Diving into the deep: water markets and the law

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Introduction

The central objective of the current reforms - to develop a water market - has triggered polarised debate between the advocates of markets and advocates of regulation.[1] Yet in western USA, where water markets have been recommended since the 1960s and a common reality since the mid 1980s, water practitioners have accepted a role for *both* markets and regulation.[2] The problem is to identify for what purposes each should be used. A purely regulatory approach did not work, but neither would a pure market approach, if only because of the need to provide for environmental flows. The two approaches need to be integrated.[3]

In 1994 COAG agreed to reform the water industry because water use was inefficient, river systems were seriously degraded, and a better balance in water resource use was required. Water would need to be re-allocated to 'higher-value' and sustainable use. Re-allocation through the water market was chosen because it fitted current ideology and probably was least contentious politically. Trade in water required it to be separated from land, and defined as a commodity by itself. To do this, a wide range of specific measures were required including a system of title for water. Because trade might cause detrimental effects to rivers and their community, water for environmental contingencies would need to be allocated. The policy placed property rights at the heart of reform. In 2004 several Australian States and the federal government have agreed on a further raft of measures referred to as the National Water Initiative.

I propose to consider some of the water markets aspects of COAG and NWI reform. The questions I address are first, whether the reform should incorporate a clear legal framework of property rights, and second whether policy makers should draw further lessons from water markets elsewhere. From that analysis I suggest some features required in the law and legal institutions here in Australia.

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[1] See for example A Moran, 'Tools of Environmental Policy: Market Instruments versus Command and Control' and P Kinrade, 'Towards Ecologically Sustainable Developments: The Role and Shortcomings of Markets' both in R Eckersley (ed), *Markets, the State and the Environment: Towards Integration*, Melbourne, Macmillan, 1995 hereafter Eckersley, 1995.

[2] See for example BC Saliba and D Bush, *Water Markets in Theory and Practice*, Studies in Water Policy and Management No 12, Boulder, Westview Press, 1987; BG Colby, 'Enhancing Instream Flow Benefits in an Era of Water Marketing' (1990) 25 *Water Resources Research,* 1113; Committee on Western Water Management, *Water Transfers in the West: Efficiency, Equity and the Environment,* Washington DC, National Academy Press, 1992; HO Carter, HJ Vaux Jr. and AF Scheuring (eds), *Sharing Scarcity: Gainers and Losers in Water Marketing*, California, Agricultural Issues Center, University of California, 1994; and AD Tarlock, 'Reallocation: it really is here' in KM Carr and JD Crammond (eds), *Water Law: Trends, Policies and Practice,* Chicago, American Bar Association, 1995.

[3] This was the theme in Eckersley, 1995 above.

1. Background

Australia is an old continent, with areas that are prone to salinity problems.[4] Water is scarce, and its supply is variable. As is often said, Australia is both wet *and* dry. It has some of the wettest areas on earth, while other areas experience prolonged droughts, seasons of low and variable rainfall broken by sweeping floods.

Access to water resources in Australia has, in the last 250 years, been governed by three different regimes. Until colonial settlement, indigenous peoples' relationship to land and water was characterised by a custodial obligations only recently recognised as a form of communal property rights.[5] As part of the reception of the English common law into Australia,[6] the colonisers instituted a regime of access to water based on a different sort of common property regime. Riparian rights were restricted to a select group of people who occupied land next to rivers. It was recognised in the 1880s that common law riparian principles were not suitable for development of water resources of the colony. Hence a regulatory regime was instituted to vest use and control of water resources in the state.[7] Incremental changes were made to that regime for the next 100 years.

Management of water resources is considered a state matter. In the mid 1990s the Commonwealth and state governments agreed that reform was necessary for an efficient and sustainable use of water resources. They noted widespread natural resource degradation and called for new measures to halt this. As a consequence, all of the Australian states have now passed new water legislation. Amongst the many objectives of reform was the introduction of

- clearly specified water entitlements which separate water property rights from land title,
- allocation of water for the environment, and where river systems were over-allocated, for 'substantial progress' to provide a better balance in water resource use,
- and public consultation where new initiatives are proposed especially in relation to pricing, specification of water entitlements and trading in those entitlements.

Several Australian states entered into the National Water Initiative Agreement (NWI) on 25 June 2005. Unlike the 1994 COAG Framework which was entered into by the Commonwealth all states and territories, Western Australia and Tasmania did not agree to the NWI, thus it cannot be properly called a *national* initiative. Even so it is a tremendously important step for many reasons. Arguably the most important is the setting up of a National Water Commission by the end of 2004. For this discussion the most relevant parts of the NWI are

Entitlements

- Consumptive access to water should be described as perpetual/open-ended share of the consumptive pool of a specified water resource (para 28) except if the resource is poorly understood or in other circumstances outlined (para 33).

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[4] Murray-Darling Basin Ministerial Council, *The Salinity Audit: A 100 year perspective, 1999*, MDBMC, Canberra, 1999, 3-4.

[5] For a description of Aboriginal use of water see DI Smith, *Water in Australia,* Melbourne, Oxford University Press, 1998, 263; for analysis of Aboriginal title to water resources, see RH Bartlett, 'Native Title to Water' in RH Bartlett, A Gardner and S Mascher, *Water Law in Western Australia,* Centre for Commercial and Resources Law, UWA and Waters and Rivers Commission, Perth, 1997.

[6] The common law was received into Australia on British acquisition of sovereignty. See generally *Mabo v Queensland (No 2)* (1992) 175 CLR 1.

[7] For an account see PL Tan, *Legal Issues Relating to Water Use, Issues Paper No.1,* Murray-Darling Commission Project MP2002, Report to the Murray-Darling Basin Commission, 2002. For a general text see D Fisher, *Water Law,* LBC Information Services, Sydney, 2000.

