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## GLOBALIZATION AND WATER RESOURCES MANAGEMENT: THE CHANGING VALUE OF WATER

AUGUST 6-8 AWRA/IWLRI-UNIVERSITY OF DUNDEE INTERNATIONAL SPECIALTY CONFERENCE 2001

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### EMBEDDING SOCIAL CAPITAL IN THE CONSTRUCTION OF WATER MARKETS

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**ABSTRACT:** The vital importance of water to Australia, the world's driest inhabited landmass cannot be overemphasised. Water has played a significant role in the nation's evolution and is crucial to Australia's current natural and economic wealth. Historically, the tenet underpinning water management was the steadfast belief that water was a public good best left in state control. A total rethinking of this paradigm is currently taking place. Since 1992, in moves unprecedented in their comprehensiveness and radicalism, the Council of Australian Governments (COAG) has committed to a sea change of policy revisions, which aim to apply market principles to the management of water. This paper critiques the feasibility of constructing water markets in terms of achieving environmental gains, by investigating what such a market model leaves out. It is premised on the notion that markets are permeated by power relations and embedded in social processes; therefore, for water markets to be efficient *and* environmentally effective, they have to be constructed to allow for this embeddedness. The paper identifies social capital as a primary building block in this construction and proposes a framework, which allows for its inclusion. Such a framework provides us with fascinating avenues for exploring the roles that networks, institutions, community, fairness and equity and the state can play in the construction and development of water markets.

**KEY TERMS:** water markets; social capital; embeddedness; networks; institutions; community.

### INTRODUCTION

Water and its quality, scarcity and management are issues of significant global concern (Fisher, 2000; Linden, 2000). There are dire predictions of water wars (Ward, 1997, pg. 71) accompanied by claims that 'water will be to the 21st century what oil was to the 20th (Tully, 2000, pg. 342).

The vital importance of the world's most precious resource (Reisner, 2000, pg. 72) to Australia, the world's driest inhabited continent cannot be overemphasised. Water has been acknowledged as 'gold' (Hill, 1946) and referred to as the 'life blood of the country' (Nimmo, 1963). Indeed, no other commodity has played a more significant role in the nation's evolution (Pigram, 1988, pg. 153). Water is crucial to Australia's current natural and economic wealth and accounts for approximately \$90 billion of infrastructure investment (Department of Agriculture, 2000b).

Historically, debates on water management have been ad hoc in nature (Dovers, 2000, pg. 4) and have taken place within a vacuum of comprehensive national policy guidelines for the development of Australian natural resources coupled with a lack of national information systems, data sets and baseline data critical for proper management of natural systems (Dovers, 1995, pg. 146). The first attempt at 'nationalising the Australian environment' was made only recently, with the 'Agreements of 1992' (O'Brian, 1993, pg. 7) Of these, the National Strategy for Ecologically Sustainable Development (NSES) has the most implication for water management in Australia.

The Australian Constitution (Section 100) grants primary responsibility for the management and development of natural resources to the states. Hence, each state and territory developed its own institutional and administrative arrangements for water management (Services, 2000, pg. 287). However, ever since European settlement of the

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Australian continent, all colonies (later states) were united in the common belief that water was a vehicle for national development (Handmer et al., 1991, pg. 6) Development was seen as water-dependent; a belief that was founded on the optimistic view that only water was needed to make the arid Australian inland flourish (Young, 1996, pg. 11).

Smith (Smith, 1998) provides a useful précis of post-European water resource development in Australia. He identifies three phases: challenge and response (the nineteenth century), the stops and starts of consolidation (Federation to world war two) and the light on the hill and water in the dam (national development post world war two). It is interesting to trace these phases through the five 'myths' that have guided water management in Australia. These myths or institutional expressions are the assumptions made by water planners about the nature of water resources on the one hand and human behaviour on the other. These myths had consequent implications for water management (Sewell et al., 1985). The following are the five myths:

1. Water is a free good
2. Water can be managed in isolation
3. The desert can be made to bloom.
4. Social values will not change
5. Water management is mainly a technical matter.

Dominating the three phases and underpinning the five myths was the steadfast belief that water was a public good best left in state control. This tenet was the keystone of all water laws framed in Australia (Powell, 1989) and subsequent water management policies.

