Risk & Sustainable Management Group

Murray Darling Program Working Paper: M06_6

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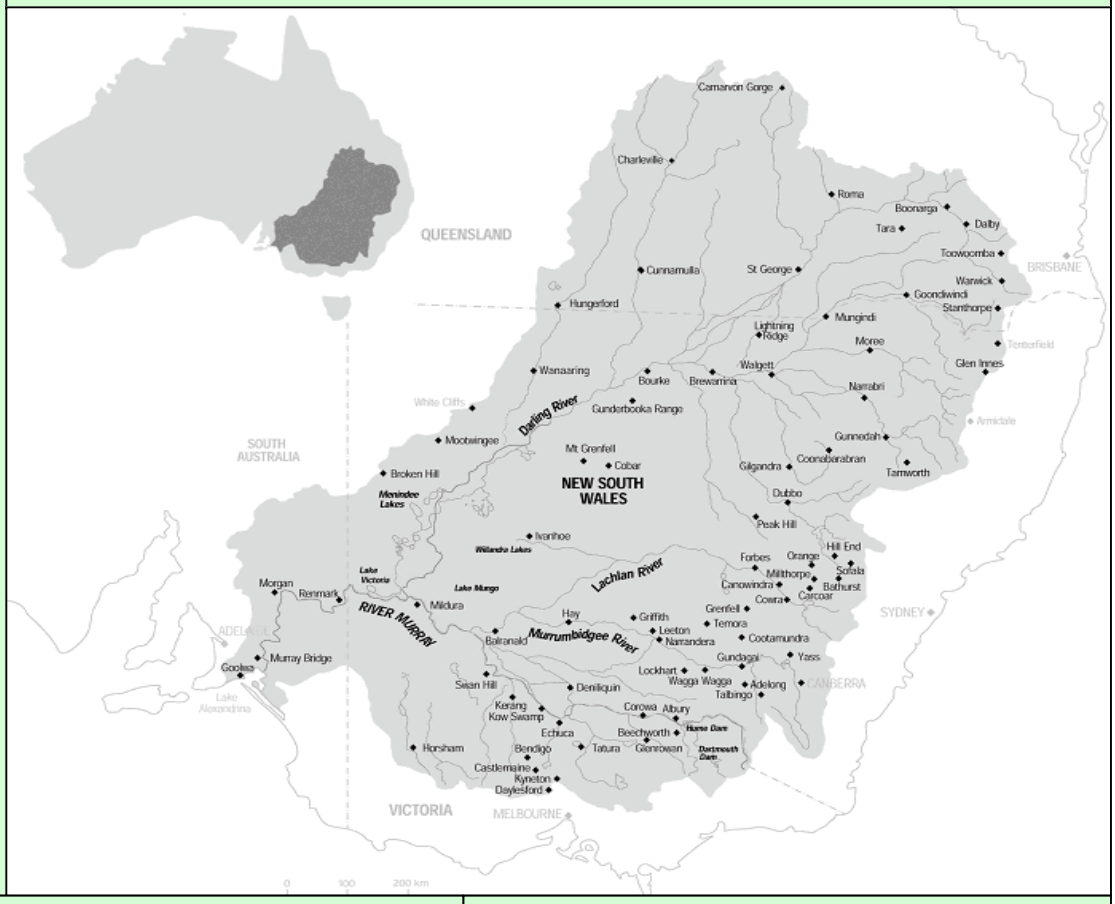

Research supported by an Australian Research Council Federation Fellowship
http://www.arc.gov.au/grant_programs/discovery_federation.htm

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Stephen Bell and John Quiggin

Australia is the world's driest continent and the intensity of conflict over water and water management has been increasing, especially in rural areas. By focussing on the recent federalist compact, National Water Initiative (NWI), we explore the use of market and property rights instruments in water governance in Australia. The question we explore is does the use of such market-based governance instruments imply a reduced role for the state, as new instruments displace previous top down or regulatory modes of governance? It is true that progress has been made in establishing a new property rights and market regime for water and that the operation of such markets has improved the technical efficiency of water usage. However, this paper challenges the view that the new market-based system of governance can be self-managing and thus obviate the need for substantial government involvement. In other words, we argue that the market regime requires substantial 'metagovernance'.