- Essential characteristics of the water product and its ability to be traded, bequeathed, leased, subdivided, mortgaged, enforced, and registered are all to form a part of the water access entitlement (para 31).
- That after 2014 the risk of reduction in the nominal volume or reliability of the entitlement arising from reductions to the consumptive pool because of natural factors will need to be shared (para 48).

Water planning

- This specification is dependent on a water plan which has two broad purposes
- resource security (as above) and
- ecological security by describing environmental and other public benefit outcomes for water systems (para 37).
- Native Title will require that plans allocate water for indigenous rights to water, and that traditional cultural values be accounted for.
- The plan should provide adaptive management to meet *productive,* environmental and public benefit outcomes (para 25(iv) emphasis added).
- Planning and regulation will need to recognise that activities may potentially intercept significant volumes of surface or groundwater, eg farm dams and bores, use of overland flows, and large scale plantation forestry. Therefore a number of measures have been proposed eg licensing of significant activities in stressed catchments (paras 55-57).
- By 2005 allocations will provide better balance in resource use in systems which are overallocated or deemed stressed, and that by 2010 substantial progress will be made in adjusting all overallocated and overused systems.
- Any adjustment to the consumptive pool in water plans (because of natural events such as climate change) after 2014 will need to shared according to a risk formula if no other risk sharing formula is agreed to (paras 46-51).[8]
- If adjustments are made to the consumptive pool in water plans because of new environmental objectives, then governments will bear the risks. However no proportionment was given, and it is an assumption that this refers to the State.

Water markets

- By June 2005 there should be *removal* of barriers to temporary trade within and between states (para 60).
- This deadline applies also for a *reduction* of barriers for *permanent trade* for the Southern Murray-Darling Basin. An interim threshold limit is placed on the level of permanent trade out of water irrigation areas of 4% pa of the total entitlement (para 63).[9]
- By 2007 compatible institutional and regulatory arrangements for trade should be put in place including principles for trading rules (para 60 and Schedule G).

2. The property framework

The NWI, like the COAG water reform framework, has adopted a property framework. Let us step back from the minutiae to gain some perspective. Throughout history society has accepted

[8] For the first 3%, risk will be borne by the entitlement holder, from 3-6% to be shared between States and the Commonwealth in a 1:3 proportion; and greater than 6% shared equally by the to be shared between States and the Commonwealth.

[9] It is unclear whether the base total entitlement is that at June 2005 or whether it is a shrinking base ie readjusted each year.

that there are degrees and types of property. Elsewhere I have outlined that property is concept which is not of standard content and invariable intensity.[10]

While it is so, legal writing since the time of Romans recognises that there are at least two categories of property: private property, and state or public property. Where resources were in such a state of abundance and purity that restrictions on control and regulation were not necessary the Romans, rather misleadingly, referred to them as 'common property' but recognised that *no* property in them existed. Rivers as such were considered public property and running water was common property. Rights of usufruct, to take and use the resource but not to destroy or fundamentally alter its character could exist, and these were considered rights of property as well, but *ownership* of the resource lay elsewhere. Generally, under Roman law individual consumptive values were given lesser weight than collective values in water. It may be helpful for this discussion to keep these types of property and these values in mind.

Under common law, running water was considered *publici juris* that is, public and common and no property existed in it. Rivers were not considered public property. In England the availability of a plentiful supply of water meant that the public interest in rivers was seldom, if at all, threatened. The English common law focussed on *access* rights not on property rights. At English common law, rights to access became more important than who owned the water.

It has been argued by several well-known commentators that when the regulatory regime in water was introduced in Victoria and other States, it introduced public control while retaining the common law's disdain of acknowledging property rights in water. The regulatory regime was based on control, not ownership of flowing water.

A critique of COAG's property framework

A mix of types of property in water resources is *implicity* acknowledged in COAG policy. In calling for water to be allocated for the environment, and for environmental studies to be done before implementation of any new significant irrigation or dam projects, COAG recognised that public interests are to be considered.[11] Market theory also recognises public property through acknowledging that certain aspects of water such as environmental quality are public goods.[12] So too are instream use of water,[13] the protection of aquifers, and conservation of biodiversity, yet COAG policy does not expressly recognise public property. Nor has COAG or the NWI established an express conceptual framework of property rights in water.

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[10] Citing K Gray and S Gray, 'The idea of property in land' in S Bright and J Dewar (eds) *Land Law : Themes and Perspectives* (Oxford University Press, 1998) p 16 in PL Tan, 'The changing conceptions of property in surface water resources in Australia', (2002) 13 *Water Law,* 269.

[11] See Working Group on Water Resources, *Report of the Working Group on Water Resource Policy to the Council of Australian Governments,* unpublished paper, February 1994, 2,14-15; and Working Group on Water Resources, *Second Report of the Working Group on Water Resource Policy to the Council of Australian Governments,* unpublished paper, February 1995, 4-8. None of the submissions received by COAG disputed that environmental requirements of water bodies should be determined: *Second Report*, 6.

[12] See for example CW Howe, DR Schurmeier and WD Shaw, 'Innovative approaches to water allocation: the potential for water markets', (1986) 22 *Water Resources Research* 439, 441, K Mäler, 'Cost-benefit Analysis: The Basic Facts' in YJ Ahmad et al, *Environmental Decision-Making*, Vol 2, Hodder and Stoughton, London, 1984, 10.

[13] See for example, DW MacDougall, 'Private Hopes and Public Values in the "Reasonable Beneficial Use" of Hawai'i's Water: Is Balance Possible?', (1996) 18 *University of Hawai'i Law Review* 1; LL Butler, 'Allocating Consumptive Water Rights in a Riparian Jurisdiction: Defining the relationship between Public and Private Interests', (1985) 47 *University of Pittsburgh Law Review* 95; D Day, 'How Australian Social Policy Neglects Water Environments', (1996) 9 (4) *Australian Journal of Soil and Water Conservation,* 3.

