

# **Pricing Water for Environmental Externalities in Western Australia**

**A Report to the State Water Strategy Group**

**Department of Premier and Cabinet**

By

Alex Gardner, Senior Lecturer, UWA Law School

& Vivian Chung, LLB Student, Research Assistant, UWA

In association with the Environmental Defenders Office (WA)

## **Table of Contents**

Introduction.....	1
1. “Environmental Externalities” & the NWI Pricing Principles .....	2
1.1. Defining “Environmental Externalities”: Community Loss from Water Use .....	2
1.2. National Water Policy on Pricing .....	3
2. Techniques of Pricing for Environmental Externalities .....	5
2.1. General Comments from the Literature .....	5
2.2. Economic Regulation Authority – Draft Report.....	7
2.2.1. Water Resource Management Costs .....	7
2.2.2. Costs of Repairing Environmental Damage .....	7
2.2.3. Internalizing other Environmental Costs: Scarcity Value .....	8
3. Law of Water Pricing in Western Australia.....	9
3.1. Water Access Licence Fees and Charges.....	10
3.2. Rates and Charges to Consumers.....	12
3.2.1. The Rating Powers .....	13
3.2.2. Water Corporation Customers .....	14
3.2.3. Irrigation Co-operatives .....	14
3.3. Application of Environmental Externalities Funds.....	15
Conclusion .....	16

## **INTRODUCTION**

The principal purpose of this paper is to review the legal authority of the Western Australian Government to set prices for water that include the costs of environmental externality effects of water use. Although both the regulatory management of water resources by government and court actions to redress public and private wrongs in the law of torts can restrict environmental externalities, it is widely accepted that pricing water use for the environmental externality effects would contribute to the more sustainable use of water resources. This is one of the premises of the Intergovernmental Agreement on a National Water Initiative 2004 (“NWI”),<sup>1</sup> which is discussed below. Although Western Australia has not yet signed the NWI, its principles set a desirable direction for the development of Western Australian water policy generally and on water pricing. The value of the NWI policy is not diminished by the fact that there has been little systemic implementation of environmental externalities pricing so far.<sup>2</sup> Rather, this lack of experience merely highlights how much we have to learn about such pricing. The Western Australian water resources law should, therefore, authorise pricing of water for environmental externality effects.

The second purpose of the paper is to argue that pricing of water should reflect seasonal and resource based scarcity as a means of mitigating environmental externalities. In our related research paper on environmental water allocations,<sup>3</sup> we recommended “the statutory expression of the idea that an entitlement to take water is only a right to a share of the water available in a resource from year to year and not a fixed maximum volume”. The evidence of non-compliance with environmental water allocations showed that “only when authorised taking of water is determined annually for our heavily exploited water resources will the environmental water allocations be respected”. All licensed water users, including the Water Corporation supplying water through the Integrated Water Supply Scheme, should be subject to the annual ministerial determination of the share of water available to be taken from a particular resource in that year.

This paper takes that argument to the next stage: the price of water to the licensed user and, subsequently, to the customers of water suppliers should reflect the annually determined scarcity of water in the surface or ground water system from which the water is taken. Seasonal scarcity could also be reflected in the water price; water in summer could cost more. In addition, the price of water should recover the costs of water resource management and of remediating environmental harm caused by water abstraction. Water access licensees and customers of water suppliers who want high security water supply could pay more to obtain it, subject to regulatory intervention to determine allocation priorities for public policy purposes. Adverse social equity effects of higher consumer water prices could also be met by regulatory intervention to stabilize volumes of supply at lower prices for vulnerable institutions or secure supply at subsidized rates for certain communities. These forms of flexible pricing would incorporate into the price of water the costs of management that will enhance compliance with environmental water allocations and protect water dependent ecosystems.

The paper pursues these purposes in three stages:

1. the definition of “environmental externalities” and the relevant NWI principles;
2. a discussion of the techniques of pricing environmental externalities, involving a review of some of the economics literature and comments on the Economic Regulation Authority’s draft report on Urban Water Pricing; and
3. a review of the current Western Australian law of water pricing and reform suggestions.

---

<sup>1</sup> A copy of the NWI is available on the website of The Council of Australian Governments: <http://www.coag.gov.au/meetings/250604/> and on the website of the National Water Commission: <http://www.nwc.gov.au/NWI/index.cfm> .

<sup>2</sup> Darla Hatton MacDonald and Sebastien Lamontagne, “Moving from piecemeal accounting to a pragmatic economic approach to water pricing in Australia”, (2005) 5 *Land Use and Water Resources Research* 1-9, .5,

<sup>3</sup> A Gardner & V Chung, “The Law and Policy of Environmental Water Allocations in Western Australia”, September 2005.

## **1. “ENVIRONMENTAL EXTERNALITIES” & THE NWI PRICING PRINCIPLES**

### **1.1. DEFINING “ENVIRONMENTAL EXTERNALITIES”: COMMUNITY LOSS FROM WATER USE**

A stark example of the environmental externalities caused by the human exploitation of water resources is seen in the story of the South Australian River Murray fishery. The fishery was closed in 2003 to fishing from key commercial stocks of Murray cod and callop.<sup>4</sup> The decline of this more than 100 years old commercial fishery has been caused primarily by the upstream management of the Murray-Darling river system for, initially, navigation and, subsequently, agricultural irrigation and domestic and urban water supply. “River regulation” (the construction of dams and weirs and de-snagging) and the diversion of vast amounts of water from the river have blocked fish migration, destroyed critical habitat and interrupted the ecological processes essential to the breeding of the species to the point where commercial fishing in the river was not sustainable.<sup>5</sup> There are also numerous other adverse impacts on the public and private interests in the Murray River ecosystem.<sup>6</sup> Although the South Australian Government has instituted some compensation packages for the affected families, the fishers were denied compensation for the loss of value of their commercial fishing licences, as the licences were ‘defeasible’ under the applicable statute. The use of water resources by one community sector has had terrible consequences for another. The families of the South Australian River Fishery have been left aggrieved by the loss of their livelihoods and family traditions with little compensation.<sup>7</sup> The questions to be asked are whether the fishers have been adequately compensated and by whom the compensation should be paid? Has the upstream agricultural irrigation industry, in particular, paid the full price of its activities?

The experience of the South Australian River Murray fishery raises questions about whether a similar situation has occurred or could occur in Western Australia. The diversion of large amounts of water for inter-regional transfer has the potential to harm the environmental values of the water resources and catchments from which water is diverted. This has, arguably, already occurred with the Helena River (which has been dammed to supply water inland to the Wheat-belt and Goldfields), and with numerous other rivers that have their source in the hills south of Perth (which have been dammed to supply water to metropolitan and other coastal urban areas). The riverine ecosystems on the coastal plains downstream have suffered eutrophication from agricultural fertilizer use and resultant harmful algal blooms that could be mitigated, to some extent, by greater freshwater flow. It has occurred with the abstraction of water from Gnangara Mound impacting, for example, the wetlands of the region and subterranean ecosystems of the Yanchep Caves. There is undoubtedly a risk that this will occur with the proposed increased extraction of water from the South-West Yarragadee aquifer.