Introduction

Since the 1970s, there has been a perception that traditional forms of hierarchical government are being partly displaced, by market and/or by network modes of governance; a trend that reflects what some scholars see as the 'hollowing out of the state' (Rhodes 1997; Pierre and Peters 2000). The environmental policy arena has witnessed the rise of new policy instruments and governance arrangements, especially the use of markets and property rights instruments, as well as a variety of network and stakeholder forms of engagement (Golub 1998; Jordan et al. 2005). The concept of governance has a wide range of definitions, but here we simply define it as the tools and strategies which governments use to help govern. In some

cases this will involve traditional 'top down' modes of regulation and control. But a wide range of new stakeholder and network modes of governance are also being explored, and the use of markets and property rights, as forms of governance, have also expanded in recent decades (Pierre and Peters 2000).

In the case at hand we explore the use of market and property rights instruments in water governance in Australia. In the face of serious water shortages and growing environmental problems, Australian governments, working through the Council of Australian Governments (COAG), have undertaken or proposed a range of reforms, the most recent of which have been embodied in the National Water Initiative (NWI), a reform program featuring market instruments. The question we pose is do market-based governance instruments imply a reduced role for the state, as new instruments displace previous top down or regulatory modes of governance?

We invoke the concept of 'metagovernance', or the government of governance, as vital to understanding the role of government in establishing, supporting and governing new forms of governance. It is often argued that markets or networks constitute new 'self-organising' forms of governance (Rhodes 1997). On a similar note, 'there is a strong impression conveyed by the NWI that it will create a largely self-managing water management regime through its use of market instruments' (Connell et al. 2005: 57). It is true that progress has been made in establishing a new property rights and market regime for water and that the operation of such markets has improved the technical efficiency of water usage. However, this paper challenges the view that the new market-based system of governance can be self-managing and thus obviate the need for substantial government involvement. In other words, we argue that the market regime requires substantial metagovernance.

We argue this for two main reasons. First, tasks such as the establishment of water markets and the new property rights regime, not to mention their ongoing functioning amidst high transaction costs, will require substantial government involvement, adjudication and support. Second, the market governance regime is unlikely to substantially improve environmental outcomes. Thus far, the activation of water markets appears to have *increased* not decreased rural water usage. This suggests that any progress on the environmental front will continue to require a very substantial role for government. The environmental policy arena has traditionally been inherently regulatory in nature (Weale 1992), and this situation is not likely to substantially change in Australian water management.

Governance and Metagovernance

A theme of much of the governance literature has been an historical narrative about changing state capacities and state-society relations in western liberal democracies. Since the 1970s but especially in more recent decades, conservative and neoliberal critiques of the state have been joined by themes invoking globalisation and regionalism, all of which have argued that the state has become weakened, hollowed out

or outmoded (Pierre and Peters 2000; Marinetto 2003). Issues such as the rise of social diversity, political cynicism and legitimacy issues, and societal demands for more inclusive forms of decision making have also been seen as new challenges to the centralised, hierarchical state (Kooiman 1993, 35; Mayntz 1998; Teisman and Klijn 2002; Keating 2004). Relatedly, there has also been a growing recognition of interdependencies between the public, private and community sectors, and, as a result of these challenges, governments have been both pressured and somewhat more motivated to attempt to 'offload' functions either to markets or to various kinds of network or devolved governance arrangements.

In such accounts, however, the role of the state tends to recede to an ambiguous or peripheral role, a problem also apparent in earlier pluralist and corporatist theorising (not to mention standard neoclassical theories of the market). Partly in response, more recent governance literature has in part challenged the hollowing out thesis (Weiss 1998; Marinetto 2003; Kenworthy 1997; Bell 2005; Holliday 2000) and has tentatively sought to 'bringing government back in', especially in relation to discussions about metagovernance. Metagovernance describes the role of the state in the oversight, coordination and perhaps the resourcing of governance arrangements. As Whitehead (2003, 8) argues, 'metagovernance… focuses explicitly on practices and procedures that secure governmental influence, command and control within governance regimes'. The concept of metagovernance also highlights that fact the government has prime carriage of the management of legitimacy and accountability issues in relation to governance arrangements, especially since it is governments alone (at least in democracies) that carry the formal mandate of democratic legitimacy. Metagovernance does not deny the existence of markets or networks, but maintains that they operate in the context of what is essentially a public-private partnership, ultimately overseen or managed by the government. As, Scharpf (1997) puts it, these are systems which act 'in the shadow of hierarchy'.

