Water Governance Research Priorities

Introduction

In Australia, there is an urgent need to progress beyond 'predict and supply' approaches to water. Water governance requires approaches that are integrative and responsive to complex, interconnected socio-ecological needs in the context of our regions and cities. This necessitates far greater attention to water governance institutions, organisations and community values and to the processes for multi-stakeholder collaboration. However, a research strategy for water governance is currently missing from the research agenda on climate change adaptation. This briefing paper represents a collective effort to identify priorities in water governance research.

The Water Governance Research Initiative is a theme of the NCCARF Water Resources and Freshwater Biodiversity Adaptation Research Network (www.nccarf.edu.au/water/node/5). Our objectives are to create a community of conversation about water governance in Australia, build collaborative research links, create opportunities for co-researching and information sharing, and provide opportunities for early-career researchers to participate in a national network of researchers and research-users. This, our second briefing paper, reports on the outcomes from two major activities of 2010: an online survey and a national workshop.

The online survey was distributed to the network with the aim to: 1) gain a better understanding of the profile of the network in relation to professional backgrounds and current research interests; 2) explore levels of engagement in governance research that is collaborative, particularly where it crosses and challenges disciplinary divides; and 3) explore the critical issues facing water governance research and practice in Australia. 39 people completed the survey.

The second major activity was a two-day national workshop held in Canberra, attended by 50 leading water governance researchers and policy practitioners from a range of disciplinary backgrounds. Participatory sessions were used to stimulate dialogue, increase appreciation of different perspectives, foster individual and group self-reflection and identify emerging research issues and opportunities. Based on the outcomes of the workshop and survey we present a summary of the critical research needs for water governance.

1. Developing a common language around water governance

An important issue facing water governance research, policy and practice, is a lack of clarity about the governance landscape, including framings of water governance. Symptomatic of this is poor communication through a lack of common understanding and language. This communication divide is both created by and perpetuates disciplinary divides, and hinders the productive interaction between research, policy development and implementation. It can lead to misunderstandings and to the foreclosure of discussion and debate around narrow framings of water governance. For example, the framing of water issues in a given situation as an engineering problem or an efficiency problem, rather than broadening the parameters of enquiry. There is a need to explore effects of particular discursive framings on both research and policy. Further, there is a need to develop a better understanding of the ethical foundations of dominant water governance approaches. There is also a need to pursue the integration of multiple framings through investing in effective communities of interest, conversation and practice, with attention to the similarities and differences in views. In relation to framing, workshop participants highlighted a need to:

- Frame water governance as a complex adaptive system in water policy and practice.
- Investigate different 'knowledges' (interdisciplinary and 'on-the-ground') and how they can be integrated with each other and with practice.
- Build multi-disciplinary engagement around water governance (broadly conceived) as a means for interrogating current approaches and facilitating 'change'.

Research priority: developing a shared language in the water governance context, through purposeful interaction between disciplines, investigating the similarities and differences of views and the effects on research and policy arising from different framings of water.

2. Greater attention to social research in water governance, and opportunities for inter- and trans- disciplinary engagement.

For those engaged in social and cultural research, there is an expressed frustration at the ongoing dominance of the 'hard' sciences within the water governance framework. There is a need for more opportunities for better coordinated social science research with more purposeful interaction with water managers/ organisations and biophysical science. As one participant explained:

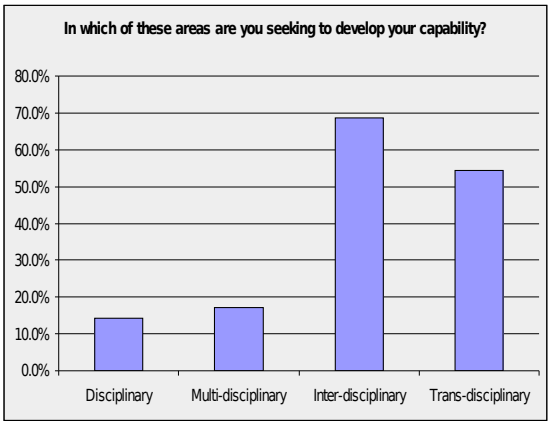
> *A key issue for me is that although there is growing recognition of the need for more social and cultural knowledge to be applied in water planning and management, there is still a strong core of scientistic fundamentalism, a profound belief in the essential correctness and proper dominance of the scientific rational world view, which makes it easy to dismiss hermeneutic, philosophical, spiritual, narrative and situated knowledges as merely 'subjective' and a waste of time and funding that detracts from 'real action' on water.*