When water entitlements are created to be definable, identifiable by third parties, transferable, with some degree of stability, then the legal regime in water is transformed from one relying on control to one founded on property. If that is so, then a clear conceptual framework of property is needed. Rose argues that property is the most fundamental right in a liberal democracy and it serves an educative function under the law.[14] In my view, a place for public property needs to be reserved in the property framework. I agree with Epstein who theorised the nature of property in rivers this way:

> It hardly makes any sense for one person to own a river, or some portion of it, if the price of that ownership is to exclude access to its waters by all riparians, and travel and recreation along the river by the public at large. These are cases where the costs of exclusion are high relative to the benefits that it generates.
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> While the primary values of rivers and seas are preserved when they are held in common, further improvement is possible if some limited conversion of water for private use is tolerated ... The underlying instinct shows the importance of making marginal adjustments to fundamental institutions. In principle, the formal problem to be solved (although Justinian and the Romans would scarcely have put it this way) is how to take a body of water, which has value in multiple uses simultaneously, and devise a system of rights which maximises the value from the sum of its common *and* private uses.
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> The Romans had a intuitive sense of the relative values at stake because they in fact adopted an intermediate solution that left the commons dominant, but allowed some diversion from it ... It was routinely held that each of the riparians had a 'usufructuary' interest in the water which allowed them to make limited diversions for domestic uses.[15]

The argument that Epstein makes is compelling. He points to the subsequent evolution of water law in support of his proposition that there is an intermediate position that needs to be struck.[16] In a changing world, where and how does society decide where to draw the lines between protection of the commons and the private use of the resource? Epstein concludes that the ultimate judgement depends on the reconciliation of two opposing claims to the resource with the objective of maximising the total value of the resource. Legal rules need to be adopted to resolve claims to both the common stock (public values) and its yield (private values).

Gap in the present statutory framework

In Australia, as long ago as the late 19th century, court decisions constrained governments' action in recognition of the State's duty to protect current and future public interests in parklands and foreshores. Bonyhady argues that events surrounding those early cases prove that the idea of a public trust was part of Australia's popular, political and legal culture.[17] Judgments in several

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[14] CM Rose, 'Property as the keystone right?', (1996) 71 *Notre Dame Law Review* 329.

[15] RA Epstein 'On the Optimal Mix of Private and Common Property', in EF Paul, FE Miller Jr, and J Paul (eds) *Property Rights,* Cambridge University Press, Cambridge, 1994, 28.

[16] Epstein refers to CM Rose, 'Energy and Efficiency in the Realignment of Common-Law Water Rights', (1990) 19 *Journal of Legal Studies*, 261 on how technology, specifically the use of mills for power, changed the system of property rights in water. The older system of water rights, through numerous disputes which courts adjudicated, changed to a new system that allowed more extensive private use of water. The new position had the same generic feature of the old system but struck the balance in a different way. See Epstein, 30.

[17] T Bonyhady, 'A Usable Past: The Public Trust in Australia' (1995) 11 *Environmental and Planning Law Journal*, 329, 337. The cases involved the Victorian government in 1875 selling Albert Park for development of housing, and the NSW government's 1895 attempt to grant part of the foreshore of Port Jackson for setting up a coal mine under the Sydney Harbour.

contemporary cases have used the language of public trust, although the public trust doctrine as recognised in the US has not been specifically applied.[18]

Briefly, the US doctrine states if the State holds legal title to resources then it acts as a trustee for the benefit of the people of the State. As trustee, the State and its agencies are answerable to the courts in the exercise of their duty. Historically the public trust had fairly narrow limits. Sax, who revives the concept of the public trust in more recent times in the US, maintains that there is no reason why the doctrine should not encompass the situation where diffuse public interests need protection against tightly organised groups with clear and immediate goals.[19] Where private interests intersect with public claims, the former should give way to the latter.[20] A continuing duty is imposed on the State to supervise the exercise of water rights, and reconsider those rights when public trust values are endangered.[21]

In lieu of a clear framework for public property rights in water, should Australian policy-makers and legislators leave acknowledgement and protection of public rights of property for the courts to develop by a doctrine of public trust?[22] Although no declaration existed over water, beds and banks of the rivers were declared *property of the State* in Victoria and Queensland. There may be grounds for arguing that a public trust arises over these resources. While the doctrine allows courts to intervene in the allocation of precious natural resources, it has been criticised as archaic and amorphous, and distinctly an American creation which had no foundation in the English common law.[23] It may be further argued that the courts may not be the best legal institution to protect environmental flows in water. Courts make decisions in fact-specific cases. They are ill

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[18] See *York Bros (Trading) Pty Ltd v Cmr of Main Roads,* [1983] 1 NSWLR 391, 393; and *Worimi Local Aboriginal Land Council v Minister* (1991) 72 LGRA 149, 161 both of which acknowledge the existence of a public right to navigation and anchorage over tidal navigable rivers. See also P Stein, 'Ethical Issues in Land-Use Planning and the Public Trust' (1996) 12 *Environmental and Planning Law Journal* 493, 500.

[19] JL Sax, 'The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention' (1970) 68 *Michigan Law Review* 471, 556 identifies these as the land below the low water mark on the margin of the seas and lakes, the waters over those lands, waters within rivers and streams of any consequence, and parklands. The leading case accepting the public trust doctrine and applying it to land under navigable waters of is *Illinois Central Railroad v Illinois,* (1892) 146 US 387. The California Supreme Court case of *National Audubon Society v Superior Court of Alpine County,* (1983) 658 P 2d 709, Cal., (the Mono Lake case) applied the public trust doctrine to water resources. The literature supporting the public trust doctrine is extensive and largely American.