Seeing markets from this perspective also transposes governance concepts into the realm of political economy. Water markets are not the spontaneous products of civil society, in which governments may choose to intervene or not. Rather, water markets should be seen as a form of public-private partnership, a governance system promoting private coordination and devolving important water use and adjustment micro-decisions to users, but occurring under the oversight and coordination of public authority. This conceptualisation is far removed from the notion of a 'self-regulating' market. Further, following Anderson (2003: 8), we can also see markets as 'socially penetrative' modes of governance that potentially help empower the state's governing capacity in various ways (see also Keating 2004).

The problem, however, is that despite the contributions just outlined, the theory of metagovernance (not to mention its empirical exploration and testing) is underdeveloped. Metagovernance is a relatively new concept in the political science literature (though see Scharpf 1994; Jessop 1997; 2002; Whitehead 2003). There is still no coherent understanding of the nature of metagovernance in relation to different modes of governance, nor much understanding of the political ramifications and costs associated

with metagovernance. Nor do we know enough about the political, institutional and administrative requirements for effective metagovernance; although hypothetically various factors suggest themselves in relation to the case at hand.

First, metagovernance in this system will require efforts to deal with high levels of uncertainty, driven in part by highly variable hydrology and environmental conditions, but also by the uncertain nature and potential variability of property 'rights' and trading conditions in the water sector. Attempts to ameliorate this problem, especially in relation to providing clear and transparent property rights and trading rules, are important because high levels of uncertainly will inhibit investment and farm adjustment strategies aimed at water conservation. Second, the market and property rights regimes in question will not be costless to establish or operate and will inevitably involve high transaction costs, most of which will need to be managed by governments. Third, we argue that market governance arrangements are not likely to deliver appropriate environmental outcomes. If this is so, metagovernance arrangements will be required to steer the system towards the achievement of such environmental goals (probably via non-market means), as well as deal with deal with definitional and operational disputes in relation to the achievement of 'ecologically sustainable development'. Fourth, metagovernance must deal with the burdens of risk sharing, especially in relation to what will become contentious issues of adjustment assistance and compensation.

Clearly, these governance and especially metagovernance issues raise difficult political and administrative challenges for governments and public officials. Below, we will investigate the specifics of these challenges in more detail and demonstrate the scale of the metagovernance challenges that lie ahead. We will also address Andersen's (2004) hypotheses about whether this type of 'socially penetrative rule' via markets and new property rights regimes can help 'enlarge state competencies'.

Water Management Policy: The Key Initiatives

For most of the 20th century in Australia, and reflecting practices in other water scarce systems, such as California, rural water allocations and especially irrigation water were allocated through political or administrative procedures rather than markets. In the face of growing environmental and water scarcity issues by the 1980s (DEH 2001b), the focus of water management turned from expansionary goals and large-scale engineering projects to economic efficiency and environmental concerns. Reflecting wider neoliberal public policy trends, the dominant response has been to rely on market-based approaches to such issues (Quiggin 1996). A similar trend has been evident internationally in relation to water management. The leader in this development has been Chile, where a system of private property rights was introduced in 1980. Easter, Rosegrant and Dinar (1999) conclude that markets have produced improvements in the efficiency of water use, but stress the importance of transactions costs, and the need for government

policies to keep such costs low.

A major shift in contemporary Australian water management came with the signing of the 1994 Council of Australian Governments (COAG) *Strategic Framework on Water Reform* (DEH 2001a). The COAG framework was an agreement between the federal and State governments (the latter of which have direct responsibility for water management). Central to this was the establishment of a system of tradable property rights for water (Brennan and Scoccimarro 1999). However, the reforms also included provisions for environmental water allocations and sought to establish principles of sustainable development in water management.

The COAG agreement was followed up in 1997 by an upper limit on water extractions from the Murray-Darling system (Australia's largest river catchment); the so-called 'Cap' – which fixes water usage in relevant catchments to 1993-94 usage levels. The COAG Framework was also incorporated into the federal National Competition Policy (NCP) which provides individual States with monetary incentives to progress water reform following the COAG framework. Subsequent State legislation has sought to operationalise the adoption of market mechanisms and property rights regimes for water in order to promote water-use efficiency and to facilitate structural change. Catchment-based water planning arrangements have also been established to promote water planning processes in which stakeholders participate in the planning of water allocations between users and the environment (Bell and Park 2006; Ewing 2003; Connell et al. 2006).