Interestingly, survey results indicate that many water governance researchers have moved into social sciences from engineering or physical sciences as they seek to explore sustainability questions from an interdisciplinary and systemic perspective, e.g.:

> *Originally trained in engineering, then in town planning and then in highway engineering, [I] moved into social sciences / behavioural / administration research because I was interested in how and why decisions were made and what were outcomes needed to explore the social behavioural aspects of engineering systems development.*

The survey results show most researchers have experience in some form of collaborative research (i.e. disciplinary, multi-, inter- and trans- disciplinary), and many are seeking to develop their capabilities in inter- and trans- disciplinary research (Table 1).

Table 1: Modes of collaborative research in which respondents are seeking to develop their capability.



However, despite this desire, support for collaboration, in reality, is limited claim respondents. Barriers include a lack of dedicated funding, prevailing reward structures, and the dominant culture of many organisations, including universities:

> *Even though the organisation I belong to says it supports collaboration, the project funding model I work [in] does not give me the time or the funding to more actively pursue collaboration.*

> *There are still insufficient incentives at institutional level to entice sufficient critical mass of people to engage in interdisciplinary/ transdisciplinary research. This also applies to funding bodies such as ARC and others which do not promote this type of research.*

Research Priority: develop means of support for collaborative inter- and trans- disciplinary endeavours that genuinely draw on both the physical and social sciences.

3. Integration of water's multiple values into the water governance framework

There is a paucity of effective integration of community values and best-practice community engagement in water governance. There is still poor integration of regional priorities and stakeholder values in policy and decision-making. Incorporating different perspectives into goal setting and decision-making can reveal common interests, lead to more appropriate solutions and help minimise conflict. Community values, norms, expectations, knowledge, and understandings are dynamic. A better understanding is needed of the means to capture, unpack and comprehend these ever-changing dynamics. More research is required into how to communicate and integrate values into decision-making processes at all stages and in ways that are accessible to different stakeholders. Specific areas of concern are the genuine engagement of indigenous people in water governance and the growing mistrust and division between rural and urban areas. Important questions arising in the water governance context include:

- How do cultures and communities develop particular values and visions for water futures, and how are they shared and communicated?
- Where, when and how does community engagement need to be used in the governance and planning processes to be effective?
- How can researchers (a) engage with, and prioritise, complex values systems and (b) transfer values and norms into framing?

- How are water problems framed in relation to concepts of social justice?

Research priority: research that can continuously interact with the dynamics of community and stakeholder values around water. Development and application of tools and processes that allows multiple values to inform the framing of water issues, and to draw on these as an integral part of decision-making processes.

4. Multi-level institutional governance

Australia has an extremely complex institutional framework around water, with numerous institutions, laws and plans, often with overlapping roles and responsibilities. The complexity is compounded by the hierarchical structure of local, state and federal responsibilities and laws. This framework has led to ineffective multi-institutional relations characterised by power imbalances and conflicts. Widespread policy failure and implementation deficit reflects the lack of coherence between policy settings and regional needs and capacity. Much greater research attention is needed on effective multi-level institutional governance which fosters communication, coordination and cooperation between agencies. Further analysis of the jurisdictional responsibilities, capacities and conflicts regarding institutional water management is required. This will involve attention to the development of non-adversarial institutional frameworks with improved capacity in problem solving and adaptive management. In particular, there is a need for research into enabling and empowering regional and local agencies in water governance and 'on-ground' implementation. Some important research questions are:

- What is the most effective way to be framing the issues to encourage practical implementation?
- How can collaborative multi-level governance in relation to goal setting foster more successful implementation?
- What is effective management at a regional scale?
- What is good institutional design?
- How can we better facilitate autonomous structural adjustment to enable communities to change and flourish?

Research Priority: understand key capacity needs for multi-level institutional water governance at federal, state and local levels, identifying the conditions needed to improve cooperation and coordination, and to overcome barriers to implementation of policy into practice.

