



# Strengthening Water Governance in Australia

## Introduction

This briefing paper presents a case for establishing a dedicated program of research on water governance in Australia. Particular attention is paid to the potential for *social learning* to play a greater role in improving future governance outcomes.

It is envisaged that research would have nation-wide relevance, and give emphasis to practical solutions and on-ground benefits. The Murray-Darling Basin (MDB), as a hotspot in the current public debate, would be one of the focal points of any research portfolio but not isolated from the research needs of urban, groundwater and other State contexts.

Australia's water crisis is discussed here as an issue that is highly resistant to resolution (a *wicked* problem). Research activities to-date have shone a spotlight on the crisis, but contributed little to addressing underlying water governance fundamentals.

This paper highlights water governance as an important arena of research that warrants greater scrutiny. We refer to water *governance* – rather than management – because it encompasses all available means of influencing social change. It is an active concept and extends to putting theory into practice.

We suggest that *social learning* – learning processes among a group of people who seek to improve a common situation and take action collectively – is a critical missing element in the current water reforms. We emphasise the pressing need to work out how to design social learning into existing *institutional arrangements*, which span policies and objectives,

laws, rules, regulations, organisations, policy mechanisms, and norms, traditions, practices and customs.

## What Water Crisis?

Water management has been described as a *wicked* problem – that is, a problem that is characterised by complexity, connectedness, conflict and multiple perspectives. The five headline messages presented here on the nature and scale of Australia's water crisis set the context for the sections that follow on the need for water governance research, including social learning as part of ongoing water governance reform.

The pressure to transfer water to urban centres and return water to the environment has become more pronounced in recent years in the face of prolonged and widespread drought, increasing competition for water, and heightened public concern about climate change. While a substantial body of knowledge about the extent and severity of water resource degradation has long existed, policy-makers and researchers have been spurred to learn more about water issues and the suite of options available for tackling the problem.

What emerges is a dramatic picture, and one that brings into sharp focus the need to invest greater effort in understanding and refining aspects of water governance:

### 1. Development has been based on gross over-estimates of the total water resource available

Planning for the major phases of settlement and associated water resource development is now known to have been based on a period that was much wetter than the long-run average. The quantity and quality of water inflows to storages has been declining in both rural and urban settings. This trend is exacerbated by global warming, including through the increasing incidence and severity of bushfires.

### 2. Surface water and groundwater systems have been treated independently

Licensing arrangements to extract water have treated surface and ground water as separate and unconnected systems. This has resulted in higher levels of extraction and double accounting. Licences to pump groundwater have typically been granted

## Developing this Briefing Paper

This paper is informed by the outcomes of a series of workshops convened by Uniwater, a partnership between Monash University and the University of Melbourne; and the Centre for Resources, Energy and Environmental Law (University of Melbourne).

The 44 workshop participants spanned a broad spectrum of interests in the social and policy aspects of water reform, and were collectively well informed about key issues and research investments.

without consideration of adverse flow-on effects to surface waters.

### **3. Water trading has activated sleeper licences and increased groundwater pumping and on-farm water collection**

Water trading has stimulated the widespread sale and activation of licences not used previously in practice ('sleeper licences') and, at the same time, encouraged greater exploitation of groundwater resources and harvesting of on-farm water.

### **4. Water use efficiency investments have stimulated further development**

Urban and rural investment in water use efficiency measures has been significant in recent years. Intensification and expansion of land development has tended to occur in concert, despite total environmental allocations remaining well below that required to restore ecological function.

### **5. Response strategies have implications for catchment water yields**

Taking action to repair land and water degradation and capture carbon, especially through large-scale tree planting, is likely to adversely affect catchment water yields.

## **Water Governance**

Historically, institutions for water allocation and management in Australia have focused on settlement and industry development. Primary legislation and organisational frameworks have been largely state-based, and actions to holistically address water issues at national scale were sporadic. Three tipping points are discussed here in the reshaping of the institutional arrangements, with emphasis on more recent developments.

Firstly, the Council of Australian Governments (COAG) announced landmark water reforms in 1994. This marked a significant shift to more centrally directed policy, but its delivery remained largely a state-based matter. Tied federal funds gave substantial impetus for implementation in the initial years of these reforms.