In 2004 a new COAG agreement between the federal and State governments - the National Water Initiative (NWI) - extended earlier work and was aimed primarily at achieving greater uniformity across State water management frameworks, including an expansion of water markets, clearer definitions of property rights, a commitment to catchment-based water planning arrangements, the allocation of $500m of public funds for water recovery and increased environmental flow, and the establishment of a National Water Commission to help oversee the these changes. These initiatives have set a substantially new framework for water management in Australia. The new property rights regime for water will encourage a water market and water trading, with the aim of achieving greater efficiency and economy in water usage, whilst the combination of the Cap and catchment-based water planning regimes will work to claw back water in overallocated (water available under access rights that exceeds environmental sustainability) or overused (actual water usage exceeds environmental sustainability) river systems for environmental purposes.

Establishing a Property Rights Regime

The changes in question parallel the type of property rights regime increasingly used in the management of common pool resources, such as the atmosphere, fisheries or water resources. This commonly involves establishing an environmental limit on total resource usage and a system of tradable rights and a market in order to foster efficient, or at least cost-effective, allocations within that limit. Much of the analysis of property rights regimes focuses on the creation of private property rights, which are ideally

seen as precisely defined, enforceable through civil law and fully tradeable. This view of private ownership as the appropriate response to common pool problems may be traced back to Scott (1955) and reached the peak of its influence in the 1970s with the rise of the (private) property rights school of economic analysis (Furubotn and Pejovich 1974; see de Soto 2000 for a recent popularisation).

However, as (Connell et al. 2005: 101) point out, the use of such instruments is inevitably part of a wider package of instruments and measures. These typically include an environmental limit and other regulatory interventions, research, information sharing and community engagement measures, appeals and review procedures, institutional oversight, and perhaps adjustment and compensation arrangements. The arguments of Connell et al. may be related to the literature on common property institutions that developed in response to the arguments of the private property rights school (Ostrom 1990, Quiggin 1988). Beginning with the observation that 'common property' was not, as assumed by writers in the private property rights school, a synonym for open access, writers on common property institutions showed that, under appropriate conditions, such institutions have provided effective management regimes for common pool resources. Quiggin (2001) argues that management of complex river systems inevitably involves a mixture of private, common and state or public property. It follows that a complete analysis of property rights must take account of the continuing role of the state and of substantial elements of common property.

Aggregate limits

For example, an aggregate limit on extractions, called the Cap, was established following the 1994 COAG meeting, coming into effect in 1995. The Cap required that, on average, extractions from catchments should not exceed the level prevailing in 1994. The Cap was designed as an interim measure to halt unsustainable growth in extractions. Following this, a number of processes were put in place to determine sustainable extraction levels for individual catchments and the Murray-Darling Basin as a whole. In particular, State initiatives have sought to establish catchment-based water planning mechanisms involving community input. These processes, a form of network governance generated significant difficulties and a range of metagovernance failures (Bell and Park 2006).

Creating tradeable rights

The creation of water markets across different State jurisdictions has required major changes to systems of water rights or entitlements. Traditionally, water rights and land rights in Australia were bundled together. The reforms outlined above have sought to separate water rights from land ownership and to enhance their security and tradability in order to support a market regime

In the face of increasing environmental problems and growing uncertainty about the direction of policy, water users, rural communities and major credit institutions such as banks have lobbied for more secure and predicable system of entitlements. Governments especially at the State level were faced with the

challenge of providing higher levels of security for water users while retaining the ability to adapt policy in the face of emerging knowledge of environmental need. In NSW, for example, the *Water Management Act 2000* and subsequent *Water Management Amendment Act 2004* changed the nature of water rights. Nevertheless, insofar as it conveys an analogy with freehold title to land, the notion of 'property rights' for water is misleading. A water right is a license, the terms of which depend on the operation of a complex and variable system of resource management, involving a mixture of administrative intervention by the state and collective management by or on behalf of license-holders as a group.

Under Australian state laws the Crown owns all water resources. With a higher value for water, the incentive for private appropriation has increased, threatening to undermine existing state-created entitlements. Water users have sought to capture flows at various points in the water cycle, including surface flows, groundwater and return flows from irrigation (Brennan and Scoccimarro 1999). In response, State ownership has been asserted ever more broadly, first by regulating private extractions from streams, then by controlling the use of dams to capture surface flows of water before they enter streams, and then by controlling access to and use of groundwater. The final step in this process has been the direct assertion of State ownership of rainwater, reflected in controls over the planting of trees in areas where runoff is needed to fill streams and storages. In this context, water 'rights' do not constitute ownership but rather a tradeable access entitlement. Their existence is the result of conscious government policy, and their survival depends on their success in promoting the achievement of public policy objectives.