5. Environmental water governance

There are a number of important research needs in relation to the governance of environmental flows. Participants expressed concern that in a market-based system, there is a risk that 'rules' based (higher security) flows can be replaced with tradeable entitlements. Water governance research should explore how co-management and collaboration, together with robust planning frameworks, can improve the effectiveness of environmental flows for both human and ecological needs. This involves understanding community values and expectations of environmental water, preferably through case studies where water allocations have generated social consensus. There is also the need for more research into the measurement of both the ecological and social benefits of those allocations. Additionally, participants emphasised the need for improved systems for reporting access entitlement flows with transparent reporting of all access and extraction.

Research Priority: improved understanding of community expectations of environmental water. Exploration of the ways to achieve social consensus and effective co-management of environmental flows.

6. Comparative and case-oriented research

Methodologically, there is a call for more comparative and case-oriented water governance research. There is interest in more focused exploration of lessons from past and present experiences from within Australia and Internationally. Participants suggested that comparative and case-oriented research would be appropriate in the areas of: institutional design and performance; implementation of policy into practice; conditions for effective collaboration between agencies and regions; incentives and enforcement mechanisms; and negotiation and implementation of water agreements and water plans.

Research Priority: fund comparative and case-oriented water governance research to utilise the experiences of the past and present, both within Australia and internationally.

7. Water governance in whole-of-system sustainability

Integrative whole-of-system research is required that addresses complexity and uncertainty underlying water issues, especially in the context of climate change. Water governance must be informed by research that looks holistically at the biophysical landscape (e.g. the interaction of ground and surface waters, soil condition, biodiversity) along with social, economic and cultural systems. Integration of water

with climate change and other environmental and sustainability challenges is also required to avoid perverse outcomes and unintended consequences. Research needs to find ways to communicate uncertainty as an inherent attribute of complex science-based issues, both within policy and the wider community. Rather than reacting to 'crisis' situations, a more systemic and adaptive approach is needed to build the capacity of the water governance framework to cope and respond under conditions of uncertainty.

> *How to make adaptive management work across a number of areas of water governance such as environmental flows, water planning, research and knowledge, water policy as part of the reform process still have a long way to go and without the ability to adapt and integrate between these areas much will be lost.*

In developing integrative governance research, some important questions are:

- How can dynamics and change be better accounted for in water governance?
- What is the role of heuristics and 'messy models' of change?
- How can governance futures and needs be understood?
- How can the performance of governance be understood and assessed?

Finally, governance research needs to explore forces for behaviour change in respect of expectations and use of water in industry and the community.

> *In the urban sector, sustainability is now embedded in industry discourse, and the translation to meaningful practice is slow – that is, I would guess the industry thinks it's had big change and is doing sustainability pretty well, and I would argue that it's right at the start of a massive transition curve – getting that idea embedded is a key thing.*

Research Priority: whole-of-system sustainability research that: challenges status-quo thinking; embraces complexity and uncertainty; is self-reflective; and can communicate across multiple sectors and industries.

Profile of the Water Governance Research Initiative Network

Since 2008, the initiative has held three Victorian-based workshops, and one National Workshop in Canberra on water governance research. These events have been attended by more than 100 individual researchers and policy practitioners from a range of disciplinary backgrounds. The network has now expanded to over 350 members with whom semi-regular updates are sent via email.

The majority of respondents to the survey (n=39) listed research as the main function(s) of their current role (86%) followed by management and policy (both 15%). The institutions that they are primarily associated with are university/ tertiary (69%) and government (23%). Respondents were asked to list their background qualifications and current research interests. The two most prevalent areas of current research interests are Studies in Human Society and Environmental Sciences.

Of the survey respondents, 41% consider themselves early career researchers (i.e. less than 5 years experience, a student or under 35 years). The largest number of responses were from Victorians (see Table 1), which reflects the origins of the network.

Location	Percentage of responses
Victoria	44
Queensland	18
Australian Capital Territory	10
New South Wales	10
South Australia	5
Western Australia	5
International	5

The initiative aims to broaden its reach across Australia and, to this end, has now established a reference group with members from each State and Territory. The purpose of the Reference Group is to ensure the network has national representation and is informed by a spectrum of ideas, disciplinary backgrounds and professional experience. To facilitate these objectives, each representative provides a contact node within their state or territory for water governance researchers identifying potential collaborators and, more generally, building the profile and participation in the network.

Further Information

Naomi Rubenstein, Philip Wallis*, Ray Ison
Monash Sustainability Institute
Monash University,
Phil.Wallis@monash.edu

Lee Godden
Melbourne Law School
The University of Melbourne