The institutional landscape has been progressively shaped by water and related natural resource management (NRM) policy. Local and regional level organisations in both rural and urban settings have proliferated and formed partnership approaches with higher institutional levels. 'Top down' structures and processes were initially de-emphasised, at least in rhetoric, with the aim that more decentralised approaches to decision-making and delivery would achieve greater alignment with and responsiveness to

local issues and needs. Evidence suggests the pendulum may now be swinging back towards tighter central control

In 2004, COAG signed the National Water Initiative (NWI) as 'a more cohesive national approach to the way Australia manages, measures, plans for, prices, and trades water.' Initial assessments were broadly supportive of its coverage, intent and attempt to integrate ecological, economic and social imperatives, yet cautious about the institutional capacity for its implementation. Hussey and Dovers (2007) highlighted that many tensions and implementation difficulties remained, and that assumptions about implementation were being unsettled by realisations of significant deficits of capacity and knowledge.

The recent reform agenda in the MDB has relied primarily on developing a system of property rights to extract and use water, and the markets to trade these rights. Other significant aspects include the establishment of catchment-scale planning as the central platform for defining environmental water needs and setting sustainable limits to guide the extraction and reallocation of water. In practice, planning approaches have differed greatly between states and in different water use contexts; most notably between regulated and unregulated rivers. Engagement with communities has varied widely in both scale and approach, and has been characterised by conflict, poor design, and dissatisfaction. Some organisational reform has also been attempted, including separating water regulation from service delivery, and putting in place management arrangements for environmental water delivery.

The reform agenda was given further impetus with the federal *Water Act 2007*. It set tight parameters for developing a water management plan for the MDB, and the accreditation of individual catchment plans nested within this strategic framework. The plan must include rules for the operation of basin-wide water markets, and for delivering environmental water. Primary regulatory responsibility is given to the Murray-Darling Basin Authority (as a new Commonwealth body).

The legislation was accompanied by a substantial investment package. The primary focus of investment was on achieving water savings and addressing over-allocation through irrigation efficiency works and direct buy-back of entitlements on the market. The Act established the Commonwealth Environmental Water Holder to manage Commonwealth-owned environmental water both within and outside the MDB. Spending has proceeded well ahead of basin-wide and individual catchment planning proscribed under the same legislation.

In summary, almost two decades have elapsed since the original water reform agenda commenced. Attention to social and institutional dimensions of this collective agenda has been inadequate, and progress on sustainability aspects has been slow. Implementation is characterised by considerable conflict and even policy failure. Existing institutions for water management have been effectively by-passed in some cases, while new and potentially competing institutions have been created. Further, the mechanisms used to deliver environmental water, and the way systems are managed, leave environmental water highly vulnerable to systemic shocks, especially under climate change scenarios.

## Social Learning

The need to move towards sustainable water governance in Australia is urgent and well documented. For water governance to work, institutions need to have the capacity to integrate across values (social, cultural, ecological, economic) and across scales and boundaries (organisational, catchment, communities, global). At the same time, they need to continually adapt to change and emerging priorities.

A review on tackling wicked problems by the Australian Public Service (APS) highlights the central importance of governance. It notes the need to work across both internal and external organisational boundaries, and engage citizens and stakeholders in policy-making and implementation. Changing the behaviour of groups of citizens or all citizens is acknowledged as part of the solution. The findings stress that there are 'no quick fixes and simple solutions', and that 'more sophisticated tools and responses' are needed.

The APS review concludes that wicked problems therefore require innovative, comprehensive solutions that can be modified in the light of experience and on-the-ground feedback. This proves challenging to traditional models of governance.

Woodhill (2008) comments on the need for institutional *transformation* in addressing complex public policy problems – stressing that institutions cannot necessarily be effectively changed in a neatly planned top-down manner. Complexity and systems thinking has a central role to play in intervening in wicked problem situations in structured yet non-linear ways.

Many of the strategies currently employed in addressing the water crisis, like market-based instruments, have significant limitations. The strategies in use are shaped by how issues are framed in the first instance. There is a need to revisit

both the framing of the issues and the appropriateness of the strategies employed.