The changes under discussion have also seen water licenses became share-based rather than volumetric. Unlike licenses of the past, which entitled the holder to a fixed *volume* of water, contemporary licenses entitle the holder to a fixed (though variable) *share* of available water. The actual volume of water from which this share is drawn is determined by government and can vary annually in the context of changing hydrology, seasonal conditions and catchment-based water management plans designed to allocate water between users and the environment. Secure water access entitlements (or 'rights') are now to be defined as perpetual shares of a water resource as specified in a specific (usually catchment-based) water plan. By the end of 2006 all such water access rights and a record of water trading are to be recorded in publicly accessible water registers.

The reforms also increased the duration of licenses. Originally, entitlements were extended to fifteen years – termed a 'permanent water right'. However, water users protested that limited period entitlements would not provide the security necessary for investment, especially in relation to rural adjustment (Peters 2003). In response, amendments to the NSW *Water Management Amendment Act 2004* extended licenses to perpetuity.

A full market system ?

It is generally agreed that the current NWI framework gives water users improved security and a

more stable property rights framework in which to make investment and farm management decisions. These changes have laid the foundations for the development of water markets and what will inevitably be an evolving property rights regime. The changes to property rights mean that water licenses have become tradable assets which can, in principle, be bought, sold, leased or used as collateral.

However, many of the markets that are required if these possibilities are to be realized are either thin or non-existent. Crase, O'Reilly and Dollery (2000) have argued that the permanent water trading in NSW is thin indeed, citing resource control issues, uncertainty and transaction costs as important drivers of such an outcome. More recently, Brooks and Harris (2005) conducted an analysis of the water markets in Victoria covered by Watermove, an internet based exchange for water rights, which facilitates trade in six Victorian water trading zones, clearing on a weekly basis (Watermove 2006). Brooks and Harris find that, for the majority of trading zones there is little trading activity. There are only three trading zones in which the markets for temporary water rights are reasonably active and liquid on a weekly basis, and none for which markets for permanent rights are liquid.

Finally, though licenses may be more secure than before, State ownership of water remains unchanged. While comparable powers of eminent domain exist in relation to land, the complex management issues associated with water mean that it is unlikely that either property rights in water, or trade in water markets will ever be as free of government intervention as are ownership rights over, and markets in, land or personal property in general.

Transaction Costs and the Operation of Markets

Connell et al. (2005: 101) argue that a property rights-based market regime may or may not be administratively simpler than a more traditional regulatory regime. It depends on the nature of the relevant transaction costs and associated requirements for regulatory intervention. In the case at hand, transaction costs and the regulatory oversight is likely to be high.

Transactions costs – general

The standard micro-economic analysis of markets focuses on the case of markets where there are no transactions costs. In practice, all market transactions generate some costs, but the normal operating assumption of micro-economic analysis is that these costs are small enough to be disregarded. Yet transactions costs are likely to be significant where markets are 'thin' (few buyers or sellers), where there is substantial uncertainty about demand or supply, or where the good or service being traded is not homogeneous in quality. All of these conditions apply to markets for water licenses, in which licenses may be traded either temporarily (normally for a single year) or permanently.

Transaction costs include the costs of: obtaining information; finding other traders; negotiating

mutually beneficial trades; effecting and registering these trades; and enforcing contracts (Williamson 1996; Rao 2002). With the current Watermove market for temporary trades of water in southern Australia, sellers pay a three per cent commission, and buyers pay a $55 flat fee plus a transfer fee of up to $112 for each transaction (Watermove, 2005). This direct cost represents only part of the transactions costs.

The ability and right to use water also depends on the transfer of water delivery rights and the acquisition of a water use right. In most cases these rights involve additional transaction costs (ACIL Tasman 2003; Marsden Jacob and Associates 1999). Because of the geographical dispersion and potentially important disaggregated time dimensions of delivery rights, transaction costs are likely to be significant.

Because information about the likely availability of water (both allocations for irrigation and natural rainfall) becomes available gradually over time, decisions to buy and sell water are subject to considerable uncertainty. In an idealised market model, this uncertainty would be dealt with through a set of markets in contingent claims, such as rainfall futures. In practice, these markets do not exist and uncertainty gives rise to additional costs. Further, there are a number of government imposed restrictions on transfers across regions which add to uncertainty for the individual and to transaction costs. The acquisition of use rights for new uses or users currently is subject to uncertain and often costly negotiation with authorities. In addition to the measurable costs noted so far, uncertainty about policy together with uncertainty in the minds of risk averse-traders as to whether allocated water can be purchased or sold on the spot market as required adds to transaction costs.