[20] When it was in the public interest to promote industrialisation, the Supreme Court of Pennsylvania in ruling that the downstream landowner's riparian rights to have a flow of water unchanged in quality and quantity had to yield to an upstream coal company's actions of dumping its waste into the river: *Sanderson v Pennsylvania Coal Co* 86 Pa 401 (1878), rev'd, *Pennsylvania Coal Co v Sanderson,* 113 Pa 126, 6 A 453 (1886), cited in JL Sax, 'The Limits of Private rights in Public Waters', (1989) 19 *Environmental Law* 473, 476-7.

[21] E Swenson, 'Public Trust Doctrine and Groundwater Rights' (1999) 53 *University of Miami Law Review* 363, 391.

[22] The public trust doctrine is seen as an adjunct to legislative schemes especially where those schemes are weak: see P Stein, 'Ethical Issues in Land-use Planning and the Public Trust', (1996) 12 *Environmental and Planning Law Journal*, 493, 501.

[23] Application of the doctrine has been criticised on four main grounds: that the doctrine is vague and indeterminate; that the statements of Roman law on which it is based is of undeserved authority because they were meant as mere introductory comments, or normative statements of what the Emperor wished the law to be; that enactment of environmental legislation has rendered the doctrine obsolete; that the doctrine results in overturning of serious legal processes, and conflicts with fundamental legal institutions such as the 'takings' clause. See for example RJ Lazarus, 'Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine', (1986) 71 *Iowa Law Review* 631; R Walston, 'The Public Trust Doctrine in the Water Rights Context: the Wrong Environmental Remedy', (1982) 22 *Santa Clara Law Review* 63; M Rosen, 'Public and Private Ownership rights in Lands under Navigable Waters: The Governmental/ Proprietary Distinction' (1982) 34 *University of Florida Law Review* 561; JL Huffman, 'A Fish Out of Water: The Public Trust Doctrine in a Constitutional Democracy' (1989) 19 *Environmental Lawyer* 527; and more recently GR Scott, 'The Expanding Public Trust Doctrine: A Warning to Environmentalists and Policy Makers' (1998) 10 *Fordham Environmental Law Journal* 1.

suited to be, and are reluctant, policy makers. They cannot provide the details of a program of public rights which should be part of a state's water allocation and planning policy.[24] It would be preferable to have a clear legislative expression of public property and provision for its protection in a framework of property rights.

Based on Roman law concepts, European and Middle Eastern legal systems have long accepted rivers as *public property*.[25] Amongst others, contemporary Spanish and French laws expressly acknowledge that water in rivers are *public property*.[26] In the USA, water resources are declared as *public property* in many state constitutions.[27] On the other hand, Islamic law views water and 'great rivers' as *common property*[28] while private rights are confined to small volumes of water within well-defined boundaries.[29]

The institution of private property

While state and federal statutes define the term 'property' they are really referring to private property. For example the *Interpretation Act* 1987 (NSW) takes property to mean

> any legal or equitable estate or interest (whether present or future and whether vested or contingent) in real or personal property of any description, including money, and includes things in action.

The starting point for questions about the characterization of property is the oft cited statement of Lord Wilberforce in *National Provincial Bank v Ainsworth* that

> before a right or an interest can be admitted to the category of property … it must be definable, identifiable by third parties, capable in its nature of assumption by third parties, and have some degree of permanence or stability.[30]

That statement, made in 1965 the context of a matrimonial dispute over assets, is often taken as an authoritative pronouncement of the essential elements of the institution of property.

The Australian High Court in *R v Toohey; Ex parte Meneling Station P/L*[31] adopted the test in *Ainsworth,* and concluded that a grazing licence issued under Northern Territory crown lands legislation was not an interest in property because of two features:

- The statutory power of the Minister to forfeit the licence for non-compliance by giving three months notice. No default on the part of the licensee is necessary.
- The inability of the holder to assign the licence to a third party.

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[24] AD Tarlock, New Commons in Western Waters', 85 and DH Getches, 'Pressures for Change in Western Water Policy', 146 both in DH Getches (ed) *Water and the American West,* Natural Resources Law Center, Boulder, 1988.

[25] See LA Teclaff, *Abstraction and Use of Water: A Comparison of Legal Regimes*, United Nations Department of Economic and Social Affairs, New York, 1972. For example Spanish law, influenced by Moorish and Roman laws have since the 13th century considered rivers as public property: 20. French law has since 1669 treated navigable and floatable rivers as destined for public use and not susceptible to private ownership: 33. Iranian laws which bear the imprint of many ancient legal systems, treat all waters in their natural state, whether on private or public land, as in the public domain: 54.

[26] See VP Nanda (ed), *Water Needs for the Future,* Westview Press, Boulder, 1977, 46- 54. For a more recent review of international legal and economic regimes see RN Saleth and A Dinar, *Water Challenge and Institutional Response: A Cross-country Perspective,* unpublished paper written for the World Bank, c May 1999.

[27] Several western constitutions declare or imply that water is the property of the state, for example the Colorado Constitution Art XVI, § 5; Montana Constitution Art IX, § 3, New Mexico Constitution Art XVI § 3: see M Blumm, 'Public Property and the Democratization of Western Water Law: A Modern View of the Public Trust Doctrine', (1989) 19 *Environmental Law* 583, 576 note 12.

[28] Small rivers are predominantly for riparian use. Nanda, 1977 above, 43. See also comments by Caponera below.

[29] For example water contained in a cistern, or in ownership with others who built an artificial channel for water: see Nanda, 1977 above, 42.

[30] [1965] AC 1175, at pp 1247-8.

[31] (1982) 158 CLR 327.

Assignability was considered not to be an essential characteristic of a right of property, but Mason J said that a proprietary right must be 'capable in its nature of assumption by third parties'.[32]

By about the early 1990s the High Court began to refer to indicia of property rather than a test of fundamental characteristics of property. In 1994, the Federal Court in *Western Mining Corporation Ltd v Commonwealth*[33] was required to characterize whether exploration permits issued under Commonwealth petroleum legislation was property.[34] The permits were issued under the *Petroleum (Submerged Lands) Act* 1967 (Cth) for exploration in the seabed in an area of the continental shelf between Australia and Indonesia. The Commonwealth had argued at trial and on appeal to the Federal Court that these permits were not property within the context of s 51(xxxi) of the Commonwealth Constitution.

