis and research agenda' (1996) 32 *Water Resources Research* 1843, 1846.

<sup>24</sup> G J Syme and B Nancarrow 'Planning attitudes, lay philosophies and water allocation: A preliminary analysis and research agenda' (1996) 32 *Water Resources Research* 1843, 1846.

<sup>25</sup> Ibid.

<sup>26</sup> G J Syme, B Nancarrow and J A McCreddin 'Defining the components of fairness in the allocation of water to environmental and human uses' (1999) 57 *Journal of Environmental Management* 51, 55-57.

mechanisms to distribute water, issues regarding social-equity and public-good must be addressed.<sup>27</sup> The underlying theme conveyed in all the survey results was that water should be allocated on a more equitable basis.

Thus, the question for legislators is whether, in pursuing efficient allocation through market-based mechanisms, equitable water distribution can also be maintained. This next part of the paper examines whether market-based mechanisms can be adapted to address imbalances in social equity brought about by the effects of market forces in allocating water to the highest bidder.

### 3.3 Alternative Allocation Methodologies

Although Commission policy dictates that licences are to be allocated according to the first-come, first-served system, the RiWI Act provides for alternative methods of allocating water licences. Under the RiWI Act, the Commission may enter into an agreement with the applicant to grant a licence in return for the payment of a premium.<sup>28</sup> The Commission may also transfer a licence or water entitlement:

- by public auction;
- tender; or
- by private treaty.<sup>29</sup>

Although these three allocation methods relate to the transfer of licences or entitlements, this paper will examine whether these methodologies may be used for the initial allocation of water licences. It should be noted, however, that no licences have yet been granted or transferred by the Commission under these alternative methods.<sup>30</sup>

#### 3.3.1 Auction

##### (a) *What is an auction?*<sup>31</sup>

An auction is 'a market institution with an explicit set of rules determining resource allocation and prices on the basis of bids from the market participants'.<sup>32</sup> The bids specify the monetary value that the bidder is willing to pay for the goods and, in some cases, the quantity or quality of the goods to be traded.<sup>33</sup> The goods are generally awarded to the highest bidder.

Auctions have recently been used to allocate water in Queensland. The process was adopted again after the success of previously held auctions.<sup>34</sup> It was concluded that the auction system was the most equitable method of allocation; it ensured that 'existing and potential customers ha[d] access to extra allocations in the fairest way possible' as the system did not rely on first-in-time principles.<sup>35</sup> The Queensland government, through a government-owned corporation, held auctions

<sup>27</sup> G J Syme, B Nancarrow and J A McCreddin 'Defining the components of fairness in the allocation of water to environmental and human uses' (1999) 57 *Journal of Environmental Management* 51, 60.

<sup>28</sup> Schedule 1, cl 40 RiWI Act 1914 (WA).

<sup>29</sup> *Ibid*, Sched 1, cl 41(3).

<sup>30</sup> Based on email communication from Roderic Banyard from the Department of Water to Vivian Chung, 10 August 2006.

<sup>31</sup> It should be noted that some commentators have used the terms 'auction' and 'tender' interchangeably.

<sup>32</sup> R Preston McAfee and John McMillan, 'Auctions and Bidding' (1987) 25 *Journal of Economic Literature* 699, 701.

<sup>33</sup> C Chan, P Laplagne and D Appels, *Productivity Commission Staff Research Paper: The Role of Auctions in Allocating Public Resources* (2003) 5.

<sup>34</sup> Sunwater, 'Burnett River Dam water tender set to commence' (Press release, 20 October 2005), available online at: <[http://www.sunwater.com.au/media\\_1205.htm](http://www.sunwater.com.au/media_1205.htm)> (accessed 15 July 2006).

<sup>35</sup> *Ibid*.

for water from Paradise Dam.<sup>36</sup> Applicants could submit bids to either buy or lease water, and had to specify the volume of water required and the price that the applicant was prepared to pay.<sup>37</sup> The bid was accepted at the price submitted if it exceeded the reserve price and met the other administrative criteria set out in the offer document.<sup>38</sup>

Most proponents of the auction method of allocating resources have based their arguments on the ability of the auction process to promote allocative efficiency.<sup>39</sup> It is argued that the auction process generally allocates resources to their most valuable uses by awarding the resource to the bidder who values it the most.<sup>40</sup> This argument is based on the assumption that the bidder who is willing to pay the most has the highest value use for the water.

However, evidence shows that this may not necessarily be the case. Water auctions held in Victoria in the late 1980s revealed that water secured by the highest bidders did not always go to high value uses.<sup>41</sup> Rather, many successful bidders bought water allocations for low value uses,<sup>42</sup> or as security in case of drought.<sup>43</sup> The experiences of the Victorian auctions indicate that it is the bidder with greater wealth that will obtain the water entitlement or allocation.