Water may appear to be a fairly simple commodity. In reality, however, both the quality of water and the environmental cost of withdrawing it from one location and delivering it to another differ substantially from place to place and time to time, so that each transaction is, to some extent, unique. In particular, if irrigation is increased in areas of recharge to water tables, or areas where the soil contains high concentrations of salt, negative effects on other parts of the catchment (externalities) will arise. Hence, governments may either prohibit transactions that would have this effect or create a system of exchange rates with the effect that water applied in one location is more costly than water applied in another.

Transactions costs with intercatchment trade

If governments have made progress in establishing a property rights framework for water, some of the difficulties associated with actually managing market-based policy instruments are evident in debates over trade between catchments. The simplistic analysis commonly applied to the creation of tradeable water rights, in which transactions between individuals are socially beneficial if they result in water being used where it is more highly valued, is unreliable in the case of trade between catchments.

The first problem is that the environmental and social cost of water use differs between catchments. Some catchments are heavily over-allocated, in the sense that the amount of water allocated for irrigation

exceeds the sustainable capacity of the catchment, while aggregate allocations in other areas are at or below the sustainable level. The object of policy should be to reduce water use in areas of excess allocation, for example by scaling back the volume associated with allocations in such areas. It is likely that, if aggregate allocations in a given catchment are reduced substantially, the market value of water in such catchments will rise, since irrigators have made investments on the basis of the previous, larger allocation. Trade between catchments allows irrigators in such catchments to purchase rights from other catchments, thereby partially reversing the reduction in usage that was the goal of policy. This tendency might be offset by a (yet to be established) system of exchange rates between catchments (and in some cases between areas within catchments) designed to reflect marginal rates of environmental damage.

A related problem is that of 'stranded assets'. If trade between catchments results in a reduction in water use for irrigation in a given catchment, the benefits generated by the irrigation infrastructure in that catchment decline correspondingly. However, the sunk capital cost of the infrastructure is unchanged, and costs of operation and maintenance are unlikely to decline proportionally with the reduction in water use for irrigation. The surplus assets are said to be 'stranded', since they can neither generate an adequate return on capital nor be moved to a better location (Freebairn and Quiggin 2005).

A third problem pertaining to transfers of water rights between catchments is that, as the value of agricultural output declines in catchments that are net exporters of water rights, the economy of the associated region will tend to contract, resulting in reduced demand for the services provided by country towns, such as schools, shops and banks. Not surprisingly, there has been strong resistance to the development of a market for permanent transfers of water rights **(**(Freebairn and Quiggin 2005**).**

Subtle details of the conditions under which such transfers take place, such as the treatment of implicit contracts for the supply of infrastructure services, can have important implications for the social, economic and environmental outcomes of trade between catchments. These details will not emerge spontaneously from market processes, but arise from the governance of the trading system itself. Hence, the challenges for metagovernance will be enduring.

Achieving Environmental Goals?

The original COAG documents contained an explicit expectation that the creation of a water market would lead to the more efficient allocation of water to high value-added users. The expectation was that markets would create incentives for water-use efficiency, incentives for the development of water-saving technology, as well as driving water to higher-value users and promoting structural change in rural industries (Beare, Heaney and Mues 2003: 3; Bari 2002: 9). Moreover, if water is purchased for the environment, a water market would also allow water to be acquired from the lowest value users, minimising the economic impact of strategies designed to increase environmental flows (Beare, Heaney and Mues 2003, 3). The COAG reforms were therefore accompanied by the view that more efficient water usage

would help achieve environmental goals.

Experience under the COAG reforms has seen a shift in water usage to higher value added users. In most cases, high-value activities are more water-intensive. The upshot has been an increase in water demand as water trading has expanded. The period 1985 to 1996-97 saw a 76 per cent increase in water used for irrigation (Shadwick 2002: 11). The imposition of the Cap in 1995 brought an end to the rapid growth in extractions, which had already reached unsustainable levels in many catchments. However, continuing pressure for growth in extractions is reflected in the fact that the Cap has been exceeded on a number of occasions, particularly in regions that supply extensive irrigation areas.