Every judge of the Federal Court determined this issue against the Commonwealth and ruled that permits were property under the broad understanding of property accepted under the Constitution. When the matter went on appeal to the High Court, the Commonwealth conceded that the permits were property.[35] Although the issue was not argued before them, members of the High Court accepted that following factors were accepted as indicia of property: that the subject matter was identifiable, assignable, stable and potentially of substantial value. It was accepted that the permits were defined by precisely delimited area.[36] The rights conferred under the 1967 Act were virtually exclusive within the permit area. They lasted for six years and could be renewed for another five years albeit that the renewal was only in respect of a reduced area of approximately half the number of blocks subject to the expiring permit. They were not inherently defeasible; liable for cancellation only for sufficient cause and did not require continual adjustment.

On the last point, in the opinion of Gummow J the permits were inherently defeasible and suffered from 'congenital infirmity'. Yet he accepted that they could be characterized as property.[37] In doing so he made the comparison to flexible statutory schemes for fishing permits. The Full Federal Court had made similar comparisions, citing *Minister for Primary Industry v Davey.*[38] From the above cases, the indicia for a private property interest are:

1. a capability of being defined, and to be identified by third parties;
2. a degree of stability in relation to tenure;
3. an ability to be transferred, or otherwise assumed by third parties; and
4. the title through which the right is manifested must be capable of assertion and protection.

Discussion on the characterisation of property tends to focus on whether the subject matter is that of private property. This is just one of the planks in the property framework.

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[32] (1982) 158 CLR 327, at pp 342-343.
[33] (1994) 121 ALR 661.
[34] *Western Mining Corporation v Cth,* (1994) 121 ALR 661, at 682. The permits were issued under the *Petroleum (Submerged Lands) Act* 1967 (Cth) and authorized exploration for petroleum in the seabed in an area of the continental shelf between Australia and Indonesia.
[35] *Commonwealth v Western Mining Corporation Resources Ltd* (1998) 194 CLR 1, at 17.
[36] The area consisted of blocks, which referred to a graticular section within an area: ss 5, 17(2) *Petroleum (Submerged lands) Act* 1967 (Cth).
[37] (1994) 121 ALR 661, at 55.
[38] (1993) FCR 151 at 165 per Beaumont J.

3. Myths or models

Markets depend on four fundamentals: well defined rights to goods or resources; many buyers and sellers in the market; goods or resources which are mobile and easily shifted to different use and users; and reliable and adequate information about the market.[39] Economists of all persuasions agree that the fundamentals of perfect markets seldom exist in practice. The literature on markets failing to perform efficiently under real conditions (market failure) is voluminous.[40] Among the recognised reasons for market failure are externalities, public goods, common property resources and monopolistic situations.[41]

Are there any models of water markets? Writing of the US situation, Dellapenna, while declaring that markets are the best tool for managing resources when markets work reasonably well, argues that 'markets have not worked and will not work for raw water'.[42] He is of the view that markets in the United States have been used to transfer fairly small quantities of water among similar users in close proximity to each other, such as farmers or ranchers within a single irrigation or water management district.[43]

Others such as Haddad are not as pessimistic. They observe growing short term markets in places such as the San Joaquin Valley in California,[44] and even more frequent short term trades in North Colorado.[45] However large-scale long term trades are few and far between.[46] Those who have significant experience studying water markets in the US advocate a strong role for regulation of markets.[47] Regulation, in their view, should relate to the scope and direction of water reallocation, and also to take into account externalities. I'll get to the details later.

Have water markets worked well elsewhere? Boldly introduced in 1981, the Chilean model is said to be the world's leading example of a free market approach to water law, water rights, and water resource management. Since the 1990s the Chilean model has been trumpeted as a success story by many including the World Bank.[48] However Carl Bauer, who has studied the Chilean water market for over a decade writes

> Many proponents of the free market policies, particularly neoliberal economists, oversimplify what is involved in several key processes that market forces depend on but cannot carry out themselves: defining property rights, resolving conflicts and dealing with externalities.[49]

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[39] For literature and discussion on conditions for a perfect market see Victor Brajer et al 'The strengths and weaknesses of water markets as they affect water scarcity and sovereignty interests in the West' (1989) 29 *Natural Resources Journal* 489, 495-7.

[40] See *R Lecomber, The Economics of Natural Resources*, London, Macmillan, 1979, 83-4 for a list of literature critiquing the perfect market paradigm.

[41] Alan Randall, 'The problem of market failure' 23 *Natural Resources Journal* 131 (1983).

[42] J Dellapenna, 'The Importance of Getting Names Right: The Myth of Markets for Water' (2000-2001) 25 *William & Mary Environmental Law and Policy Review*, 317 at 320 and 324.

[43] Ibid at 324.

[44] B Haddad, *Rivers of Gold: Designing Markets to Allocate Water in California,* Island Press, Washington DC, 2000, 58-60; D Sunding, 'Water trades in California', Paper delivered at Water Working Group, University of California, Berkeley, March 3, 2000.

[45] J Carey and D Sunding, 'Emerging Markets in Water: A Comparative Institutional Analysis of the Central Valley and Colorado-Big Thompson Projects' (2001) 42 *Natural Resource Journal* 283.

[46] See Haddad above, 133-140.

[47] Haddad above at 141- 148; B Colby, 'Regulation, Imperfect Markets and Transaction Costs: the Elusive Quest for Efficiency in Water Allocation', in *The Handbook of Environmental Economics,* D. Bromley, ed, 1995 at 475.

[48] C Bauer, *Siren Song: Chilean Water Law as a Model for International Reform,* Resources for the Future, Washington DC, 2004 at 25.