**(b) Addressing social inequities**

One of the advantages of the auction process is its flexible nature. According to McMillan, the auction process need not be run so that the highest bidder wins the resource; it can also be used as a public policy tool to achieve social equity goals.<sup>44</sup> In the United States, the Federal and State governments used the auction process in two ways to allocate government contracts and spectrum licences<sup>45</sup> to small businesses, and firms owned by women and minority groups, such as African-Americans and Latin-Americans.<sup>46</sup> Certain contracts or licences were set aside so that only small businesses and minority-owned firms could bid for them.<sup>47</sup> Alternatively, contracts or licences were auctioned off in the normal process, but minority-owned firms obtained a handicap in terms

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<sup>36</sup> Formerly known as Burnett River Dam.

<sup>37</sup> Sunwater, *Tender Information Brochure: Water Sales from Paradise Dam (formerly Burnett River Dam)* (2006) 2, available online at: <[http://www.sunwater.com.au/burnettwater\\_watertenders\\_paradise.htm](http://www.sunwater.com.au/burnettwater_watertenders_paradise.htm)> (accessed 15 July 2006).

<sup>38</sup> Ibid.

<sup>39</sup> J McMillan 'Why auction the spectrum?' (1995) 19 *Telecommunications Policy* 191, 193; A Heaney & S Beare 'Improving Water Use Efficiency: Competitive Tendering for Public Investment' (2003) 10 *Australian Commodities* 266, 270; National Water Commission, *2005 National Competition Policy Assessment of Water Reform Progress* (2006) 2.53.

<sup>40</sup> A Heaney & S Beare 'Improving Water Use Efficiency: Competitive Tendering for Public Investment' (2003) 10 *Australian Commodities* 266, 271; C Chan, P Laplagne and D Appels, *Productivity Commission Staff Research Paper: The Role of Auctions in Allocating Public Resources* (2003) 1-2, available online at: <<http://www.pc.gov.au/research/staffres/auctions/index.html>>.

<sup>41</sup> B Simon & D Anderson 'Water Auctions as an Allocation Mechanism in Victoria, Australia' (1990) 26 *Water Resources Bulletin* 387, 393.

<sup>42</sup> Ibid, for example, pasture production.

<sup>43</sup> Ibid.

<sup>44</sup> J McMillan 'Why auction the spectrum?' (1995) 19 *Telecommunications Policy* 191, 194.

<sup>45</sup> A spectrum licence gives the licence holder the right to use the electromagnetic spectrum to broadcast and set up telecommunication systems, J McMillan, 'Why auction the spectrum?' (1995) 19 *Telecommunications Policy* 191, 191.

<sup>46</sup> J McMillan 'Using Markets to Help Solve Public Problems' (2003) 15-16, available online at: <<http://iis-db.stanford.edu/pubs/20271/Mcmillan.pdf>>; J McMillan 'Why auction the spectrum?' (1995) 19 *Telecommunications Policy* 191, 194.

<sup>47</sup> Ibid.

of price.<sup>48</sup> In the early 1990s, firms owned by women and minority groups were given a 10 percent price preference in bidding for government contracts.<sup>49</sup> Similarly, minority-owned firms were offered up to a 40 percent preference in spectrum licence auctions.<sup>50</sup> This gave minority-owned firms the boost they needed to establish themselves in the industry.

It may be feasible for the Commission to adopt similar auction processes to ensure that those who cannot submit top bids for water licences are not pushed out of the market. For example, the Minister may, in making allocation decisions during the planning process, consider that it is necessary to provide water to ensure that some water users are not unfairly disadvantaged by the auction process. Consequently, the Minister may exercise his or her power to retain water for social equity purposes proposed in Section 1 to reserve specific licences or volumes of water for auctions to be held exclusively for smaller farmers or those with lower incomes.<sup>51</sup> The process by which applicants are determined to be eligible to participate in these auctions may be outlined in the WMP.

Indeed, water auctions have in the past been tailored to address social inequities. In the Victorian auctions held in the late 1980s, potential auction participants were concerned by their ability to compete for water allocations with large corporate farming entities.<sup>52</sup> To address this issue, the Goulburn-Broken River auctions separated the total volume of water to be auctioned into 'stages' or minimum purchases as follows:<sup>53</sup>

**Table 1: Minimum purchases per stage**

Stage Number	Minimum Purchase (ML)
1	1
2	10
3	25
4	50
5	75
6	100
7	200

<sup>48</sup> Ibid.

<sup>49</sup> J McMillan 'Using Markets to Help Solve Public Problems' (2003) 16, available online at: <<http://is-db.stanford.edu/pubs/20271/Mcmillan.pdf>>.

<sup>50</sup> J McMillan 'Why auction the spectrum?' (1995) 19 *Telecommunications Policy* 191, 194.

<sup>51</sup> See Part I, Section 1 [1.2.4](b) for a discussion on the power to reserve for social equity purposes.

<sup>52</sup> B Simon and D Anderson, 'Water Auctions as an Allocation Mechanism in Victoria, Australia' (1990) 26 *Water Resources Bulletin (American Water Resources Association)* 387, 391.