What is of concern here is that the water resource user is not paying the cost of the harm imposed on the public interest in the environment or on activities of other people who depend on the environment. These sorts of environmental losses are negative “environmental externalities”; that is, the unintended and uncosted adverse effects on the environment and other people of an authorized resource use. It is also possible that water resource uses can have external benefits. Darla Hatton MacDonald has described environmental externalities in the

---

<sup>4</sup> *South Australian River Fishery Association & Warrick v South Australia* [2003] SASC 174; [2003] 85 SASR 373.

<sup>5</sup> See, for example, the “Fish Factsheets” information regarding the Murray Cod published by the Murray-Darling Basin Commission: [http://www.mdbc.gov.au/naturalresources/fish/native\\_info/murrayCod.html](http://www.mdbc.gov.au/naturalresources/fish/native_info/murrayCod.html).

<sup>6</sup> Darla Hatton MacDonald and Sebastien Lamontagne, *op cit*, n 2, 3.

<sup>7</sup> The Australian Broadcasting Corporation, *The 7.30 Report*, “Murry River fishing era comes to an end”, broadcast on 23/07/2002; transcript available at <http://www.abc.net.au/7.30/content/2002/s614721.htm>.

context of the goal of achieving economic efficiency; that is, the best use of a resource using markets, given the current state of institutional relationships.<sup>8</sup>

Economic efficiency requires that prices reflect the costs of producing and delivering water including the costs imposed on others or on the environment. These latter costs are referred to as externalities in the economic and policy literatures.

This is challenging because there can be positive and negative externalities associated with the extraction, storage, regulation, distribution, use and return (or partial return of components) of water and wastewater to the environment. Externalities will relate to the biophysical impact, attributable to a human based action, which in turn have direct and indirect effects on communities. *Positive externalities* are the benefits that are external to those responsible for a particular human activity or market-based transaction. In a catchment, an example of a positive externality is the elevated water level created in large dams that benefit recreational boaters. A *negative externality* is an external cost imposed on others. In this case, there are negative externalities associated with the dam, which might include the disruption of fish migration and spawning. The impact on fish populations has a direct impact on anglers and commercial fishing as well as the indirect impact on society through the disruption of ecosystems and the potential for species to become extinct through loss of habitat. Typically negative externalities outnumber and outweigh the positive externalities in most resource use contexts.

From the legal perspective, the complexity of the economic concept of externalities is exacerbated by the uncertainty of the legal rights and obligations governing the relationship between the water resource users and the public and private interests of other people who suffer the effects of negative externalities. This issue is discussed further below. For the moment, it suffices to consider whether the impact of a resource use can be an externality if there is no rule of law that requires that the impact be restrained or those suffering loss be compensated. Alternatively, is pricing for environmental externalities to be adopted in recognition of the limitations of the legal system to apply definite rights and obligations to redress socially unacceptable impacts of resource use? We suggest that regulation plays a significant part in internalizing 3<sup>rd</sup> party environmental costs (i.e. by making the person causing the harm pay compensation or desist from the activity), but externality pricing will help us to internalize the costs of environmental harm to 3<sup>rd</sup> parties and the public interest that escapes regulation.

## **1.2. NATIONAL WATER POLICY ON PRICING**

The NWI provides that the States and Territories agree to:<sup>9</sup>

- (i) continue to manage *environmental externalities* through a range of regulatory measures (such as through setting extraction limits in water management plans and by specifying the conditions for the use of water in water use licences);
- (ii) continue to examine the feasibility of using market based mechanisms such as pricing to account for positive and negative *environmental externalities* associated with water use; and
- (iii) implement pricing that includes *externalities* where found to be feasible”. [emphasis added]

The NWI provides specifically for the recovery of environmental externality costs in the pricing of water storage and delivery<sup>10</sup> and in attributing to water access entitlement holders certain costs of planning and management.<sup>11</sup> To understand these provisions, we need to make distinctions between two sets of concepts.

First, the NWI defines the goals of achieving *lower bound* and *upper bound* pricing practices by 2006 and 2008, respectively. The NWI definitions of both of these two pricing

---

<sup>8</sup> Darla Hatton MacDonald, “The Economics of Water Use: Taking Full Account of First Use, Reuse and Return to the Environment”, CSIRO Land and Water, 2004, 5. The report is available at: <http://www.clw.csiro.au/issues/reuse/>.

<sup>9</sup> NWI para 73.

<sup>10</sup> NWI para 65; “where feasible and practical”.

<sup>11</sup> NWI paras 7 & 68.

regimes include “externalities”, but without further definition of that concept. However, according to the National Competition Council (“NCC”) in 2004:<sup>12</sup>

- “lower bound cost recovery” to include “externality costs (defined as the natural resource management costs incurred by, and attributable to, a water business)”, and
- “upper bound cost recovery” to include “externality costs (the positive and negative environmental externalities associated with water use)”.

The lower bound externality costs would include the costs of water resource management by a regulatory agency; whereas the upper bound externality costs would include those costs plus the costs (and benefits) imposed on third parties and the public interest.

To understand the recovery of lower bound externality costs incorporating water resource management costs, we need to make a second distinction between “direct” and “indirect” management costs.<sup>13</sup> The direct management costs are those that can be attributed to the water access entitlement holders because they are linked to the costs of activities or products that relate to day to day regulatory management and administration of a licensing scheme, including metering and water level monitoring pertaining to licence management. The indirect management costs are those undertaken by Government for the preparation of long term policy; such as investigation, assessment and maintenance of general data-bases. The NWI appears to anticipate that the States will seek to recover only the direct management costs from water access entitlement holders.<sup>14</sup> As will be explained below, the distinction between direct and indirect management costs may be pertinent to complying with constitutional restrictions on the types of costs State Governments may levy on water access entitlement holders.<sup>15</sup>

In summary, we repeat that the NWI signatories are obliged to recover lower bound externality costs (i.e. the direct costs of water planning and management attributable to water access entitlement holders) by 2006, and to report publicly on that cost recovery.<sup>16</sup> Further, metropolitan water pricing by NWI signatories should be set “to recover costs at a level close to (if not at) the upper bound full cost recovery” (i.e. 3<sup>rd</sup> party and public interest environmental externality costs) by 2008.<sup>17</sup>

Meanwhile, Western Australia’s obligations under the 1994 CoAG water reform agreement involve the implementation of full cost recovery, which arguably requires a level of cost recovery that falls within the lower and upper bound costs. In contrast, if Western Australia signed up to the NWI, there would be a clear obligation to include upper bound costs by 2008, but only an obligation to recover upper bound externality costs “where feasible”. Western Australia should, in any case, be aiming to move towards upper bound costs recovery by 2008, which is within the regulatory period envisaged by the Economic Regulation Authority in its draft report on Urban Water and Wastewater Pricing in March 2005.<sup>18</sup>

It is, therefore, imperative that the Western Australian Government ensures that it has the legal authority to recover the costs of environmental externalities. This is so even though it will continue to exercise its regulatory authority to minimize and mitigate the environmental

---

<sup>12</sup> NCC, 2004 National Competition Policy Assessment on water, section 1.1. The NCC says that earlier interpretations of the 1994 CoAG water reform agreement define “full cost recovery” as falling within a band of cost recovery that defined lower and upper bound pricing models: <http://www.ncc.gov.au/articleZone.asp?articleZoneID=525>.