Also, those holding little used 'sleeper' or 'dozer' entitlements have come into the market as sellers. Sleeper licences were water licences owned but not used, whilst dozer licences were only partially used. The most dramatic example is that of interstate trade. Young et al. (2000) note that in virtually all (99 per cent) of interstate water trades the water traded was not being used at its point of origin. Even in the favourable case where trade was 'downstream', the result must be to diminish flows downstream of the new point of use. It has also been the case that those on-selling their water entitlements have been temporary traders and have not permanently sold their water entitlements. This is partly because of substantial uncertainty in the market. In addition, licences holders often wish to retain the rising capital value of their licenses. Also, as Granovetter (1985) observes, all forms of economic interaction are rooted in social relations and it is apparent in this case that farmers are not usually not keen on 'structural adjustment', especially if this means selling up and leaving the land or their communities.

With the aggregate availability of water from irrigation systems constrained by the Cap, the increased market value of water has led to growth in unmet demand. As a result, water users have pursued more intensive exploitation of flows at other points in the water cycle. One such response has been the capture of surface flows through farm dams, before these flows enter regulated river systems. Another is greater use of groundwater extracted from the water table through bores. In both cases, the ultimate result is to reduce flows in river systems. Water managers have responded in turn and the capture of surface flows and groundwater has been increasingly tightly regulated (Environmental Protection Authority 2003).

The only remaining margin for capturing additional water is direct exploitation of rainfall. Whereas rainfall has traditionally been treated as freely available to the owner of the land on which it falls, governments are now considering restrictions on the planting of trees and other water-intensive crops, with the objective of maintaining surface flows into catchments and recharge of groundwater. The issue is complicated by the fact that recharge in areas where water tables are already high may contribute to dryland salinity (Bowmer 2006).

Therefore increased efficiency has been achieved via the use of markets but key environmental goals have not been achieved. Meyer (2000) observes that 'The notion that improved water efficiency will free

water for environmental purposes is simplistic and will not work. On the contrary, the demand for irrigation use is likely to increase with water savings unless there is some explicit mechanism to encourage saved water to be reallocated' (

This is not a surprising outcome. Jevons (1865) observed the apparent paradox that an increase in the efficiency with which a resource is used may increase the demand for that resource. The 'paradoxical' outcome is consistent with neoclassical theory provided that the elasticity of substitution between factors of production is sufficiently high. Nevertheless, it surprised Jevons and retains its capacity to surprise policymakers today. Given such outcomes. policymakers are learning not rely on markets to achieve the desired reduction in water consumption through the price mechanism.

A related issue confronting water managers has been the creation of a water pricing regime which takes the full costs of public water infrastructure into account. Full cost recovery of public water infrastructure through bulk water pricing is also expected to encourage low value added users to trade or lease their water entitlements to other more efficient users. IPART (2005: 14-15), the body responsible for water pricing in NSW, estimates that charges for water taken from rivers regulated by State Water are broadly equal to the level required for full cost recovery, but that charges for unregulated rivers and groundwater are well below the required level. These charges are to be increased at a rate of 10 per cent per year in excess of the inflation rate until full cost recovery is achieved.

In recent years certain limited 'environmental' criteria have been feed into this process, for example, to reflect the costs of providing fish bypasses around weirs etc. A more recent issue that the Tribunal has been dealing with is the extent to which issues such as environmental flow for rivers should be factored into base water pricing, hence passing on the costs involved in such an initiative directly to water uses via base water prices. In a recent report on bulk water pricing, IPART (2005) argued against a substantial extension of the use of environmental criteria (eg. environmental flow) into it base water pricing arrangements, mainly because of scepticism about the efficacy of using pricing instruments to substantially change water usage practices.

Water prices, are not high enough to encourage substantial changes in farm practice or rural industry adjustment of the type that would lead to significant reductions in water usage or to an increase in environmental flow in rivers. The risk is that water consumption is too inelastic to even high prices, especially in the short-term as changes in farm practices and land use can only take place over time. Moreover, if governments were, through some other instrument, to set a higher price to achieve the desired reduction in water consumption, they would be guessing as to what price was necessary, so that there might be a considerable period of trial and error with regulated markets.

The implication is that any moves to substantially reduce water usage and/or to increase environmental flow will need to occur via regulation and/or government water purchases in water markets;

ie. via a metagovernance strategy. Whilst it is probably true that uncertainty and the possibility of trading water leading to much higher prices will potentially provide an inducement to farmers to change their practices and to use their water more efficiently, there is no escaping the need for a substantial role for government to help achieve environmental goals. The major intervention thus far has been the Cap. But to make progress in reducing water usage in over stretched catchments further interventions are required.