<sup>53</sup> Ibid.

Bidders in Stage 1 were required to purchase at least 1 mega-litre, and no more than the maximum volume registered for.<sup>54</sup> This prevented irrigators who wanted larger allocations from participating in that particular stage.

Alternatively, all bidders may be required to participate in the same auction process. However, prospective water users who are able to demonstrate some financial hardship<sup>55</sup> may be offered a percentage handicap in the submission of bids. If their bid is within a certain percentage of the highest bid, then the bidder with the handicap will be awarded the water licence.

### 3.3.2 *Tender*

#### (a) *What is a tender?*

Under a tender system, the prospective water user is required to submit a tender detailing how they intend to use the resource,<sup>56</sup> and other reasons why that tender should succeed. Guidelines established to govern the tender process stipulate a set of criteria that the applicant is required to give information about.<sup>57</sup> The tender would also be accompanied by a monetary bid which would be relevant, but not determinative, in ascertaining the successful applicant. It is likely that the monetary bid would need to exceed a 'reserve price' before the application would be considered to ensure that the government was appropriately compensated for the water.<sup>58</sup> The tenders would then be assessed according to assessment criteria by a board or panel of judges. The tender, or tenders, that were on their merits the best would receive the water licence.

Queensland has adopted the tender system for allocating water. Although the authority to grant unallocated water by tender is contained in the statute, the tender process is specified in a resource operations plan.<sup>59</sup> An invitation to tender is sent to persons who have registered their interest in unallocated water.<sup>60</sup> The invitation must specify:

- (a) the management area and the [aquifer] in which the water is available;
- (b) the maximum volume of water ... available to be granted;
- (c) special conditions that may be applicable to water licence(s) if granted;
- (d) criteria for assessment of tender bids; and
- (e) any other [necessary] details.<sup>61</sup>

A reserve price per mega-litre is determined prior to tender.<sup>62</sup> Each tender is assessed according to the criteria for assessment stipulated in the invitation.<sup>63</sup> All applicants are advised of the outcome of the tender.<sup>64</sup>

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<sup>54</sup> Ibid.

<sup>55</sup> For example, through an income test.

<sup>56</sup> C Chan, P Laplagne and D Appels, *Productivity Commission Staff Research Paper: The Role of Auctions in Allocating Public Resources* (2003) 7.

<sup>57</sup> Natural Resource Management Standing Committee, *A National Approach to Water Trading* (2002) para 7.3.

<sup>58</sup> A Heaney & S Beare 'Improving Water Use Efficiency: Competitive Tendering for Public Investment' (2003) 10 *Australian Commodities* 266, 272.

<sup>59</sup> Section 46(2)(e) and Sched 4 *Water Act 2000* (Qld).

<sup>60</sup> Department of Natural Resources, Mines and Water, *Great Artesian Basin draft resource operations plan* (2006) s 26(1), available online at: < <http://www.nrm.qld.gov.au/wrp/gab.html>> (accessed 8 August 2006). Registration of interest is pursuant to s 15.

<sup>61</sup> Ibid, s 26(2).

<sup>62</sup> Ibid, s 26(4).



**(b) Addressing social inequities**

The tender process also has the advantage of being flexible. The Commission, as the vendor and regulator, has the ability to impose its own assessment criteria. Consequently, the Commission may be able to use the tender process to address public policy goals such as ensuring social equity. Applicants may be required to provide information about a business plan, water use efficiency and recycling, and the intended use. This ensures that water is allocated to its highest value use, achieving allocative efficiency. Although questions may arise as to whether it is possible to objectively determine what is a high value use or a viable business plan, the courts have indicated that these can be objectively assessed.<sup>65</sup>

Several studies conducted around Australia by Syme have indicated that allocation methods which took into account whether water would be used efficiently were considered to be 'fair' and 'equitable'.<sup>66</sup> Allocation mechanisms based on the market alone were not considered to be 'fair'.<sup>67</sup> Thus, the ability of the tender process to take into account considerations other than price may contribute to a more equitable allocation system.

All applicants may, therefore, be required to participate in the same tender process and submit tenders on the basis of the same criteria. However, the guidelines could give applicants who are able to demonstrate some financial hardship a percentage handicap, as adopted by the auction process. Alternatively, a nominal sum may be paid, or the requirement of a monetary bid waived altogether. Consequently, financially disadvantaged applicants who are otherwise able to demonstrate that they fulfil other criteria will still be granted a water allocation.

It should be noted, however, that the tender process involves substantially more costs than other allocation methods.<sup>68</sup> The government may need to hold information sessions to educate potential applicants about the tender process, and appoint a board of experts to assess the tenders.<sup>69</sup> Applicants will also incur *ex ante* transaction costs, which are the costs involved in preparing a tender.<sup>70</sup> These costs may deter potential applicants from participating, in particular those who are already struggling to meet the monetary portion of the tender.