[49] C Bauer, *Against the Current: Privitization, Water Markets, and the State in Chile,* Kluwer, Boston, 1998.

Bauer's early research published in 1998 showed that Chilean water markets were relatively inactive, took place *within* the agricultural sector and did not involve non-agricultural water uses.[50] Later empirical research has substantiated this with the primary exception being the Limari water market which has frequent short term trades within the agricultural sector, with water moving to higher value uses within the same reservoir system.[51] Optimism by commentators on the Chilean water code is based on their ignorance of Chile's political and constitutional system.[52]

What limited the Chilean water market? A range of obstacles were initially identified.[53]

- Physical geography and existing infrastructure made it difficult to redistribute much water.
- Legal and administrative factors for example uncertainly of titles, with rights granted under previous legislation not being registered nor updated. Therefore there were an unknown number of legal valid rights which in theory could be asserted at any time.
- Cultural and psychological attitudes because farmers were determined to hold on to water rights at almost any cost.
- Price signals were weak.

Later research has identified other broader difficulties within the Chilean water regime.[54] Among them are

(1) An adequate framework for river basin management, coordination of multiple water uses and conjunctive management of surface water and groundwater is lacking in Chile.
(2) Reliance on private bargaining to coordinate different water uses and resolve water basin conflicts between consumptive and non consumptive uses has failed.[55] Neither the regulatory authorities (which have very limited functions) nor the courts reliably address the conflicts.
(3) Both economic and environmental externalities are not successfully internalised.
(4) There is a lack of public assistance to poor farmers to improve social equity in matters of water rights and water markets.

We in Australia should pause to note Bauer's observations

> The critical problem is that property rights to water are defined as strictly private commodities in such broad and unconditional terms that there is no effective way to assert or defend public rights and interests - whether these public interests are economic, social or environmental. … Legislation should be drafted to clarify the rules governing the exercise of non-consumptive versus other water rights in managing river basins, dams and reservoirs.[56]

[50] Bauer, 1998 at 56.
[51] Bauer, 2004 at 89.
[52] Bauer, 2004 at 28.
[53] Bauer, 1998, at 56-62.
[54] Bauer 2004 at 124 saying that these flaws were widely recognised by water experts within Chile
[55] He refers to inter basin transfers where there were conflicts between irrigators and electric companies over how to operate dual purpose reservoirs and environmental impacts on transfers. some of the reasons he cites at p 100 are that the economic stakes are high, legal rules not sufficiently clear, and the relative bargaining power of actors are unequal.
[56] Bauer 2004 at 130

4. The law and its institutions

Framework of property

The formula in early Australian water legislation was to 'vest' the use, flow and control of water in the Crown. The legislative formulae in NSW and Queensland continue to use the 'vesting' concept,[57] which connotes a right of property.[58] The Australian High Court in at least two decisions has regarded statutory vesting as confined to the purpose to be fulfilled. The first, *H Jones v Kingsborough Corporation,* arose from vesting rivers in local councils,[59] and the second, *Yanner v Eaton*[60] from vesting fauna in the Crown. In *Yanner's* case, the joint judgment of Gleeson CJ, Gaudron, Kirby and Hayne JJ regarded statutory vesting as nothing more than a legal fiction expressing that a State has the power to preserve and regulate the exploitation of an important resource.[61] Gummow J, in agreement with the majority, applied a decision of the Privy Council that the term 'vest' is of elastic import; and a declaration that lands are 'vested' in a public body for public purposes may pass only such powers of control and management and such proprietary interest as may be necessary to enable that body to discharge its public functions effectively.[62]

While Gummow J took the view that the purpose of vesting was for the limited statutory pecuniary purposes of charging royalties and imposing penalties on the taking of fauna,[63] the majority were of the view that the Crown's interest included guardianship of the resource for social purposes.[64] The majority view in both *H Jones* and *Yanner* consistently accepted that if the purpose of vesting the resource is limited, the extent of vesting will similarly be limited.

Writing in 1969, Clark and Myers strongly disagreed with the concept of 'vesting' in relation to water resources.[65] Arguing that the state's regulatory power was sufficient to carry out the public control of resources, they wrote that

> provided that particular powers conferred on the Crown are ample to carry out its objects, it would be preferable to settle for a system of regulative intervention rather than to invoke conceptual confusion by introducing superfluous notions of property.[66]

Their view would have persuaded the drafters of the 1989 Victorian Act to dispense with the word 'vesting'. Instead the Act states 'the Crown has the right to the use, flow and control of all

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[57] *Water Management Act* 2000 (NSW) s 392, and *Water Act* 2000 (Qld) s 19.
[58] *Coverdale v Charlton* (1878) 4 QBD 104 per Brett LJ, 120.
[59] *H Jones v Kingsborough Corporation* (1950) 82 CLR 282. Dixon J at 320 in applying English authority ruled that statutes which vest highways, and sewers in a public authority which serve a definite public purpose have received a construction according to which the authority takes less than the full property in the site. The same sort of construction appeared appropriate when rivers, creeks and water courses were vested in a water supply authority. The description of the subject vested was indefinite. It is not a piece of land with defined boundaries therefore the purpose is limited.
[60] *Yanner v Eaton* (1999) 73 AJLR 1518.
[61] *Yanner v Eaton* (1999) 73 AJLR 1518, 1525 per Gleeson CJ, Gaudron, Kirby and Hayne JJ.
[62] *Yanner v Eaton* (1999) 73 AJLR 1518, 1538 per Gummow J citing the decision of the Privy Council in *Attorney-General for Quebec v Attorney-General for Canada* [1921] 1 AC 401. The emphasis was added by Gummow J.
[63] *Yanner v Eaton* (1999) 73 AJLR 1518, 1539.
[64] *Yanner v Eaton* (1999) 73 AJLR 1518, 1525.
[65] SD Clark and AJ Myers, 'Vesting and Divesting: the Victorian Groundwater Act 1969', (1969) 7 *Melbourne University Law Review* 237, 244-247.
[66] Ibid, 256.