A total rethinking of this paradigm is currently taking place. Since 1992, the Council of Australian Governments (COAG), comprised of the heads of federal and state/territory governments, has committed to a sea change of policy revisions to reform and restructure water management in Australia. This culminated in the adoption of the strategic framework for water reform in February 1994. Details of the water reform package can be found elsewhere (Task Force on COAG Water Reform, 1995) (National Competition Council, 1998). However, they may be summarised as changes in water prices, water rights (now separate from land rights), water trading and institutional reform which aim at separating the resource management, standard setting and regulatory roles of government from the role of providing water services. (National Competition Council, 2000).

Three aspects of the context for the COAG water reform package must be noted. First, since the 1970's there has been a gradual movement away from a pre-occupation with local water management issues to those of broader regional or national concern (Sewell, 1985, 31). Second, due to growing public concern, environmentalism has come to play a more prominent role on the political agenda (Papadakis, 1996, pg. 18). Inefficient and inappropriate water use in the past was seen to have caused problems of national significance such as declining water quality, poor river health, increased salinity of groundwater and soil, degradation of coastal areas and frequent occurrences of algal blooms (Department of Agriculture, 2000a). The water reforms represent a turning point in Australian water management in that they recognise the water needs of the environment (Allan and Lovett, 1997, pg. 201). Third, the ascendancy of neo-liberalism or economic rationalism in Australian public policy has led to greater reliance on competitive markets in the allocation of productive resources. By the 1990's, this impetus for reform trickled down to the governance of natural resources (Challen, 2000). In its acceptance of the environment as a legitimate user of water and economic rationalisation of water management, Australia could be seen as entering a fourth phase in water management namely, that of a 'mature water economy' (Smith, 1998, pg. 142).

## CONSTRUCTING WATER MARKETS: A SUMMARY OF THE AUSTRALIAN EXPERIENCE

The mature water economy phase represents an explicit attempt to apply market mechanisms to the management of water or in other words create 'water markets'. I postulate that this fourth phase is underpinned by the sixth and current myth in Australian water management namely; *markets are a panacea*. As discussed earlier, myths or institutional expressions are the assumptions made by water planners about the nature of water resources on the one hand and human behaviour on the other. The *markets are a panacea* myth is founded on neo liberal belief, best described "as not a coherent ideology but, rather, the "spirit" of our times" (Carruthers and Babb, 2000, pg. 222), and finds expression in assumptions about water; specifically that water is a commodity, which, when bought, sold and traded will move from low value to high value users and so be used most efficiently. The *markets are a panacea* myth places implicit faith in market-based solutions to environmental problems in that it presupposes that this *efficient* use of water will also be the most *effective* use of water in relation to environmental goals.

The assumptions about human behaviour are informed by public choice theory (based in turn on neo liberal belief), which regards human behaviour as atomistic, self-interested and self-maximising to the extent that the market is nothing more than the 'individual bilateral exchanges, which actually take place' (Haworth, 1994, pg. 12). It is this assumption that underlies the rationale for the viability of markets in that market transactions are nothing more than a natural display of the human tendency to 'truck and barter' (Smith, 1776) and the insistence on the separation of the state from service delivery as state officials will act only to protect vested interests (Prichard, 1999, pg. 425).

The ascendancy of the *markets are a panacea* myth in Australian public policy has been analysed elsewhere (Beeson and Firth, 1998; Christoff, 1995; Smyth and Cass, 1998). However, it is vital to note that in the case of water reform it must be located within the much wider trend towards a greater reliance on market forces in water management that is now visible throughout the industrialised economies (Asad et al., 1999; Lotspeich, 1998). So great is the agreement that it might even be termed as a 'water consensus'.

Progress with the construction of water markets in Australia has been slow (Brennan and Scoccimarro, 1999), confusing (Megalogenis, 2001a) and plagued by impediments such as non-participation or 'thin markets' (High Level Steering Group on Water, 2001) and uncertainty (Megalogenis, 2001b). Most importantly, there is emerging evidence that where water markets are working, albeit 'efficiently', they are increasing rather than decreasing water usage thereby leading to greater environmental problems (Megalogenis, 2001a; Megalogenis, 2001c). The price of water has doubled in the last four years making water more valuable than land in certain areas. This has led to 'sleeper licences' or previously unused water entitlements to be traded thereby increasing water usage in general. As result, water is being transferred to land that has not been previously irrigated leading to increased risks of dry land salinity. Farmers and irrigators are still doing what they always did with the result that the environment is the only loser (Megalogenis, 2001b). There is ample evidence to evince that the goals of the mature water economy in relation to the needs of the environment in Australia have failed. How can this failure be understood and where can implementation solutions be found?