**3.3.3 Private treaty<sup>71</sup>**

A private treaty refers to the sale of a good through seller and buyer negotiation.<sup>72</sup> This would involve the Commission negotiating the sale of a water licence with a potential buyer on a one-on-

<sup>63</sup> Ibid, s 27(1)&(2).

<sup>64</sup> Ibid, s 28(1).

<sup>65</sup> See, for example, *Elandes Nominees Pty Ltd v Minister for Water Resources* [2002] SAERDC 130 paras 7 & 20.

<sup>66</sup> G J Syme and B E Nancarrow 'The determinants of perceptions of fairness in the allocation of water to multiple uses' (1997) 33 *Water Resources Research* 2143, 2148, 2150-2151; G J Syme, B E Nancarrow and J A McCreddin 'Defining the components of fairness in the allocation of water to environmental and human uses' (1999) 57 *Journal of Environmental Management* 51, 56, 67.

<sup>67</sup> G J Syme, B E Nancarrow and J A McCreddin 'Defining the components of fairness in the allocation of water to environmental and human uses' (1999) 57 *Journal of Environmental Management* 51, 56, 67.

<sup>68</sup> C Chan, P Laplagne and D Appels, *Productivity Commission Staff Research Paper: The Role of Auctions in Allocating Public Resources* (2003) 7.

<sup>69</sup> A Heaney & S Beare 'Improving Water Use Efficiency: Competitive Tendering for Public Investment' (2003) 10 *Australian Commodities* 266, 271.

<sup>70</sup> U Latacz-Lohmann and C Van der Hamsvoort 'Auctions as a Means of Creating a Market for Public Goods from Agriculture' (1998) 49 *Journal of Agricultural Economics* 334, 343.

<sup>71</sup> Also known as sale by negotiation. For more discussion about negotiations, see further: J Bulow and P Klemperer 'Auctions Versus Negotiations' (1996) 86 *American Economic Review* 180.

one basis. Whilst it may be perceived that this method can be used to address social equity objectives in relation to individual applicants, it is unlikely that sale by private treaty will be adopted. The government is placed in a weaker bargaining position as it is prevented from comparing competing 'bids', as the allocation choice is restricted to a single buyer at any stage of the negotiation.<sup>73</sup> Further, the private nature of negotiations is unlikely to be perceived to be publicly legitimate or fair, as it lacks transparency and leaves the process open to corruption.

### 3.3.4 *At a premium*

The RiWI Act also provides for licences to be issued by agreement for a premium.<sup>74</sup> Although no licences have been issued under this provision, it is anticipated that the premium would be set at the market value of the entitlement.<sup>75</sup>

The Queensland government has adopted a similar method as part of its allocation process. The chief executive<sup>76</sup> may decide to allocate water by the 'fixed price method', and publicly invite applications for a water licence for available water.<sup>77</sup> The invitation specifies the price of the water licence.<sup>78</sup>

The difficulty with this allocation method is that in the absence of a market system, the Commission cannot determine confidently the price at which water licences should be issued. However, as the aim of this method is to issue licences close to the market value, this method is not appropriate for addressing social-equity issues which generally relate to the inability of potential water users to pay for a water licence.

## 3.4 Implementation in Western Australia

It is evident that some market-based allocation methods, such as the auction and tender processes, can be adapted to accommodate social equity requirements. However, the Commission, as the regulator and vendor, should have the authority to employ these allocation methods, and the discretion to determine how these methods are to operate. This discretion is particularly important if the Commission is to achieve specific public policy objectives such as equitable water allocation, and provision to meet social equity needs.

The RiWI Act authorises WMPs to set out 'how rights in respect of water are to be allocated' to meet various needs.<sup>79</sup> Accordingly, the Commission already has the discretion to set out the rules by which water can be allocated in the WMPs. However, it appears that the RiWI Act only

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<sup>72</sup> R Cassidy Jr, *Exchange by Private Treaty* (1974) 3.

<sup>73</sup> C Chan, P Laplagne and D Appels, *Productivity Commission Staff Research Paper: The Role of Auctions in Allocating Public Resources* (2003) 8. For other disadvantages of sale by private treaty, see: J Bulow and P Klemperer 'Auctions Versus Negotiations' (1996) 86 *American Economic Review* 180, 180, 190.

<sup>74</sup> Schedule 1, cl 40(2)(b) RiWI Act 1914 (WA).

<sup>75</sup> Based on email communication from Roderic Banyard from the Department of Water to Vivian Chung, 10 August 2006.

<sup>76</sup> The 'chief executive' is the chief executive officer of the department responsible for administering the *Water Act 2000* (Qld), Department of Natural Resources, Mines and Water, *Great Artesian Basin draft resource operations plan* (2006) s 24.

<sup>77</sup> Department of Natural Resources, Mines and Water, *Great Artesian Basin draft resource operations plan* (2006) s 222(1).

<sup>78</sup> *Ibid*, s 222(2).