<sup>13</sup> NWI paras 67 & 68. The concepts of direct and indirect management costs derives more from ARMCANZ, SCARM, “Allocation and Use of Groundwater: A National Framework for Improved Groundwater Management in Australia” December 1996, section 4.9, p.6

<sup>14</sup> NWI paras 67(ii) and 68.

<sup>15</sup> See section 3.1.

<sup>16</sup> NWI paras 67 & 68.

<sup>17</sup> NCC, 2004 National Competition Policy Assessment on Water, section 1.1. See also NWI para 66.

<sup>18</sup> Economic Regulation Authority, draft report on Urban Water and Wastewater Pricing, March 2005: <http://www.era.wa.gov.au/water/content/waterInquiry/default.cfm>.

externalities of water use; “such as through setting extraction limits in water management plans and by specifying the conditions for the use of water in water use licences”.<sup>19</sup> There are also adequate statutory powers to enforce these limits should they be breached or to amend them should unacceptable environmental harm occur. The State Government’s regulatory management of water resources in pursuit of the statutory objectives of the sustainable use and development of water resources and the protection of the water dependent ecosystems is important for securing a certain level of environmental protection.<sup>20</sup> However, with hindsight, we often see that those goals are not always properly achieved and that unintended environmental harm from water resource use does arise, sometimes from a failure of government to exercise its regulatory powers. This harm should be remediated. The Government can raise funds for such remediation by including the costs of environmental externalities in the price of water.

We should not overlook the role of judicial proceedings in vindication of private water rights as a mechanism for avoiding environmental externalities. There may be remnant common law rights to obtain orders that restrain or require compensation for the illegal taking or pollution of water that harms private interests.<sup>21</sup> There are also new statutory rights of action for private persons whose interests are affected by another person illegally taking water or failing to take all reasonable steps to minimize the degradation of water resources.<sup>22</sup> It is implicit that these new statutory rights also entitle the complainant to orders that restrain or require compensation for the illegal activity. Such legal proceedings would be a means of internalising the costs of the adverse impacts of illegal water use on private persons. However, the transaction costs of judicial proceedings are often a significant deterrent for private persons, especially in the face of the gradual accretion of environmental harm caused by the cumulative effects of numerous people over large areas. Judicial proceedings are not always an efficient means of internalizing the costs of environmental externalities. Pricing techniques may be more effective.

## **2. TECHNIQUES OF PRICING FOR ENVIRONMENTAL EXTERNALITIES**

We discuss here some ideas from the economics literature on techniques of pricing water for environmental externalities and then comment on relevant aspects of the Economic Regulation Authority’s (“ERA”) draft report on Urban Water and Wastewater Pricing.

### **2.1. GENERAL COMMENTS FROM THE LITERATURE**

There is a growing body of literature on the pricing of water for environmental externalities, but we did not have the time to review all of it in preparing this paper. Nevertheless, we wish to make a four key points from our review of the work of Darla Hatton MacDonald and comment briefly on the recovery of economic rent associated with water use.

First, Hatton MacDonald explains that water can be priced directly or indirectly.<sup>23</sup>

Direct pricing involves the setting of prices and charges payable by those who use, reuse and dispose of water. Indirect pricing relies on a variety of mechanisms that reveal the cost of using [water] and associated resources. For instance, the development of a full suite of tradeable property rights to extract, use and return water to the environment will result in markets for tradeable permits sending signals about conservation and the value of the resources. Considerable investments in

---

<sup>19</sup> NWI, supra n 1, para 73(i).

<sup>20</sup> Department of Environment, “Water Resource Management in Western Australia: Submission on the Economic Regulation Authority Draft Report, Inquiry on Urban Water and Wastewater Pricing”, May 2005. See also, *Rights in Water and Irrigation Act 1914* (WA) s4(1)(a).

<sup>21</sup> See A Gardner, “Water Resources Law Reform in Western Australia – Implementing the CoAG Water Reforms”, (2002) 19 EPLJ 6 at 12 – 14.

<sup>22</sup> *Rights in Water and Irrigation Act 1914* (WA) s5E. See also A Gardner, *ibid*.

<sup>23</sup> Darla Hatton MacDonald, supra n 8, 6.

## Pricing Water for Environmental Externalities, by Alex Gardner & Vivian Chung

institutions, research and political capital are required to set up fully-fledged tradeable property right systems.

Direct pricing would, at least, be administratively applied where there is not an established market in water because, for instance, the sustainable yield is not properly determined to define the scarcity of the resource and / or the market institutions are not well enough established to facilitate trade. However, if the water resource is well understood so that it is feasible to define and enforce the water scarcity for a period of a year or a few years, and the market institutions for water trading are well established, then the market should determine the price that reflects the water scarcity and internalizes the cost of the environmental externalities that are within the regulatory limits on the available resource. In Western Australia, presently, there is not a well established market in water with clearly defined and enforced water scarcity so direct pricing would be appropriate.

Secondly, Hatton MacDonald notes that most States are moving to two part water tariffs (with fixed and volumetric charges) and that this results in a decrease in overall water consumption and sends signals to consumers that water is not an unlimited resource. Further, the two part price structure can be adapted to incorporate fixed and volume-related externalities, though it is not entirely clear how one ascertains whether an externality is fixed or volume related. For example, Hatton MacDonald suggests that the costs of research and monitoring environmental impacts do not vary in the short term and should be incorporated in the fixed charge. The ERA appears to have adopted this view with its recommendation that “[c]onsideration should be given to recovering resource management costs with a fixed charge rather than a volumetric charge. A usage charge would only be appropriate if a significant proportion of costs vary with the amount of water supplied.”<sup>24</sup> On the other hand, the Department of Environment says that resource management costs increase rapidly as the marginal complexity increases, and the complexity increases as the sustainable limit is approached, especially in times of severe drought and the need to administer restrictions. In the Department’s opinion, “charges should meet the cost of management”.<sup>25</sup> We agree. The price of water should be set to recover the higher costs of managing water resources in circumstances (times and places) of scarcity. This suggests that the price of water to recover management costs should be calculated against the volumetric units of abstraction and variable according to the circumstances of scarcity.