There is a wealth of economic sociology literature to which we can turn to for answers. Instead, of viewing social institutions as akin to markets, we can examine markets as social institutions (Swedberg, 1994). Here, the anonymous market of the neo classical model is nonexistent and far from being natural or spontaneous, markets are seen to be socially constructed (Boyer and Drache, 1996, pg. 4). Further, markets are permeated by power relations of various kinds and are 'embedded' in social processes (White, 1993, pg. 1) Fligstein, 1996 #373](Carrier, 1997; Granovetter, 1985; Polanyi, 1957; White, 1993). Embeddedness implies that markets coexist with, are shaped by and depend on, other social relations (Carruthers and Babb, 2000, pg. 7).

In the case of Australia, a myriad of legislative reforms to the water industry have sought to construct water markets. However, as discussed earlier, even 'efficient' water markets have failed to achieve environmental objectives. I suggest that this is because policy makers have failed to recognise that such markets are embedded in existing social processes and industry structures and are permeated by existing power structures. I argue that for water markets to be environmentally effective, they must be re-constructed to allow for this embeddedness.

This paper identifies social capital as a primary building block in this re-construction and proposes a framework for its inclusion. Such a framework allows for an exploration of the roles that networks, institutions, community, fairness and equity and the state can play in the construction and development of water markets.

## THE ROLE OF SOCIAL CAPITAL

Defining social capital, described as one of the hottest contemporary ideas in political science (Pye, 1999, pg. 150), is in itself a major academic exercise. The concept has spawned a plethora of literature so varied that it is incumbent upon those using social capital in their research to be aware of its various interpretations and what is evoked by each of them (Wall et al., 1998, pg. 301). Nonetheless, it is possible to streamline social capital theorising into two broad categories: cognitive social capital which operationalises the concept principally in terms of norms, values and attitudes, and structural social capital which adopts a social structural operationalisation, invoking social networks, organisations and linkages (Warner, 1999). I use social capital in terms of the second category and will as I elaborate later, following Foley and Edwards (1999), conceptualise social capital as access plus resources.

I argue that social capital is a primary building block in the re-construction of water markets because it links us with four important concepts that are typically ignored by the neo classical market model. They are networks, institutions, community and fairness and equity.

## Networks

Networks have received much attention in the social capital literature. Trust and reciprocity are seen to bring people together into networks for collective action (Brinkerhoff, 1999). To complement this, there is a surfeit of literature exploring the role of networks in policy delivery particularly in the bottom-up vein of policy implementation studies. This literature is too numerous to mention here but a useful identification of the 'flora and fauna' of policy networks is provided by Carlsson (2000). Granovetter (1985) has argued that network relatedness is the most important aspect of the social embeddedness of markets. An acceptance that markets are social and cultural constructions (Carrier, 1997, pg. 25) which are embedded within other co-ordinating mechanisms based either on obligation (not just self interest) and/or vertical linkages, such as networks alliances and hierarchies, (Boyer, 1996, pg. 103) will accord due significance to networks as potential sources of social capital which could in turn influence policy delivery (Pennington and Rydin, 2000, pg. 238).

In the Australian context, attempts to include social capital via networks for policy delivery in the construction of water markets can begin by identifying existing networks and then exploring the dynamics of these networks during water reform. We should be cautioned against an 'over networked' conceptualisation of social capital which focuses on access (Foley and Edwards, 1999) or associational capacities alone. Such a focus would downplay the role of politics (Foley and Edwards, 1996). Instead, conceptualising social capital as access plus resources (Foley and Edwards, 1999) would enable an exploration of the political and institutional context in which networks are embedded and how these contexts affect their dynamics (Pennington and Rydin, 2000, pg. 236).