<sup>79</sup> Sections 26GX(2)(b) and 26GY(2)(a) RiWI Act 1914 (WA).

empowers the Commission to *transfer* licences by auction, tender or private treaty.<sup>80</sup> There is no power to *grant* water licences in the same way.<sup>81</sup>

This can be contrasted to the position in other States. In Queensland, the *Water Act 2000* (Qld) expressly authorises unallocated water to be granted by way of public auction, tender or ballot.<sup>82</sup> In New South Wales the Minister has the power to declare that a water access licence is to be 'acquired by auction, tender or other means specified in the order'.<sup>83</sup> Similar provisions appear in the Victorian<sup>84</sup> and South Australian statutes.<sup>85</sup> The RiWI Act should therefore be amended to authorise the Commission to grant unallocated water by way of auction, tender, or other suitable means. Once this power is included in the RiWI Act, the Commission is able to set out the rules by which any or all of these allocation methods are to operate by in the WMPs.

The Commission should also be given the discretion in the WMPs to choose which allocation method should be adopted to allocate available water. Under Queensland's resource operations plans, the chief executive has the discretion to determine which allocation method should be employed to grant unallocated water.<sup>86</sup> This flexibility for the Commission is important as different allocation methods may be suited to different contexts. Western Australia's water resources are all at different levels of allocation; some areas like Gngangara Mound and Collie Groundwater Basin are already at full-allocation, whereas others are still largely underdeveloped.<sup>87</sup>

Accordingly, the WMP may prescribe different allocation methods to be applied at different stages of allocation. If a water resource is underdeveloped, demand for water may not be sufficient to warrant the use of a market-based mechanism. Water may continue to be allocated according to the traditional policy of first-come, first served at zero cost to encourage growth and development in the area. However, when the level of allocation reaches a certain stage, such as 70 percent allocated, the WMP could stipulate that the Commission is required to allocate water through a market-based mechanism. Queensland's resource operations plans provide for two methods for granting unallocated water: by tender or at a premium. The plan permits the chief executive to choose which method to adopt.<sup>88</sup>

#### 4. ALLOCATION OF NEW WATER ACCESS ENTITLEMENTS

##### 4.1 The New System

The WA government has announced its intention to change the water entitlement system,<sup>89</sup> which will see water licences being replaced with water access entitlements. Water access entitlements will be of greater value than their predecessor, as they are to be perpetual and separate from any legal right to land, and should therefore be more easily tradeable. Consequently, a significant

<sup>80</sup> Schedule 1, cl 41(3) RiWI Act 1914 (WA).

<sup>81</sup> Schedule 1, cl 40 RiWI Act 1914 (WA) only refers to the Commission entering into an agreement to grant licences. It does not authorise the use of other allocation methods to grant water licences.

<sup>82</sup> Sections 46(2), 212, Sched 4 *Water Act 2000* (Qld).

<sup>83</sup> Section 65(1) *Water Management Act 2000* (NSW).

<sup>84</sup> Sections 33P, 47D, 57 *Water Act 1989* (Vic).

<sup>85</sup> Section 151(4) *Natural Resources Management Act 2004* (SA).

<sup>86</sup> Department of Natural Resources, Mines and Water, *Great Artesian Basin draft resource operations plan* (2006) s 16(1).

<sup>87</sup> Dr John Marsden, *Water Entitlements, Water Plans & Trading for Western Australia* (2006) 68.

<sup>88</sup> Department of Natural Resources, Mines and Water, *Great Artesian Basin draft resource operations plan* (2006) s 16(1).

<sup>89</sup> Water Reform Implementation Committee 2006, *A blueprint for water reform in Western Australia: Final advice to the Western Australian Government*, Perth, WA, 19.

allocation issue facing the State is the basis on which new entitlements should be allocated to existing licence holders.

More importantly, the issue is how water access entitlements can be allocated in an equitable manner as between existing licence holders. Is the policy of honouring existing licences equitable in light of the likely increased value of the new entitlements? Given the trend of other Australian jurisdictions, it is likely that legal entitlements will be honoured in the transition to the new entitlement system.

Currently, water users hold a water licence, giving them the right to access water and to a water allocation. Under the new system, water users will receive a 'water access entitlement', which is defined as a 'perpetual or ongoing entitlement to exclusive access to a share of water from a specified consumptive pool as defined in the relevant water plan'.<sup>90</sup> A specified volume of water is then allocated periodically to the water access entitlement.<sup>91</sup>

Water access entitlements will also be separated from land and administered under an enhanced accounting and title registration system, allowing entitlements to be more easily traded, leased or subject to encumbrances.<sup>92</sup> However, the question of how water access entitlements will be issued is significant, especially in areas where the water source is nearing, or at, full-allocation. Two approaches have been utilised by other States:

- honouring existing use; or
- honouring legal entitlements.