Further, Hatton MacDonald suggests that the first step to developing a set of externality charges “would include an examination and categorization of all the unintended impacts associated with the various steps in the hydrological cycle and the construction of databases necessary to facilitate ... [the charges’] introduction”; for example, the introduction of meters or means to measure or approximate impacts.<sup>26</sup> The volumetric externality charge should account for the incremental costs to the environment of each additional unit of water extracted and supplied, and might be varied according to the condition of the source and the climatic variation annually or seasonally. The revenue from the charges could be placed in an environmental account or in consolidated revenue and the funds used to undertake longer term infrastructure upgrades for mitigating the environmental harm or to buy water for the environment.

Thirdly, Hatton MacDonald suggests that the externality charges should be applied to the full water cycle: the first use of potable water, re-use, and return to the environment. Similarly, it is suggested that price for re-use water and sewerage (return to the environment) should be structured as two part tariffs.

Fourthly, theories about economic rent can impact on the design of water pricing policies. Economic rent is defined as the long term economic profit that can be earned as the

---

<sup>24</sup> ERA, supra n 18, 163.

<sup>25</sup> Department of Environment, supra n 20, 7.

<sup>26</sup> Hatton MacDonald, supra n 8, 22 ff.

result of having the rights to a resource, and the better the resource, the better the rent.<sup>27</sup> Hatton MacDonald says that, in Australia, there is no explicit charging of economic rent in water pricing. Merrett discusses the effect of the theory of economic rent on water pricing,<sup>28</sup> describing various types of abstraction charges and the rent value they attain for a government controlled public resource. He concludes that annual income from abstraction charges should be hypothecated to the water regulator to enhance water management administration; that the level of the charge should restrict demand to the licensed level of supply, and that the level of the abstraction charges for water from a particular resource should reflect the scarcity value of that water; e.g. water of better quality or greater ecological value should be a higher price.<sup>29</sup>

In summary, it would appear that there are strong arguments for Western Australia adopting, in the short to medium term, an administrative approach to determining volumetric externality charges that recover the costs of water resources management and the incremental damage occurring to water resources and the water dependent ecosystems. In the longer term, it may be anticipated that better regulatory management for the determination of water scarcity and the establishment of a mature water market may lead to more use of indirect means of pricing water for environmental externalities. However, it may be anticipated that there will always be some need for direct pricing of environmental externality costs.

## **2.2. ECONOMIC REGULATION AUTHORITY – DRAFT REPORT**

The following comments are made in response to various propositions in the ERA’s draft report on Urban Water Pricing (“ERA Draft Report”).<sup>30</sup> The aim is to suggest some types of environmental externality costs could be recovered by water pricing in Western Australia.

### **2.2.1. Water Resource Management Costs**

The ERA Draft Report states that it is “reasonable to pass on to consumers those resource management costs that are directly attributable to current consumption activities”. We agree. At least, water access licence fees should recover from water suppliers the costs of water resource management that can be directly attributed to them, and the suppliers should be able to pass those costs on to consumers in the water service rates. Similarly, the direct costs of water resource management should be recovered from self-supply licensees, who would also pass on the higher costs of water to the consumers of their products.

### **2.2.2. Costs of Repairing Environmental Damage**

The ERA Draft Report states that the “cost of repairing any damage caused by supply decisions made in the past might be better funded by Government”. Although this statement may be applicable in certain, or even many, instances for reasons of administrative efficiency, the authors disagree with this statement as a general proposition. In certain situations, the Government should endeavour to recover from water consumers the costs of repairing damage incurred as a result of past water use decisions. This is because consumers have benefited, and will benefit, from those decisions pending implementation of steps to repair the damage.

Western Australia can draw from the experience of South Australia in this matter. That State has introduced a “Save the River Murray Levy” on South Australian customers,<sup>31</sup> which aims to contribute to restoring the health of the River Murray over time. Western Australia should consider introducing a similar levy to pay for programs aimed at restoring the health of

---

<sup>27</sup> Hatton MacDonald, *supra* n 8, 10.

<sup>28</sup> S Merrett, *The Price of Water: Studies in Water Resource Economics and Management*, IWA Publishing, 2005, ch 11.

<sup>29</sup> *Ibid*, pp 99-100.

<sup>30</sup> Economic Regulation Authority, *supra* n 13, summarised in the Executive Summary at pp.6-7.

<sup>31</sup> South Australia, Transparency Statement, Water and Wastewater Prices in Metropolitan and Regional South Australia, 2005-06, p 35: <http://www.escosa.sa.gov.au/site/page.cfm?u=24&c=85>.

certain water resources and their dependent ecosystems. This should be considered as an option for paying for the work to be done with Gngangara Mound, such as the supplementation of environmental water to the Yanchep Caves, and similarly over-allocated water resources.

A significant issue is how to allocate the burden of water pricing? Should there be a flat rate levy or volumetric unit levy? Should such a levy be imposed on all consumers who currently use water drawn from the Gngangara Mound? Should the levy be imposed on all areas of the State that have at some stage drawn water from Gngangara Mound, remembering that Gngangara Mound water was in recent drought years supplied to the Goldfields.

### **2.2.3. Internalizing other Environmental Costs: Scarcity Value**

The ERA Draft Report states that “in principle, there is economic justification for using pricing to internalize other environmental costs such as the impact of reduced natural stream flow and lower groundwater levels that are not currently being addressed by environmental programs. However, in Western Australia, not enough is known about these costs to establish a measurable and defensible externality charge.”

The authors disagree with this view, as it clearly does not meet the national water policy aspirations that WA should share. The ERA should, at least, be strongly endorsing the principle and recommending pricing trials so that Western Australia can learn how to internalise third party environmental externalities. For example, the ERA should state that the principle should apply to any new inter-basin water diversions, such as the proposal to divert water from the South West Yarragadee aquifer to the integrated water supply system. Such a proposal cannot be properly and comparatively costed without taking into account third party environmental costs.

It is well recognized that, whilst there are difficulties in explicitly pricing third party environmental costs, there are alternative “second best” pricing techniques that can be used to send pricing signals to consumers.<sup>32</sup> These pricing signals can appropriately indicate water scarcity, both from seasonal variation and during the summer drought period when much metropolitan water usage is directed at maintaining gardens, not at essential human wellbeing. A CSIRO Land and Water Report has suggested a surcharge of 30% for Adelaide summer water supply based on some experience in the United States.<sup>33</sup> The ERA should recommend a similar approach for Western Australia, perhaps aimed at higher volume users to act as a price signal to reduce consumption. With respect, the ERA’s arguments at p.162 of the Draft Report against using seasonal pricing are not compelling and earlier discussion in the report is too optimistic about the prospect of establishing alternative supplies at low costs, including external costs.