## Institutions

Fligstein (1996, pg. 658 – 659) defines institutions as the shared rules, laws or collective understandings held in place by custom, tacit or explicit agreement and identifies four social institutions necessary as preconditions to the existence of the market. They are property rights, governance structures, conceptions of control (or local knowledge), and rules of exchange. The construction of new markets is shaped by existing institutions which function as 'cultural templates' (Fligstein, 1996, pg. 661).

When the 'cultural template' concept of institutions is applied to Australia, some interesting pathways for research emerge. As discussed earlier, historically, water has been managed by state and territory governments within separate institutional and administrative arrangements. The *markets are a panacea* myth assumes that a market can be created spontaneously across the nation by changing non-market institutions into market facilitating ones. This completely ignores the reality that a peripheral state like Queensland possesses a different cultural template of water institutions to larger states like New South Wales or Victoria. The causal factors are deeply embedded in that state's social, cultural and political history and include factors such as socio-economic influences, political structures and personalities and force of ideas (Kellow and Niemeyer, 1999, pg. 206). It should be no surprise to note the current water reforms have met the most resistance in Queensland!

So how can we link social capital to the making of market institutions? One clear way to do this would be to recognise that only within the group can the individual gain experience that enables fundamental learning steps (Knoepfel and Kissling-Naf, 1998). Through such networks for learning, information can be shared and learned in an environmental of trust leading to 'path dependent' (Campbell, 1997) reform of institutions. Such an approach might go some way towards overcoming the problems of uncertainty and non-participation, which are plaguing Australia's 'most confusing market' (Megalogenis, 2001b).

## Community

Communities have been recognised as rich storehouses of social capital and there exists a wealth of literature that investigates how community social capital can be harnessed to enable policy reform in a number of sectors, for example, health (Tendler, 1997) and irrigation (Lam, 1996). However, it is in relation to the management of environmental issues that community social capital strikes the greatest chord (Pretty and Ward, 2001).

Prior to the water reforms, the predominant government policy initiative in response to land degradation caused by poor water management was the encouragement and support of community 'Landcare' groups to encourage local communities to recognise and own local environmental problems. Landcare, hailed as one of the most significant developments in land, water and vegetation management in Australia (Collins, 1995, pg. iii) and an exemplary model of participative action management (Chamala, 1995, pg. 28) is based on the pragmatic recognition that without community support achievable through participation, management efforts are likely to fail (Nurse-Bray, 2000). The growth of Landcare groups in Australia has been extraordinarily prolific with 200 groups in 1989, increasing to 2200 in 1994, to a current strength of 4000 (Dovers, 2000, pg. 16).

As discussed earlier, reality indicates that water trading it is contributing to overuse of water leading to increased environmental risks. Therefore, the research questions arising are to ask how the water reforms have impacted on Landcare. What has happened to the related social capital? Can it be harnessed to complement the environmental objects of the water reforms?

### Fairness and Equity

The social and economic injustices that result from the implementation of market reforms are well documented. Noted in particular is the tendency of markets to separate actors into winners and losers; justifying, motivating or at least legitimising the success of winners and weakening the position of losers (Carrier, 1997, pg. 29). In the context of Australia, it is acknowledged that water markets will increase the pressure the rural adjustment and facilitate its implementation (Bjornlund and McKay, 1999). The impact on rural communities; irrigators, farmers and other participants in the water industry will be immense. The water reforms are generating uncertainty; anxiety, anger and outrage in the community while at the same time major winners or 'water barons' are emerging (Megalogenis, 2001b).