However, there are some WA landowners who have supported the idea of redistributing all water rights prior to the introduction of the new entitlement system.<sup>93</sup>

#### 4.1.1 'Existing use'

In 1997, the South Australian government passed the *Water Resources Act 1997* (SA).<sup>94</sup> One of the purposes of the *Water Resources Act* was to progressively declare regions in the state to be 'prescribed areas'. Consequently, existing water users in a prescribed area were required to apply for a licence to take water within a certain time frame, with the exception of water for domestic or stock purposes.<sup>95</sup> Once a region is prescribed, there is a duty to prepare a water allocation plan for that area.<sup>96</sup>

Under the South Australian legislation, an 'existing user' of water from a prescribed area is entitled to apply for a water licence within six months of the resource being prescribed,<sup>97</sup> and have

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<sup>90</sup> See para 28 of the NWI and Water Reform Implementation Committee, *A Draft Blueprint for Water Reform in Western Australia* (2006) 16.

<sup>91</sup> Ibid, see para 29 of the NWI and Water Reform Implementation Committee, *A Draft Blueprint for Water Reform in Western Australia* (2006) 16.

<sup>92</sup> Dr John Marsden, *Water Entitlements, Water Plans & Trading for Western Australia* (2006) 9, 47.

<sup>93</sup> Natural Resource Management Standing Committee, *A National Approach to Water Trading* (2002) 1.13.

<sup>94</sup> The relevant provisions of the *Water Resources Act 1997* (SA) have been replaced by the *Natural Resources Management Act 2004* (SA).

<sup>95</sup> Section 124(4) *Natural Resources Management Act 2004* (SA).

<sup>96</sup> Ibid, s 76(1).

<sup>97</sup> Water users who did not apply within six months lost their right to apply for a water taking licence under s 36(1) & (2) *Water Resources Act 1997* (SA), now replaced by s 155(1) & (2) *Natural Resources Management Act 2004* (SA).

a water taking allocation endorsed on the licence without the payment of a purchase price.<sup>98</sup> An applicant is an 'existing user' if the person:

- (a) took water from the resource at any time before the water source was prescribed;<sup>99</sup> or
- (b) can establish that they need water for a development, project or undertaking that they are legally committed to, or that they have committed significant financial or other resources to.<sup>100</sup>

According to *Minister for Environment & Conservation v Wylie Group Pty Ltd*,<sup>101</sup> a person is 'legally committed' if they have an obligation to complete a project due to a legal liability attaching to the failure to do so. Similarly, a person is taken to have 'committed significant financial or other resources' if they are likely to be irrecoverable, or irretrievable, if the project is not completed.<sup>102</sup>

Note, however, that the South Australian approach of honouring existing use applied in unlicensed areas that were prescribed for licensing. In contrast, WA is moving from one licensed system to another.

#### 4.1.2 'Legal entitlements'

The State may alternatively honour all those with an existing licence. This is the system adopted in New South Wales. Upon the proclamation of a water source,<sup>103</sup> an existing entitlement is taken to be replaced by an access licence.<sup>104</sup> The legislation also permits a reduction in the quantity of water that the holder of a replaced licence is allowed to take if the relevant management plan so provides.<sup>105</sup>

A major concern with adopting this regime is the risk of triggering sleeper licences (sleepers). Sleepers are licensed entitlements which have not been used.<sup>106</sup> As entitlements will become tradeable under WA's new entitlement system, those who hold sleepers may be encouraged to sell them for profit. Although many States have permitted trade in sleepers,<sup>107</sup> it may endanger water sources by pushing extraction levels over the sustainable limit, and threaten surrounding water users' supplies. A review of the Murray-Darling Basin Commission (MDBC) Pilot Interstate Trading Project indicated that 99 percent of water traded originated from sleepers.<sup>108</sup> However, as

<sup>98</sup> Section 36(1) & (2) *Water Resources Act 1997* (SA) now replaced by s 155 (1) & (2) of the *Natural Resources Management Act 2004* (SA).

<sup>99</sup> Section 36(10) *Water Resources Act 1997* (SA); s 155(10) *Natural Resources Management Act 2004* (SA).

<sup>100</sup> Section 36(10) *Water Resources Act 1997* (SA); s 155(10) *Natural Resources Management Act 2004* (SA); *Minister for Environment & Conservation v Wylie Group Pty Ltd* (2005) 91 SASR 242.

<sup>101</sup> *Minister for Environment & Conservation v Wylie Group Pty Ltd* [2005] SASC 127 Doyle CJ, Vanstone and White JJ concurring, para 55.

<sup>102</sup> *Ibid*, paras 75-79.

<sup>103</sup> Section 55A *Water Management Act 2000* (NSW).

<sup>104</sup> Schedule 10, cl 3(1) *Water Management Act 2000* (NSW).

<sup>105</sup> *Ibid*, Sched 10, cl 3(3).

<sup>106</sup> WA Water and Rivers Commission, *Statewide Policy No 6 Transferable (Tradeable) Water Entitlements for Western Australia 2001 5*, available online at: <<http://portal.environment.wa.gov.au>> (accessed on: 11 July 2006); A Pye, 'Water trading along the Murray: A South Australian Perspective' (2006) 23 EPLJ 131, 137.