The ERA uses long run marginal cost (LRMC) to calculate costs. The problem with this method is that, although it might calculate long term scarcity, it assumes that more water supplies in other locations can be identified and exploited. It does not take into account short term scarcity and externalities. It is crucial that pricing water for environmental externality costs recognizes the annual and seasonal scarcity in water supply and respects the legal limits of environmental water allocations. As Zilberman and Schoengold say:<sup>34</sup> “[t]he value of water is determined in part according to its scarcity and will be greater during times of drought than in seasons with high precipitation. An optimal water [pricing] policy will have to be flexible enough to take account of this seasonal or annual variation in supply.”

The annual determination of available water from a surface or ground water system should be a prominent factor in the determination of the price of water during that period. This

---

<sup>32</sup> Hatton, McDonald, Young & Connor (CSIRO Land & Water Policy and Economic Research Unit), “Pricing Water – A Tool for Natural Resource Management in the Onkaparinga Catchment”, 2001, p.22.

<sup>33</sup> *Ibid*, p.24.

<sup>34</sup> D Zilberman & K Schoengold, “The Use of Pricing and Markets for Water Allocation” (2005) 30(1) *Canadian Water Resources Journal* 1-10, at 7.

could be a factor in the price that the Government charges water access entitlement holders, both self-suppliers and licensed public water suppliers. The water suppliers should also have pricing flexibility in respect of their customers so that they can use price as a demand management tool to ensure that they do not exceed the legal allocation of their share of the available water resource for any particular period. Retail pricing flexibility would also enable water suppliers to recover their costs in times when water supply is reduced because of scarcity. Water licensees and customers of suppliers who want high security for a more regular volume of water across seasonal scarcity could pay more to obtain it.

There are social interests that compete with these objectives of pricing environmental externalities. For example, there may be arguments for achieving parity of water pricing for all or many sections of the community across different areas of the State, regardless of the relative scarcity of water in those different areas. There may also be concerns about the social equity effects of higher water pricing on vulnerable institutions (e.g. hospitals). Concerns about parity of pricing can be met by giving clearly transparent subsidies to consumers in those parts of the State that require assistance, though this should only be done where it is essential otherwise it undermines the aim of signalling water scarcity by price. Concerns about vulnerable institutions can be met by regulatory intervention that sets stable volumes of supply at lower subsidized rates for those institutions. These sorts of subsidies should be recognized in published community service obligations.<sup>35</sup>

### **3. LAW OF WATER PRICING IN WESTERN AUSTRALIA**

With the discussion of various techniques of pricing environmental externalities in mind, we need to ask whether the law of Western Australia authorizes:

- the State Government to set water prices to recover from water access entitlement holders the costs of water resources management, to raise funds for repairing environmental harm arising from water use and to internalize the costs of other environmental externalities, including by taking account of annual, seasonal and locational scarcity; and
- the water suppliers to pass onto to customers the costs of the water pricing that are designed to recover the costs of environmental externalities.

Thus, it is necessary first to distinguish between the fees paid by the holders of water access licences with authority to take water from a natural resource and the rates that consumers of water services pay to a water utility with a water supply licence. In this discussion, consideration will be given only to the operation of relevant legislation in respect of the Water Corporation. Similar propositions apply to other water supply utilities.

The State Government's authority to levy fees and charges for access to water resources is founded in the legislative declaration that all surface water, including watercourses and wetlands, and ground water in the State is vested in the State and that no person can take water from these natural sources without authority from the Government.<sup>36</sup> There is statutory authority in the Minister to set such fees and charges by making regulations under the *Water Agencies (Powers) Act 1984 (WA)* ("*WA (P) Act*"). Currently, however, there are no fees or charges imposed on a person who obtains and holds a water access licence.

Consumers of water services pay rates to the Water Corporation, which are calculated in accordance with by-laws made by the Minister under the *WA (P) Act*. Under the *Water Corporation Act 1995 (WA)*, the shares in the Water Corporation are all allotted to the Minister responsible, and the dividends on profits are paid to the State.

---

<sup>35</sup> Community service obligations are the formally and publicly recognized payments of subsidies, where such subsidies are determined to be necessary for reasons of social policy. Notionally, the cost of the subsidies should be recouped from consolidated revenue.

<sup>36</sup> *Rights in Water and Irrigation Act 1914 (WA)* ss 5A & 5C.

In making regulations and by-laws under the *WA (P) Act* to set water access licence fees or water service rates, the Minister may be informed by the report of the Economic Regulation Authority under the *Economic Regulation Authority Act 2003 (WA)*.

### 3.1. WATER ACCESS LICENCE FEES AND CHARGES

We will consider first the law governing the authority of the State Government to set fees and charges that recover from the holders of water access licences the *direct* costs of water resource management<sup>37</sup> and the costs of other environmental externalities.<sup>38</sup>

The statutory provisions authorising the regulations for such fees and charges are located in the *WA (P) Act* and the *Rights in Water and Irrigation Act* (“*RiWI Act*”), and have to be read together.

The *WA (P) Act* s.37 contains a “general power” to make regulations “for or in respect of all matters that are required or permitted, or are necessary or convenient” to be prescribed for the purposes of this Act or any relevant Act”. The *RiWI Act* is a ‘relevant Act’: *WA (P) Act* s.5. That general power is then explained in other provisions.

The *WA (P) Act* s.36(4)(d) states that regulations “may provide for fees payable to the Commission [read now Department of Environment] ... in relation to *specified* matters and make provision as to the recovery of any such fees”. By sub-s.(5), ‘specified’ means specified in the regulation.

The *RiWI Act* states that the general regulation making power under s.37 of the *WA (P) Act* may be exercised to make regulations for giving effect to Part III of the *RiWI Act*, in particular, as to:

- 1) fees payable in respect of applications and the grant, variation and renewal of licences under s 26D (construction of wells) – s.27(1)(g); and
- 2) charges that are to be paid by the holders of licences under the *RiWI Act* who also hold an operating licence (water supply services) under the *Water Services Licensing Act* in respect of the water taken under the *RiWI Act* licence – s.27(1)(ga).

Further, s.27B of the *RiWI Act* specifies the scope of regulations that may be made in respect of licences and permits that are authorised or required by regulations, as opposed to those licences and permits that are authorised or required by the Act itself. By s.27B(b), the regulations may provide for ‘fees that are to be paid in connection with licences or permits’. These licences and permits would be those required by regulations made under ss.17B, 21A(2) and 27A. It is doubtful that it would also apply to licences required under s.5C(2)(b) and 5C(2)(d) of the *RiWI Act*; i.e. surface or ground water resources brought under the s.5C licensing regime by the prescription of the area in a regulation. Given the relatively limited scope for the creation of these licence requirements, we will not consider the scope of s.27B(b) further. It is likely to be similar to what is discussed here anyway.

From the morass of these regulation-making powers, we suggest that the scope for levying fees and charges that cover resource management costs is as follows.