The major shift required will clearly be the need for public water purchases in markets as well as other public measures aimed at water reductions, both to help increase environmental flow. One problem here was the failure to buy up sleeper and dozer licences before water prices began to rise substantially. It is estimated that in the Murray-Darling basin, these licenses amount to about 30 per cent of licensed water allocation. As mentioned above, the new water trading regime has activated these licences. They are being bought up, especially by irrigators, to try and maintain if not increase water consumption. According to Fullerton (2001: 152) 'sleepers and dozers have caused at least as much chaos up and down the Murray-Darling as the Cap, because their awakening simply winds back the amount of water available to existing licence holders. So much for "increased efficiency" leading to less use of water …'. COAG was warned early on about this problem: 'Dormant rights should be substantially reviewed before the creation of a system of tradeable water entitlements' (COAG 1994). In hindsight the licences should have been frozen or bought up cheaply and the water utilised as environmental flow.

The main option at present is to use public funds to buy water or fund water saving projects. The NWI has an allocation of $500m for water recovery and increased environmental flow, including public water purchases for environmental purposes. At this stage, however, policymakers have shown a strong preference for engineering projects aimed at reducing water losses, and have been reluctant to consider purchasing water rights from irrigators.

Although some individual irrigators would doubtless be willing sellers, the organizations representing them are, in most cases, strongly opposed to the idea, as are many organizations representing rural communities. With the exception of South Australia, State and Commonwealth governments have rejected the idea. Yet, in the absence of repurchase, it seems likely that markets for permanent transfers will remain thin, and that policy measures designed to increase the technical efficiency of water use will be selected on an arbitrary basis, focusing more on short-term political appeal than on cost-effectiveness (Quiggin 2006).

Conclusions

It has been widely recognised that a re-allocation of water resources from lower to higher value-added users is needed to improve the allocative efficiency of extractive water use, and that market-based instruments are an appropriate tool for this purpose. The use of market-based instruments has also been encouraged as an appropriate method of ensuring environmentally sustainable resource use. However, it is important to distinguish these goals. More efficient water use and shifting water usage to higher value-

added users is not necessarily compatible with the environmental goal of reducing aggregate water use in order to increase environmental flow. Indeed, it is has been argued that market trading and pricing will not deliver the desired environmental goals in this case; these goals appear to be beyond the reach of market instruments, at least as currently deployed. In this respect, Andersen's (2004) hypotheses about whether 'socially penetrative rule' via markets or other modes of governance can help 'enlarge state competencies' has only been partly vindicated. It is true that sharing decision making about water allocations between the private and public sectors under the banner of market-based governance is still potentially attractive in that it provides an alternative to a fully top down governance system and can hopefully utilise informed micro-level decision making by users. However, the limits of this mode of governance in this case have been demonstrated.

This paper has also argued that the use of markets as a form of governance does not amount to a simple off-loading of tasks or responsibilities to private sector actors. The use of market instruments cannot be understood simply in terms of a theory of markets as autonomous and spontaneously-arising mechanisms for resource allocation. Policies implicitly based on such theories have produced perverse outcomes in the past and will continue to do so. Instead, the notion of markets as an active public-private partnership needs to be taken seriously. The specific requirements for public involvement and 'metagovernance' will vary from case to case. In this case the requirements of metagovernance are onerous indeed. Connell et al. (2005: 86) argue that 'the economic and political transaction costs of Australian water management will remain high'. More broadly, considerations of issues related to public goods (such as substantive environmental outcomes) and transaction costs and uncertainty underline the limitations of market-based instruments in this case and point to the requirements for substantial metagovernance and the challenges therein. Thus far may substantial problems of establishing a property rights system for water have been tackled but issues such as achieving environmental goals or issues of compensation have only just begun to be tackled and promise daunting challenges ahead.

The notion of markets or other forms of governance, including networks, as forms of *public*-private partnership also highlight the limitations of some strands of current governance literature which seek to portray governance arrangements as 'self organising' or which seek to down play the role of government. In the case at hand, most of the heavy lifting will need to done by government with markets and networks playing at best a supportive role. This suggest the need to more fully integrate research into metagovernance into ongoing governance research. Just as in earlier debates about pluralism and corporatism, the current debates and research agendas in the governance arena require a clearly articulated theory of the state. Simplistic notions of 'hollowing out' will no longer do.

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