<sup>107</sup> A Pye, 'Water trading along the Murray: A South Australian Perspective' (2006) 23 EPLJ 131, 137.

<sup>108</sup> The MDBC Pilot was aimed at expanding trade between States, see: M Young, D H MacDonald, R Stringer & H Bjornlund (for CSIRO Land & Water), *Interstate Water Trading: A Two Year Review*

total extraction cannot exceed the 1994 level of development under the MDBC Cap, all irrigators have had their annual allocations reduced due to the activation of sleepers.<sup>109</sup> Existing irrigators who have been forced into buying water from those who may have never used their allocations regard the sale of sleepers as an inequitable redistribution of income.<sup>110</sup> According to Pye, permitting trade in sleepers ignores the fact that many systems were historically over-allocated because it was assumed that a reasonable proportion of licences would not be activated.<sup>111</sup>

#### **4.1.3 Redistribution of water rights**

According to the Natural Resource Management Standing Committee, some landowners in WA perceive the notion of honouring existing legal entitlements as altogether inequitable.<sup>112</sup> Rather, they have called for a redistribution of all water rights prior to the introduction of a market-based allocation system.<sup>113</sup> This is because all existing licence holders, and not only holders of sleepers, will essentially obtain a windfall capital gain once licences are replaced with access entitlements, as licence holders will obtain a valuable property right at zero cost. As access entitlements are tradeable, existing licence holders can realise a substantial monetary gain on the market. In contrast, under the new system, those who need water must purchase it from an entitlement holder who is willing to sell. This results in a windfall gain by the existing licence holder who did not have to pay for the initial allocation.

However, although it is recognised that all existing licence holders will essentially obtain a windfall gain from the introduction of tradeable entitlements, it is doubtful that the State government will redistribute existing water rights. There has been no legal precedent for doing so in any other Australian jurisdiction: New South Wales and Victoria have honoured existing legal entitlements, whereas South Australia has honoured existing use.<sup>114</sup>

#### **4.1.4 Applicability to Western Australia**

It has been proposed that WA should honour existing licences. According to the Water Reform Implementation Committee, as WMPs are finalised, 'existing water licences in a plan area will be replaced by water access entitlements'.<sup>115</sup> Where no WMP is in place, the existing licensing regime will remain.<sup>116</sup> While it is anticipated that each water access entitlement will have the same nominal volume as the existing licence, the WA government's intention is still unclear. If the government chooses to honour legal entitlements, can WA learn from the South Australian system

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(2000) 3 & 22, available online at: <[http://www.mdbc.gov.au/nrm/water\\_management](http://www.mdbc.gov.au/nrm/water_management)> (accessed 16 September 2006); A Pye, 'Water trading along the Murray: A South Australian Perspective' (2006) 23 EPLJ 131, 138.

<sup>109</sup> J McKay & H Bjornlund 'Recent Australian Market Mechanisms as a Component of an Environmental Policy that Can Make Choices Between Sustainability and Social Justice' (2001) 14 *Social Justice Research* 387, 396.

<sup>110</sup> Ibid.

<sup>111</sup> A Pye, 'Water trading along the Murray: A South Australian Perspective' (2006) 23 EPLJ 131, 137; M D Young & J C McColl, 'Robust Reform: The Case for a New Water Entitlement System for Australia' (2003) 36 *The Australian Economic Review* 225, 228.

<sup>112</sup> Natural Resource Management Standing Committee, *A National Approach to Water Trading* (2002) 1.13.

<sup>113</sup> Ibid.

<sup>114</sup> Note that there is also a question as to whether there is a legal basis for calling back existing entitlements, but this is outside the scope of this paper.

<sup>115</sup> Water Reform Implementation Committee, *A Draft Blueprint for Water Reform in Western Australia* (2006) 3 (Note that this is not a statement of WA Government policy).

<sup>116</sup> Ibid.

to create a more equitable system of allocation? And how does WA deal with the problem of sleeper licences?

**(a) Honouring existing use**

If legal entitlements are honoured, should the nominal volumetric entitlement on the existing licence also be honoured if the licensee is regularly taking less than its volumetric entitlement? There is a strong argument that it would be inequitable to allow a person who did not need the water to retain it. Indeed, a licensee who is permitted to hold onto more than their existing use obtains a windfall gain as it may be traded. Consequently, the government should honour legal entitlements to the extent of their existing use. The South Australian criteria of determining existing use may, in these circumstances, be adopted to determine the new volumetric entitlement. Honouring existing use would also assist with reducing extraction back to sustainable levels.

**(b) Sleeper licences**

If legal entitlements are honoured, sleeper licences should not be tradeable. The fact that they have not been activated indicates the low value of the licence to the licensee. Licensees who sell sleepers not only obtain a windfall gain, but also exacerbate over-allocation problems.<sup>117</sup> In contrast, licensees who genuinely need water may find their allocations reduced either by the hydrological constraints of the water resource, or by limits imposed by government regulators. A system that allows the trade of sleepers is neither equitable nor fair.