- 1) The **fees that may be charged in respect of s.26D** (construction of wells) licences are restricted to the actual costs of processing the “applications and the grant, variation and renewal of [s.26D] licences”. Much of this language (which was present in the pre-amendment Act in respect of licences generally) appears redundant, because s.26D licences are not subject to variation or renewal under the Act. Fees for the application or

---

<sup>37</sup> As defined in section 1.2 of this paper.

<sup>38</sup> Some of this explanation is adapted from a memorandum that Alex Gardner prepared for the Water and Rivers Commission on 23 May 2001. A copy of that memorandum has been made available to the authors, courtesy of Rod Banyard, Department of Environment, 27 October 2005.

grant of a s.26D licence could recover the costs of processing the licence applications, but could not be used to recover the costs of resource management.<sup>39</sup>

- 2) **The fees that may be payable under s.36(4)(d) of the WA (P) Act** may relate to matters specified in the regulation, which could specify any licence to take water. There appear to be no express criteria in the legislation that limit the matters that may be specified as the basis of a fee. However, that does not mean that the range of matters is unlimited in law; there are constitutional limits on the fees that Parliament may authorise. Recent High Court authority<sup>40</sup> suggests that *direct management costs* (including the costs of remedying environmental harm caused by the taking of the water) could be recouped in the licence fees, subject to two qualifications.

First, the management activities must themselves be within power and consistent with the objectives of Part III of the *RiWI Act*. Secondly, the fee must avoid being characterised as a tax. To be characterised as a fee for a licence and not a tax, there must be a discernible relationship between, on the one hand, the fee that is charged and, on the other hand, the benefit that the particular licensee obtains from the performance of those management activities *or* the value of the authority (licence) to access the water resource: *Harper v Minister for Sea Coast Fisheries*.<sup>41</sup> If the fee does not satisfy this test and is characterised as a tax, it may be invalid for a couple of reasons.

- (a) It is a principle of constitutional law that taxes may only be levied under express authority of Parliament in an Act that only imposes taxes and does nothing else.<sup>42</sup>
- (b) A fee for a licence that authorises extraction of a resource and that can be characterised as a tax risks being characterised as an excise, which may only be levied by the Commonwealth Parliament.<sup>43</sup>

There will, at least, be uncertainty about whether indirect management costs of policy development, water resources assessment and maintenance of technical data-bases meet the “discernible relationship test”. It is suggested that the constitutional test of valid licence fees is likely one reason for drawing the NWI policy distinction between direct and indirect management costs.

This leaves the question of whether a licence fee can also recover the scarcity value of water that reflects the “other” environmental externalities arising from water use. It is arguable that, if a licence confers access to a resource and is akin to a proprietary right, a fee charged for it may be justifiable as the cost of the acquisition of the proprietary right and not be a tax.<sup>44</sup> If the fee can be said to reflect the value of the water access licence, then it is also arguable that the fee can reflect the scarcity value of the resource being taken from time to time. As the fee should reflect the value of the licence and the water taken, there should be no reason why the fee could not vary with annual, seasonal and locational scarcity of the water resource. Unfortunately, it will not always be easy to draw the line between what is “a price paid for the right to appropriate a public natural resource and a tax upon the activity of appropriating it”.<sup>45</sup> Nevertheless, the High Court

---

<sup>39</sup> *Marsh v Shire of Serpentine-Jarrahdale* (1966) 120 CLR 572.

<sup>40</sup> *Airservices Australia v Canadian Airlines International Ltd* [1999] HCA 62.

<sup>41</sup> (1989) 168 CLR 314, per Dawson, Toohey & McHugh JJ.

<sup>42</sup> *Constitution Acts Amendment Act 1899* (WA) s 46(7). Although, by s 46(9), this provision does not invalidate a statute enacted in contravention of it, a regulation creating a fee in violation of this constitutional provision would most likely be held to be outside the regulation making power of the statute and invalid.

<sup>43</sup> *Commonwealth Constitution* s.90.

<sup>44</sup> See Brennan J, and Mason CJ and Deane and Gaudron JJ in *Harper*, supra n 41

<sup>45</sup> As Dawson, Toohey & McHugh JJ acknowledged in *Harper*, supra n 41

upheld the very large abalone fishing licence fees in *Harper* that were designed to capture the economic rent of the resource exploitation.

It is possible for licence fees aimed at recovering water resource management costs to be set in accordance with the volume of water taken. However, there would have to be considerable evidence to support the view that the value of the services provided to, or benefit obtained by, the individual licensee is reflected in the volume of water taken.

- 3) Section 27(2) elaborates upon the nature of the **charges that may be levied on water service providers under s.27(1)(ga)**. The charges may be in the form of a “royalty” for water taken under an access licence. The legislation impliedly requires that charges be calculated in some way relevant to the volume of water taken, which is the usual way of calculating a royalty. This should not preclude the calculation of the charges being designed to recover the direct costs to the Department of managing the resource (including remedying environmental harm) and the scarcity value of the water taken.

Is there any limit on the amount that may be charged this way? On the basis of the common law premise that a royalty is an amount charged for the privilege of gaining access to a resource owned by the person authorising that access, it is arguable that a royalty would not be limited by the discernible relationship test. For example, the States are not limited in this way in the amount of royalties they can charge on Crown owned minerals produced under mining leases granted by the State. However, it is not clear that the Crown in the right of the State would be regarded as the owner of the water resource because it has declared sovereign control of that resource in legislation: *RiWI Act* s.5A. At common law, no person, not even the Crown, could “own” water in its natural state.

If the Crown were not regarded as the owner of the water resource, then the discernible relationship test would apply to limit the level of a fee (“royalty”) charged for the right to appropriate a natural resource.<sup>46</sup> This means that there would have to be a discernible relationship between the level of the royalty and the value of the water access licence or, possibly, the value of the water taken under the licence. This limits the level of the charge to the collection of direct management costs, as discussed in (2) above, and the scarcity value of the resource being taken under the licence from time to time.

In conclusion, we suggest that the current regulation making powers under the *WA (P) Act* and the *RiWI Act* would authorise the levying of fees and charges that recover from water access licensees the direct costs of water resources management, the costs of remedying environmental harm and the scarcity value of the water, but possibly not the indirect costs of management.

### 3.2. RATES AND CHARGES TO CONSUMERS

As water access licensees are currently not charged fees to recover the costs of environmental externalities, including the costs of water resources management, it may be assumed that, generally, the price of water supplied to consumers does not recover money for any such purposes. We say “generally” because, although water access licensees are not formally paying fees that recover the cost of water resource management, it is arguable that the Water Corporation pays some of these costs informally through the management of water catchments and investigation of new water sources. Equally, private entities pay for a significant part of the cost of exploring for new water sources for industrial purposes. Apart

<sup>46</sup>

In that case, the Government of Tasmania could not claim ownership of the abalone taken under a fishery licence because they were migratory fish located beyond the coastal waters of the State. However, the State did have the sovereign power to regulate the sustainable exploitation of the fishery and could charge licence fees that were calculated as a portion of the market value of the fish taken.

from these costs, which we have not ascertained, we believe that it is presently correct to say that current consumer water pricing aims only to recover the costs of water service delivery; namely, the fixed infrastructure costs and the volume related costs of delivery.