water in a waterway and in all groundwater.'[67] On that view it is inappropriate to vest water in the Crown. Fisher considers the vesting formula as merely giving a right of primary access to the Crown, a legal mechanism 'through which the public management regime is given effect.'[68]

However other jurisdictions have affirmed that the public's right to its water resources confers rights of *ownership.*[69] Even Chile, when carrying out its neo-liberal water reforms, took care to affirm water as state property.[70] Particularly in the US, courts have held that this right comes with an obligation on the part of the state to protect, control and regulate the use of water for the benefit of its people.[71] The Supreme Court of Hawai'i in 1974 declared that the right to water is one of the most important usufruct of lands and it was specifically reserved for the people of Hawai'i for their common good in all land grants. Thus the ownership of water in natural watercourses remained in the people of Hawai'i.[72] Recently, the same court clarified that the State 'owned' water *not* in the corporeal sense where the state could do with the property as it pleases, but as a retention of such authority to assure the continued existence and beneficial application of the resource for common good. Admitting that the State unquestionably had the power to accomplish much of this through its police powers (or its power as a sovereign), the Hawai'ian Supreme Court ruled

> We believe that the [Hawai'ian] king's reservation of his sovereign prerogatives respecting water constituted much more than restatement of police powers, rather we find that it retained on behalf of the people an interest on the waters of the kingdom which the State has an obligation to enforce, and which necessarily limited the creation of certain private interests in waters.[73]

Express acknowledgement that water is public property will do more than just affirm the State's power to control and use. A framework which clearly acknowledges public property in water will be a starting point for better policy and better drafted legislation. In accordance with the jurisprudence that has developed in the US, such a statement will impose an obligation on the State to protect the public's interest in water, and to limit the creation of private interests in water which conflict with the public interest.

Clear management priorities

To protect public property in water, object statements should also clarify which rights have precedence in the event of conflict, or at the very least, provide for the intersection of public and private rights.[74]

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[67] *Water Act* 1989 (Vic) s 7.
[68] DE Fisher, *Water Law,* LBC, Sydney, 2000, 91. See also chapter 5 particularly at 94, 103-116.
[69] This reasoning is akin to the High Court's joint judgment in *Yanner v Eaton* (1999) 73 ALJR 1518 where the court considered the effect of statutory 'vesting' of fauna in the Crown.
[70] This was done through a constitutional amendment at the same time as enacting their 1981 Water Code. The Code itself declares water is public property: Bauer 1998, 120.
[71] See for example the Hawai'ian Constitution, s 7. See also section 1 which states: 'for the benefit of present and future generations, the State ... shall conserve and protect Hawaii's natural beauty and all natural resources, including land, water, air ... and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self sufficiency of the State'.
[72] *McBryde Sugar Co v Robinson* 54 Haw 174, P. 2d 1330, affirmed on rehearing 55 Haw 250, 517 P 2d (1973), appeal dismissed, 417 US 962, 94 S ct 3164, 41 L Ed 2d 1135 (1974).
[73] *In the matter of the water use permit applications, Petitions for Interim Instream Flow Standard Amendments, and Petitions for Water Reservations for the Waiahole ditch Combined Contested Case Hearing* 94 Hawai'i 97, 9 P 3D 409 (2000), 218.
[74] The Victorian Act did so albeit in a brief and muddled manner. Only stock and domestic rights, rights to rainwater and diffused surface flows were ruled 'off limits' to Crown use and control: *Water Act* 1989 (Vic) s 7(3).

Water has a peculiar correlative quality - it has multiple uses and re-uses, and one use may affect others to a high degree. For that reason, unless there is some weighting or prioritisation given to the purposes, and guidance given to how trade-offs are to be made between competing use or inconsistent purposes, legislation is ambiguous. If prioritisation or trade-offs are not made explicit in legislation, trade-offs are made either in accordance with administrative practices or at the discretion of those who administer the law. To avoid this, policy makers should at the outset clarify policy priorities, which then can be articulated in legislation that weighs competing objectives in a similar manner.[75]

NSW gives an example of how management principles may be framed. The *Water Management Act* 2000 (NSW) puts long term sustainable management at the core of the Act. It avoids an anthropocentric approach and refers specifically to protection, enhancement and restoration of water sources, their associated ecosystems, ecological processes, biological diversity and water quality.[76] In particular management principles for water sharing state unequivocally that the
(a) sharing of water ... must protect the *water source and its dependent ecosystems*; and
(b) ... *basic landholder rights* of owners of land; and
(c) sharing or extraction of water under any other right must not prejudice the principles set out in paragraphs (a) and (b).[77] (Emphasis added throughout).

Basic landholder rights are defined to include domestic and stock rights,[78] harvestable rights[79] and Native Title rights.[80] Other than these basic landholder rights, water is provided through access licences. A clear priority for water sharing is provided by these management principles. These principles together with the precautionary principle were applied in *Murrumbidgee Groundwater Preservation Association v Minister for Natural Resources.* [81]

Whole of river basin management and specification

Almost all commentators on water markets consider specification of the rights to be traded as a key concern. The argument often goes – the more tightly specified the right, the better. The closest to private property regime in the US is the prior appropriation system.[82] Pursuant to this doctrine, the first person to divert water from a stream and apply it to beneficial use had the superior right to keep doing so. Later appropriators had subordinate rights and if the stream flow diminished, those with lower priority must cease withdrawals until higher priorities were satisfied. Unlike the riparian system, prior allocation gave no preference to the use of water by owners of land adjacent to the water.