Under Commission Policy, in the transition to the new entitlement system, sleepers will not be tradeable.<sup>118</sup> The RiWI Act provides the Commission with the power to amend a licence if the quantity of water that may be taken under the licence has consistently not been taken.<sup>119</sup> If the licensee cannot establish a continuing requirement for the entire entitlement, the Commission may recoup the entitlement not being utilised and amend the licence to reflect actual use.<sup>120</sup> The policy's intention is to ensure that allocated water is used effectively and that use is fair and equitable.<sup>121</sup> This also ensures that licence applicants are not unreasonably constrained in obtaining a water entitlement by those with sleeper licences.<sup>122</sup>

## PART II – CONCLUSION

There is no doubt that to achieve the sustainable use, efficient allocation and equitable apportionment of water will be a challenging task for WA legislators. Indeed, it is recognised that these three objectives of water allocation can, to an extent, conflict with each other.<sup>123</sup> This paper

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<sup>117</sup> J Freebairn, 'Principles for the Allocation of Scarce Water' (2003) 36 *The Australian Economic Review* 203, 209.

<sup>118</sup> WA Water and Rivers Commission, *Statewide Policy No 6 Transferable (Tradeable) Water Entitlements for Western Australia 2001* 5, available online at: <<http://portal.environment.wa.gov.au>> (accessed on: 11 July 2006).

<sup>119</sup> Schedule 1, cl 24(2)(d) RiWI Act 1914 (WA).

<sup>120</sup> WA Water and Rivers Commission, *Statewide Policy No 11 Management of Unused Licensed Water Entitlements 2003* 1, available online at: <<http://portal.environment.wa.gov.au>>; see also *More v Water and Rivers Commission* [2006] WASAT 112, para 15.

<sup>121</sup> WA Water and Rivers Commission, *Statewide Policy No 11 Management of Unused Licensed Water Entitlements 2003* 1.

<sup>122</sup> *Ibid*, 4.

<sup>123</sup> J McKay and H Bjornlund 'Recent Australian Market Mechanisms as a Component of an Environmental Policy That Can Make Choices Between Sustainability and Social Justice' (2001) 14 *Social Justice Research* 387, 393.

demonstrates, however, that it is possible for legislators to accommodate all three goals in the allocation process.

Section 1 established that it was important to incorporate a duty to consider social equity requirements during the water management planning process in the RIWI Act. It argued that powers authorising the Commission to make provision for social-equity needs are necessary to ensure equitable water allocation. Section 1 also highlighted the need for the legislation to protect basic rights to water for domestic, ordinary, or stock purposes.

Section 2 examined the mechanisms that could be employed to correct over-allocated water resources. It argued that in addressing over-allocation, protection had to be provided for basic water rights. It is also important to ensure that reductions in water entitlements occur on an equitable basis. However, although it was acknowledged that some licensees would suffer serious financial hardship due to reduced allocations, there is no legal basis for compensation. Indeed, most States have denied compensation for reductions in water entitlements. Rather, the consensus seems that the appropriate solution is to provide assistance in the form of structural adjustment packages.<sup>124</sup>

Section 3 acknowledged WA's obligation to adopt a new, market-based mechanism to release unallocated water. Although the auction and tender processes may generally be employed to achieve allocative efficiency, the flexible nature of these processes shows the potential for these mechanisms to be employed to achieve social equity objectives. Section 3 also demonstrated how the powers proposed in Section 1 to reserve water for social equity purposes in WMPs could be employed in the auction and tender processes.

Section 4 examined the new water access entitlement system and discussed how the government may choose to allocate the new water access entitlements between existing licensees. Given that water access entitlements will of greater value than their predecessor, it questioned the policy of honouring existing licences. Instead, it offered alternative ways in which a more equitable allocation of water access entitlements could be made.

This paper has therefore demonstrated that an adequate balance can be struck between the three main objectives of an allocation system. The increasing scarcity of water coupled with rapidly rising demand has placed excessive pressures on our water resources, prompting water reformists and legislators to shift their attention to the objectives of securing the sustainable and economically efficient use of water. This focus on achieving sustainability and efficiency, however, does not mean that these goals take precedence over the equitable allocation of water. Rather, ensuring equitable allocation of water has, for a long time, been the fundamental principle guiding water allocation.<sup>125</sup> Accordingly, while the principles of sustainable use and efficient allocation are important, achieving these goals should, and can, be carried out in an equitable manner.

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<sup>124</sup> J C McColl and M D Young, *Managing Change: Australian structural adjustment lessons for water* (2005) iii; Natural Resource Management Standing Committee, *Managing Over-allocated Groundwater Systems* (2002) para 3.13.

<sup>125</sup> See, for example, *Water Conservation and Irrigation Commission v New South Wales Pastoral Company Ltd* (1945) 24 NSW LVR 54, Roper J 56.