Our purpose here is to ascertain whether there is legal authority for the Government to set consumer water rates that enable water suppliers to pass on to consumers the costs of water resources management and the environmental externalities that may be levied against the water supply utilities and irrigation co-operatives. It is acknowledged that there are currently technological limitations on introducing more variable pricing techniques for water consumers that seek to recover the costs of environmental externalities.<sup>47</sup> However, we assume that these technological limitations could be overcome if it were economically feasible to do so. Therefore, we briefly review the current terms of the statutory powers to make by-laws setting water rates before addressing the scope of charges that legal authority would support.

### **3.2.1. The Rating Powers**

The Minister has a general power to make by-laws prescribing all matters that are required or permitted by that Act or another relevant Act to be prescribed, or are necessary or convenient to be prescribed for the performance by the Water Corporation of its functions,<sup>48</sup> which clearly includes the function of supplying water services. Without limiting that general power, the Minister also has the specific power to “prescribe the entitlements, if any, arising from the payment of any charges by way of a rate or otherwise”.<sup>49</sup>

The matters in respect of which the by-laws may make prescription include charges for the provision by the Water Corporation of water services.<sup>50</sup> In particular, the by-laws may, subject to statutory limits for maxima and minima, provide:

- ♦ For the charging for water supply or waste water services by reference to the quantity of water or wastewater concerned or the gross rental value, unimproved value, or area of the land in respect of which a water service is provided, *or on such other basis as may be specified in the by-laws* and, in a particular period, may prescribe two or more such charges in respect of such land;
- ♦ That certain classes of land are exempt from rates and charges;
- ♦ For differential rates and charges for:
  - Classes of land according to the use to which land is put, the purpose for which water is used on the land, or such other factor as the Corporation considers appropriate;
  - The classes of water service according to the nature or quality of, or the source of, the water or wastewater concerned or such other factor as the Corporation considers appropriate;
- ♦ Concessional charges to be payable by persons of any prescribed class, which may apply to such persons generally or in such circumstances as are prescribed
- ♦ Maxima and minima for any charge by reference to any factor the Corporation considers appropriate; and
- ♦ For an additional charge to be made, or for a rebate or refund to be given, if there is a change of circumstances from the assessment of charges.

---

<sup>47</sup> ERA Draft Report, n 16, pp 84-86.

<sup>48</sup> WA (P) Act s 34.

<sup>49</sup> WA (P) Act s 34(3)(n).

<sup>50</sup> WA (P) Act s 41.

### **3.2.2. Water Corporation Customers**

In our understanding, customers of the Water Corporation currently pay a price for water and waste water services according to the cost of supplying the service, which includes infrastructure expenses recovered by a fixed charge and a volumetric consumption charge. Some, at least, of the infrastructure expense is recovered by charges calculated according to property values rather than the actual fixed costs of providing the service.

In our opinion, the by-law powers do not explicitly address the type of costs that water rates could seek to recover. Although certain bases for the calculation of the rates are described, there is also a broad discretion to specify in a by-law other bases for the calculation of rates. Therefore, we suggest that these powers would authorize the Minister to set rates that enable water suppliers to recover from consumers the costs they have paid for water resources management, repair of environmental harm from water resource exploitation, and to charge for the scarcity value of water. The water charges may be specific to a particular period, calculated on volume and apply different rates according to the source of the water.

There is also adequate provision for variation of rates to account for classes of persons or institutions that may be vulnerable to the rising costs of water in times of scarcity. For example, there is the power to provide for concessional charges and to give rebates and refunds.

However, it is not clear how the by-laws would provide for the water rating flexibility that permits the Water Corporation to charge more for water in a year of reduced availability. We expect that the by-laws would have to set the prices on an annual basis rather than delegate authority to the Water Corporation to set prices from time to time, according to its own discretion. It may be a politically preferable system for the responsible Minister to determine an annual variation in volumetric charges for years of particular scarcity.

The calculation of water rates is also subject to the constitutional limits discussed above in relation to the fees payable by water access licensees. Thus, the discernible relationship test applies to the calculation of rates payable by consumers. Does this present problems for the Water Corporation recovering the costs levied as licence fees by standard rates on a broad range of consumers for delivery of water as an homogenous product, regardless of whether particular consumers were receiving water that came from a higher priced water source? The answer is “no”. The discernible relationship between the rates charged and service / product delivered may be calculated to recover the expenses of the provision of services generally.<sup>51</sup>

### **3.2.3. Irrigation Co-operatives**

At least two irrigation districts in Western Australia are managed by irrigator co-operatives that hold water access licences.<sup>52</sup> These co-operatives have their own private arrangements for recovering from their members the costs of the maintenance of their licences. In preparing this report, we have not been able to review the contractual terms for changing of these private arrangements to recover new licence costs incurred as fees for water resource management charges and other fees to recover the costs of environmental externalities. However, we note that the recent final report of the Irrigation Review Steering Committee<sup>53</sup> has, whilst noting some irrigator opposition, recommended that the Government “reconsider the introduction of water resource management charges which recover that share of the cost attributable to users”. We did not detect any concern that the irrigation co-operatives would be unable to pass on to their members the imposition of new costs in licence fees. However, the

---

<sup>51</sup> *Airservices Australia v Canadian Airlines International Limited* (1999) 2002 CLR 133, esp @ 176 ff per Gleeson CJ & Kirby J.

<sup>52</sup> Harvey Water Irrigation Area operated by Harvey Water ([http://www.harveywater.com.au/Irrigator%20information/irrigator\\_information\\_allocation.asp](http://www.harveywater.com.au/Irrigator%20information/irrigator_information_allocation.asp)) and the Ord River Irrigation Area operated by the Ord Irrigation Cooperative Ltd (<http://www.ordirrigation.com.au/license.htm>).

<sup>53</sup> Government of Western Australia, Irrigation Review Steering Committee, *Irrigation Review: Final Report*, July 2005, Section 8.6.5.

Committee's recommendation adds that the "basis of charging should be transparent and the money raised used for the agreed purposes".

### **3.3. APPLICATION OF ENVIRONMENTAL EXTERNALITIES FUNDS**

The qualification added by the Irrigation Review Steering Committee regarding the use of the funds collected by government in pricing water for the costs of environmental externalities raises some interesting questions. How can the community be sure that the funds collected from water access licence fees are applied to the tasks of water resources management and remedying environmental harm? Further, how are the funds representing the scarcity value of water to be applied?

Hatton MacDonald comments:<sup>54</sup>

The externality charges in the volumetric side could be placed in an environmental account and/or go into consolidated revenue and the funds used to undertake the longer term infrastructure upgrades as well as buy water for the environment.