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[75] See N Gunningham and P Grabosky, *Smart Regulation: Designing Environmental Policy,* Clarendon Press, Oxford, 1998, 380-381. Their comment is made in a general sense and not specifically in respect of water, but I argue it is even more necessary for water because its multi-uses result in numerous competing objectives.
[76] *Water Management Act* 2000 (NSW) s 3.
[77] *Water Management Act* 2000 (NSW) s 5(3).
[78] *Water Management Act* 2000 (NSW) s 52.
[79] *Water Management Act* 2000 (NSW) s 53.
[80] *Water Management Act* 2000 (NSW) s 55.
[81] [2004] NSWLEC 122.
[82] For a brief description of the development of the doctrine see Norman K Johnson and Charles T Dumars, 'A survey of the evolution of the western water law in response to changing economic and public interest demands', (1989) 29 Nat Res J 347. Numerous US texts describe the doctrine for example AD Tarlock et al, *Water Resource Management: A Casebook in Law and Policy*, University Casebook Series, Foundation Press, 5th ed, 2002.

Water rights under the prior appropriation system are defined in terms of an authorization to commit a specific quantity of water at a specific point at specific times for specific uses on specific land with specific time-based priority.[83] The law in western USA recognises that water is a property right, subject to sale and conveyance, and that under proper conditions not only may the point of diversion be changed, but likewise the manner of use. It is further recognised that such change may be permitted by proper court decree, only in such instances as it is specifically shown that the rights of other users from the same source are not injuriously affected by such change...[84]
Far from being unrestrained in its exercise, property rights are specifically subjected to limits where change would injure the rights of other users.

In Australia in specifying water entitlements we have tended to separate the categories of water and specified them within these, that is water within water courses or storages, divertible ground resources, and unconfined surface flows. Within these categories states have tended to specify the first and second categories of water and allow them to be traded. For example in Queensland, a water allocation register is set up to record details of the holder of the allocation, volume of water, purpose of use, point of diversion and other relevant matters.[85] If water is managed under a Resource Operating Licence (ROL) then the entry on the register must show the licence number for the ROL and the priority group to which the allocation belongs.[86] If water is not managed under a ROL, then two more important details are to be shown – the maximum rate for taking the water and the flow conditions under which the water can be taken.[87] These specifications are done after a whole of catchment water resource plan is finalised.

However in many of these plans, it is surface water which is subject to the plan with management of groundwater a secondary objective. The rationale of course is that planning is a massive exercise and one has to prioritise time and resources. In accepting that argument, we still are left with the concern that there needs to be a model of specification that encompasses *all* of the terrestrial phase of the water cycle within a river basin.[88]

Externalities and other matters requiring regulation

Water quality, return flows, environmental protection through regulating use of water on land, regulatory measures for transfers of water rights and licences require detailed consideration beyond the scope of this analysis. Other speakers at this conference will be addressing some of these matters.

In general, Gunningham and Grabosky stress that any design of regulatory measures should start with a regulatory impact analysis. Such an analysis allows more open and transparent government processes, and contributes to better informed decisions.[89] There is no evidence that an analysis was carried out in the lead up to reform, leaving environmental organisations to

[83] Dellapena above at 350.
[84] *Farmers Highline Canal & Reservoir co.* v *City of Golden* (1954) 129 Colo 575, 272 P 2d 629, Supreme Court of Colorado, per Justice Clark, extracted in Trelease and Gould, 1986 above, 198.
[85] *Water Act* 2000, s 127.
[86] *Water Act* 2000. 127(2).
[87] *Water Act* 2000, s 127(3).
[88] See Victorian amendments for regulation of farm dams in *Ashworth v Victoria* [2003] VSC 194.
[89] Gunningham and Grabosky, 1998 above 389-80. A regulatory impact analysis would address issues such as the nature of the problem being addressed, the objectives of intervention, the various options including alternatives to regulation, and consideration of the impacts that different options will have on different groups in society.,

recommend regulatory measures.[90] Thus the regulatory framework, though improved, may lack a coherent approach. Further, for water markets to work, both over-regulation and under-regulation are to be avoided.[91] Without an analysis, this is unlikely to occur.

Some would argue that regulation should be kept to a minimum else unwarranted transaction costs will limit markets. Colby states that appropriate transaction costs are an incentive to account for the social costs of the transfer of water. The challenge is to find means of accounting for these social costs. Where the transfers are within a distinct water shed or management unit, studies in California show that social costs are not significant, on the contrary there are social benefits therefore regulations may be kept to a minimum. Called 'free trade zones' by some American economists, this is already part of the regulatory structure in some Australian states.

One extreme example of accounting for social costs is the 'area of origin' protection allowed under Californian statutes. These provisions enacted in the 1930s allow areas from which water is exported a standing prior right to recall 'all of the water reasonably required to adequately supply the beneficial needs of the water shed area or any of the inhabitants or the property owners therein'. These provisions attempted to protect the economic future of the northern and eastern areas of the state given that much of the southern and western parts of the state were the first to be developed.

While we reject 'area of origin' provisions as extreme, we still need to acknowledge that water has more significance to any community than its commodity value. Outside of the zones, social costs are potentially significant and negotiations over transfers between private parties do not bring these into the transaction. Then the burden should be on the parties to prove to the satisfaction of the regulatory authorities that the transfer does not place the cost on the wider community. Conflict resolution should form part of the transfer process. Where out of zone transfers occur, there should be an opportunity for the community to have access to information and opportunities to state their opinions, and ability to participate in the decision-making process.

Conclusion

Some of the NWI provisions regarding water markets have adopted the 'free trade zone' thinking from the US. These provisions are an attempt to deepen water markets. Lawyers tend to get excited about details and get mired in interpretation of words. What we see or grasp depend on our perspectives or foci or a combination of these. My suggestion is that we shift our field glasses and look at wider institutional issues. Before we embark on further reform that elevates one category of rights we should examine the broader property framework. We should also be prepared to learn from others who have heard the 'siren song' of water markets.

[90] Environmental Defender's Office, *Inland Rivers: Regulatory Strategies for Ecologically Sustainable Management*, Sydney, EDO, 1994.
[91] Saliba and Bush, above.