European research suggests using social learning as a governance mechanism to support adaptive management in 'wicked' situations (SLIM, 2004). The work focused on how the following six variables shaped issues and transformed situations where stakeholders were concerned with sustainable water managing at catchment scale:

- Starting conditions (historical context)
- Stakeholding (not just 'who', but actively building stakes in complex issues)
- Facilitation (through people or objects)
- Institutions and policies
- Ecological constraints (how and by whom ecological knowledge is constructed)
- Learning processes (how learning happens mediates the transformation of complex situations)

One of its key research outcomes was that institutional complexity can constrain social transformation. It does so by affecting the development of stakeholding and the way in which change occurs. The complexity can produce unintended consequences, including policy conflict, inability to translate policies into local action and the breakdown or loss of social and relational capital.

In Australia, there is a need to give much greater attention to the practice of governing. The practice of governing can be likened to an orchestra delivering an effective performance sustained over time. This is an arena of water reform that has been paid little regard to-date. In Australia, unlike Europe, social learning has not been explicitly embedded or designed into water policy and governance, and will be critical as a means of investigating multi-pronged approaches that operate beyond a market-preference mode of resource allocation. It is also important to consider the value that should be placed on existing institutions, like the network of 56 regional NRM bodies, and the relational capital established through their operation as the water reforms take shape.

The wickedness of the water crisis will only continue to escalate over the coming years as understanding of the predicted impacts of climate change on water resources increases. The time is ripe to re-assess the effectiveness of approaches taken to-date; and in particular to explore and develop adaptive institutional arrangements which create the space and capacity for achieving broad scale and ongoing change, which is systemically desirable and culturally feasible.

## A Call for Research Partners & Investors

We invite your feedback on and interest in advancing the agenda put forward in this briefing paper. A prospective program of research spanning a 3-year period is outlined here to stimulate further conversation.

### Aims

- To improve understanding about Australia's water crisis as a wicked problem that requires specific attention to water governance
- To reveal the systemic implications of institutional complexity and devise ways to minimise unintended consequences
- To demonstrate how to design social learning into future governance arrangements
- To identify the costs and benefits of refining water governance and investing in social learning, and the implications for on-ground outcomes

### Key Elements

- Develop and test rules of thumb (heuristic devices) for engaging stakeholders in understanding wicked problems
- Identify the institutional factors that constrain or enhance social learning (e.g. metrics-focus, stakeholder standing)
- Explore how these institutional factors relate to different framings on governance (e.g. market-based instruments, rights, share vs. volume, 'environment' as user, critical human needs, sustainability)
- Conceptualise and cost alternative approaches to or systems for planning and managing catchments that address the identified constraints to social learning
- Establish minimum conditions (e.g. powers, capacities) for healthy governance at different levels
- Trial a practice model for designing social learning into institutional arrangements at different scales for sustainable water governance in the context of the future Murray-Darling Basin Plan *in action*
- Prepare a best practice guide on 'learning by design' for water policy-makers, including case study examples linking design elements to on-ground outcomes

### Principles for Research Conduct

- Be theory-informed, replicable and practice-focused
- Put in place feedback loops to progressively inform and shape the process of water reform
- Encourage multiple perspectives arising from different disciplinary areas
- Support the formation of and co-learning with communities of practice (horizontally and vertically)

- Recognise ethical imperatives such as how to engage stakeholders with little or no voice in decision-making processes
- Manage initial starting conditions – involve key policy makers from the beginning.

### Anticipated Outcomes

- > Best practice guide on 'learning by design' with case study examples (in plain-English style)
- > A suite of key recommendations for actioning by policy-makers
- > Heuristic devices for stakeholder engagement
- > New concepts and language for communicating across disciplines
- > A national water governance research agenda with significant stakeholding by an enthusiastic community of conversation
- > Greater clarity about the options for (and benefits and costs of) refining water governance and designing social learning into Australia's institutional arrangements across scales, boundaries and interests
- > Informed and active communities of practice, and greater inclusivity of the breadth of interests in water governance and water reform processes
- > Governance arrangements more suited to a broader conceptual and aesthetic understanding of water and recognition that the water governance imperative is that of a coupled, co-evolutionary socio-ecological system

### Further Information

**Naomi Rubenstein, Philip Wallis\*, Ray Ison**  
*Monash Sustainability Institute*  
*Monash University,*  
[Phil.Wallis@monash.edu](mailto:Phil.Wallis@monash.edu)

**Lee Godden**  
*Melbourne Law School*  
*The University of Melbourne*

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