It is a basic constitutional proposition that all revenues of government, regardless of their nature or origin, are paid into the "Consolidated Fund" and that no moneys are to be appropriated from the Consolidated Fund except in accordance with the purposes approved by legislation.<sup>55</sup> Thus, legislation would be needed to appropriate an equivalent amount of money to that collected for the assigned purposes; for example, applying the money to management of water resources in the regions from which the funds are collected.

This still leaves the question of how to allocate the moneys that represent the scarcity value of water. In part, these moneys are collected as a demand management tool.<sup>56</sup> However, they mostly represent a payment in the nature of a royalty: the economic rent from exploiting a resource that has an opportunity cost. The economic rent should go to the benefit of the community in the region from which the resource is taken, especially where the water is transferred to another region for consumption. This sentiment is evident in the debate about transferring water from the South West Yarragadee to the integrated water supply system, which is likely to see much of the water consumed in the Perth metropolitan area.<sup>57</sup>

The issue has previously been generally ignored in establishing inter-basin transfers of water in Western Australia, but it should be addressed for any new proposals and can be addressed over time for established schemes. It is arguable that the economic rent of resource use is returned to a region by other public funding programs, but the equity of these programs needs to be assessed. Those questions aside, it is unfair to regional communities to rely on the legal fiction that water is a State resource to be used for the benefit of all Western Australians as the Government determines, because political power is so heavily weighted in favour of the metropolitan community. One has simply to imagine the South West or North West being established as separate states; it would be inconceivable that they would agree to water resources from their regions being transferred to Perth without the payment of the economic rent. That reality ought to be honoured in some way under present constitutional arrangements by charging licence fees that recover the scarcity value of the water and allocating those funds for the benefit of the region from which the water is taken. For example, the funds collected could be appropriated to a trust fund to be administered by the State Government in conjunction with the local government authorities of the region. Alternatively, the funds could be appropriated directly to those local government authorities.

---

<sup>54</sup> Darla Hatton MacDonald, *supra* n 8, para 4.2.1, 24. Merrett likewise suggests that water abstraction charges should be hypothecated to the water agency for the costs of water resource management: see section 2.1 above.

<sup>55</sup> *Constitution Act 1889 (WA)* ss 64, 68 & 72.

<sup>56</sup> We note that Hatton MacDonald and Lamontagne caution against confusing the pricing of water for demand management and for the cost of environmental externalities: *supra* n 2, 5.

<sup>57</sup> See Appendix for article from *The West Australian*, Saturday 24 September 2005, 55, "Trade-off plea on water from SW".

## CONCLUSION

NWI policy is to use water pricing techniques that recover the direct costs of water resources management and other environmental externalities imposed on 3<sup>rd</sup> parties and the public interest. Whilst there is limited experience with pricing water for environmental externalities, Western Australia should be undertaking trials of such pricing to develop our understanding of these pricing techniques. It would be appropriate to commence those trials with the new water allocation sought by the Water Corporation for the South West Yarragadee.

We have argued that the constitutional and statutory authority exists for the Western Australian Government to recover these costs in the form of:

- the direct costs of water resources management attributable to water access licensees;
- the costs of remedying environmental harm caused by water abstraction; and
- the scarcity value of water, expressed in both its annual and seasonal availability and the locational scarcity values determined by the source of the water.

These costs may be recovered from all water access entitlement holders and, in the case of water suppliers, may be passed on to consumers of water services. Pricing water for environmental externalities, especially the scarcity value of water, is an important means of enhancing respect for environmental water allocations because it will permit the annual and seasonal availability of water to be reflected in the price of water. It has also been argued that there is the statutory authority to vary retail prices of water to meet social equity concerns and to ensure affordable prices of water supply to vulnerable institutions.

Whilst the statutory authority exists to set the price for water to recover the costs of environmental externalities, there is a need for legislative reform to establish the means for allocating the moneys collected to their assigned purposes. This may be achieved by appropriation legislation allocating funds to those purposes, but this matter needs further consideration. In particular, it is argued that the scarcity value of water should be included in the price of water taken for inter-regional transfers and that the resultant funds should be allocated to the region in which the water is sourced. This may require particular legislative reforms.

Finally, there is one aspect of water allocation that intersects with the suggestions for water pricing advocated here. Whilst the price of water should reflect annual and seasonal scarcity and will impact on water rights trade and consequent water distribution, there may be times of severe scarcity when the Government will need to exercise regulatory powers to intervene in this market regime to protect vulnerable social interests. These regulatory powers<sup>58</sup> will relate as much to the allocation of water as to water pricing. Further consideration should be given to how the water pricing powers discussed here would interact with the extraordinary re-allocation powers that apply in such circumstances.

---

<sup>58</sup> *Rights in Water and Irrigation Act 1914 (WA) ss26GB – 26GF.*

# Trade-off plea on water from SW

ELOISE DORTCH

The State Opposition and South-West shires are calling for a massive spending increase on infrastructure in the South-West as a trade-off if a plan to take water from the region's Yarragadee aquifer goes ahead.

A meeting of 12 South-West shires yesterday called on the City of Bunbury to list the South-West's key infrastructure shortfalls, which would be put to the State Government if it went ahead with its plan to take 45 gegalitres from the region to Perth.

Although there remains fierce opposition in the South-West to taking water from the aquifer for Perth, many now concede it looks increasingly likely it will happen.

Bunbury city development executive manager Tony Brun said the Government appeared to have a "Perth first" approach to funding infrastructure, despite the South-West's rapid growth.

He said by sending water to Perth, the Government was effectively subsidising the city's urban sprawl.

Given that the Yarragadee aquifer offered cheaper water than desalination — at 85¢ a kilolitre compared to \$1.16 — the Government was saving money by taking water from the South-West and should return those savings to the region for much-needed infrastructure.

"They're obviously saving money," he said. "What's happening with that money?"

Mr Brun said options before the Government included putting a 5¢ levy on each kilolitre taken from the aquifer to pay for South-West infrastructure or spending the more than \$100 million it would save through the aquifer option from consolidated revenue.

Liberal South-West MLAs Paul Omodei, John Castrilli and Steve Thomas said the South-West's infrastructure needs were pressing.

While they opposed the aquifer plan, they said if it went ahead, there should be major infrastructure improvements in the South-West as a trade-off. Mr Thomas said some of the most pressing needs in the South-west included water supply and inflill sewerage.

Both were provided by the Water Corporation, which was pursuing the Yarragadee plan only because it offered a cheaper alternative to desalination.

Minister Assisting in Water Resources John Kobelke said he opposed a levy on water. He said water was a State resource and it was vital it could be transferred across regions and that all West Australians had equal access to it.

## APPENDIX

"Trade-off plea on water from SW"  
*The West Australian*,  
Saturday, 24 September 2005, 55.  
Reference: footnote 57.