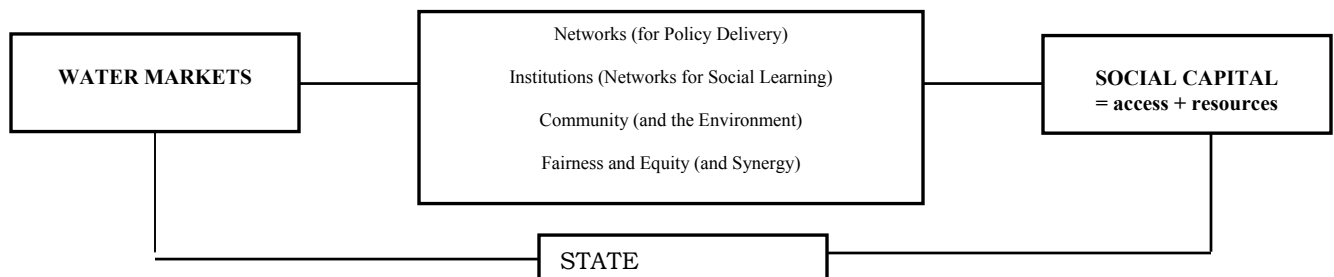
How can such major restructuring take place in a fair and equitable way? Social capital can again offer some suggestions. Rather than the 'arms length' exchanges that the market model demands, social capital argues for 'synergy' or ties that cross the public-private divide (embeddedness) (Evans, 1996). Social capital synergy has generated a wealth of case studies exploring how and under what circumstances civic actors can more fruitfully engage with public institutions to create a positive enabling environment for reforms and increase the efficiency and effectiveness of outcomes and results. However, this literature has focussed almost exclusively on reforms in less developed countries. See for example, (Brinkerhoff, 2000) (Perez-Aleman, 2000). I would argue that using the concept of social capital synergy to achieve fairness and equity in market reforms in industrialised countries would constitute a valuable addition to market embeddedness theorising.

### The State

What then is the role of the state within this framework? As discussed earlier, in the Australian context, the state has already played a role in the construction of water markets via legislative reforms and continues to play a limited regulatory role in overseeing market functions (Water, 2001 pg. 18). The social capital inclusive framework for the construction of water markets will need to go much beyond this and seek new and innovative roles for the state. Some groundwork has already been done in this area. These include a new role for state as catalyst, convener and facilitator (Warner, 1999); and other recent work on 'social glue and social bridges' and 'bonding social capital and bridging social capital' which extend the insight that the value of social capital depends on the larger context including the insertion of that social capital into higher levels (Foley and Edwards, 1999).

### CONCLUSION

This paper began by outlining the water reforms currently being undertaken in Australia and placing them within the context of the *markets are a panacea* myth. It then moved on to critique this myth by demonstrating that 'efficient' use of water in the Australian case did not equate to 'effective' use in terms of the environmental goals of the market reforms. Instead, water markets are increasing water usage and associated environmental risks. The paper postulated that this environmental failure could be overcome by recognising the 'embeddedness' of water markets in existing social processes, industry, and power structures. Such recognition would allow for a social re-construction of water markets. The paper then identified social capital as a primary building block in this re-construction and proposed a framework for its inclusion. Such a framework seeks to link social capital to other concepts typically ignored by the market model; namely, networks, institutions, community and fairness and the state. The framework is conceived as outlined below:



Frameworks are broad conceptualisations of problems under focus, which help us to organise our thinking and thus our investigations. Frameworks provide a general list of variables that help to generate questions, which need to be addressed (Ostrom et al., 1994). That is precisely what this paper has sought to do. The problem under focus is the construction of water markets in Australia and the framework supplied helps to organise thinking about how we can incorporate social capital in this construction and provides us with questions for further research.

Obviously, there are overlaps within the framework between the ways I have sought to embed social capital in the construction of water markets. For example, networks may be seen to be at the core of markets and state-society synergy so why have I separated them into networks for policy delivery, social learning, community and fairness and equity? I have two main reasons for doing so. First, such a separation allows us to look at distinct networks in different contexts. For example, the networks for policy delivery may not be the same as networks for social learning and may experience entirely different dynamics in that one may be national and the other state based. Second, I have sought to base my embeddedness argument around those concepts that the market model ignores – namely networks, institutions, community and fairness and equity. This will enable connections between these concepts, social capital and other theories. For example, policy networks, social capital and implementation theory; social capital, networks for social learning and new institutionalism and social capital synergy in industrial countries and theories of development.

This paper summarises the research that is being done as a doctoral thesis. Hence, the proposed framework needs to be fleshed out and much exciting research remains to be done. However, it is hoped that the research it will generate will contribute to arguably the most critical implementation crisis in Australia and at the same time make contributions to social capital and market embeddedness theorising.

#### ACKNOWLEDGMENTS

I would like to thank Dr Stephen Bell for his comments on this paper. I would also like to express my appreciation to those who reviewed this paper for AWRA.

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