Water Governance Research Initiative

NCCARF
National
Climate Change Adaptation
Research Facility
Adaptation Research Network
WATER RESOURCES AND FRESHWATER BIODIVERSITY

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Committee Secretary
Senate Standing Committee on Rural Affairs and Transport
PO Box 6100
Parliament House
Canberra ACT 2600
Australia

Re: Inquiry into the management of the Murray-Darling Basin

To the Committee Secretary,

We thank you for the opportunity to make a submission to the Senate Standing Committee on Rural Affairs and Transport inquiry into the management of the Murray-Darling Basin and the development and implementation of the Basin Plan.

This submission, prepared by the coordinators of the Water Governance Research Initiative – an activity of the National Climate Change Adaptation Research Facility (NCCARF) Water Network – outlines opportunities for embedding a systemic and adaptive governance regime to more effectively manage the situation in the Murray-Darling Basin. The objectives of the Water Governance Research Initiative 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 (http://www.nccarf.edu.au/water/node/5).

Our contribution to your inquiry draws on the latest international research findings in the area of water governance as well as contributions from a number of collaborative workshops involving water governance researchers from throughout Australia. We have attached a set of relevant documents to this submission. These are listed below along with an explanation of their relevance to the terms of reference (ToR) for the inquiry. **However, as a starting observation we note that the set of TORs that have been used will not allow for a systemic appreciation of the issues confronting the basin and Australia's water governance more generally.** In particular we are concerned that Senators may lack an appropriate conceptual framework from which to interpret and judge the submissions that are provided. For example, Professor Helen Ingram, Professor of Social Ecology at the University of California Irvine, an international authority on water governance recently concluded that:

> '*Attempts to design improved water resources management and institutions must attend to context. Standardised reforms have failed time after time …In general, clumsy solutions that embrace multiple perspectives and appeal to different kinds of logic are preferable…..mixed strategies that appeal to different ways of knowing are likely to be more effective.*'

In pursuing its deliberations, we also hope that the Committee has seen the report on the activities of the MDBA, which was prepared by a four person panel of international experts in May of 2010. We raise this issue because recent Australian reform has, too frequently, failed to look out to other 'water governance experiments' that are being undertaken around the world.

We attach the following in support of our submission:

1. **'From water supply to water governance', by Lee Godden and Ray Ison (2010), published in the book 'More than luck: ideas Australia needs now' by the Centre for Policy Development (CPD). (Available at http://morethanluck.cpd.org.au/more-than-luck-ebook/from-water-supply-to-water-governance/)**

This Chapter argues that Australia does not currently have the right policy mix for managing water sustainably. In arguing that the ecological integrity of the Murray-Darling Basin needs to be put first in order for management of water to be sustainable, the Chapter references the use of 'balance' concepts and highlights that the short-term political nature of 'balancing' is inadequate for managing the complex dynamic between people and the environment. The implication for ToR (c) is that the policy goal for managing water in the Murray-Darling Basin should focus on ecological integrity, rather than ecologically sustainable development.

The Chapter also addresses the challenge that it is not always possible to get 'more from less'. With regard to ToR (f), there should be a focus on demand-side water managing rather than supply-side solutions.

With regard to ToR (b), the Chapter recommends instituting integrated decision-making in water that reflects the interlinking social, economic and cultural systems that interact with water. This supports a more 'systemic' approach to water managing that takes into account the interconnectedness of water both physically and socially.

2. **'Planning as performance', by Ray Ison and Philip Wallis (2010), to be published in a book of collected essays from the ANU Crawford School Dialogue on the Murray-Darling Basin Plan. (Attached)**

A central premise of this Chapter is that managing a river system must be done within a context where there is real time capability and decision making. This requires having people capable of working effectively together to create a performance that is both timely and responsive to unfolding, real-time events. Our argument is that traditional governance mechanisms, as exemplified by the Water Act (2007) and the MDBA in its current organisational form and operational practices, may not be fit for purpose. This claim raises questions relevant to all ToRs because they rest on assumptions about prevailing governance arrangements and the adequacy, or not, of existing policy formulations.

Underpinning several of the ToRs is seemingly a concern with efficiency. From the perspective of this work, more important measures of performance concern efficacy (does it work) and effectiveness (is the purpose clear and being achieved).

This paper is particularly relevant to ToR (d). Significant opportunities are being lost in a very narrow interpretation of the Water Act (2007) which is, we suggest, related to historical policy silos and lacked of joined up action across ministries. In particular there has been little ownership by any ministry of the question of rural futures and rural livelihoods.

3. **'Strengthening water governance in Australia', *Water Policy Briefing No. 1* produced by the Water Governance Research Initiative (2010). (Attached)**

This briefing, prepared from a series of collaborative workshops, calls for a dedicated program of research on water governance in Australia, focusing on the potential for *social learning* to improve governance outcomes. *Social learning* is an inquiry-based process of learning among a group of people that can result in improvement of complex and uncertain situations, where pre-determined 'solutions' would otherwise be ineffective. Such processes require *institutional transformation*, informed by systemic thinking, to create an environment in which *social learning* can occur.

This policy briefing is relevant to ToR (d). Creating institutional arrangements that enhance the conditions for *social learning* to occur would ensure that any reconfiguration

of rural and regional Australia would occur in a systemic 'joined up' way, with outcomes that are equitable and supported by the relevant stakeholders. The role of research, as articulated in the policy briefing, would be to demonstrate how *social learning* could be designed into future governance arrangements.

4. **'National water governance research priorities', produced at our recent national workshop on water governance research, held in Canberra 15-16 November 2010. (Attached)**

The aim of the workshop was to bring together leading researchers and policy practitioners, from a range of disciplinary backgrounds to explore the needs and priorities of water governance research in Australia and to bring forth an agenda of critical research needs for water governance. The outcomes of the workshop are relevant to the TOR's (a), (b) and (d) because they point to research priorities and current gaps in understanding that will limit the effectiveness and capacity of the current, and emerging institutional framework. One key theme is the lack of integration of the multiple values of water into current practices both in the MDB and more generally. Questions that need to be addressed include: how do cultures and communities develop particualr values and visions for water futures, and how are they shared and communicated? Where, when and how does the social engagement need to be used in planning to be effective? Other critical issues facing water goveranance research, policy and practice are; poor communication and lack of common language and understanding; the need for more comparative research into the conditions for effective multi-level governance; and integration of water with climate change and other sustainability challenges in ways that avoid perverse outcomes and unintended consequences.

5. **'Adaptive water governance and systemic thinking for future NRM: Action research to build MDBA capability', by Ray Ison, David Russell and Philip Wallis (2009), published by the Monash Sustainability Institute. (Available at http://www.monash.edu/research/sustainability-institute/assets/documents/cms_mdba_adaptive_capacity.pdf)**

This report describes a scoping study, conducted within the Murray-Darling Basin Authority in early 2009, on building capacity within the MDBA to improve its ability to deliver its functions under the *Water Act* 2007. The study was conducted with a subset of MDBA staff and did not include senior management. However, the study evidenced a clear demand for on-going capability building in systems thinking for better integration and performance within the MDBA. The report contains a series of recommendations for future action within the MDBA, proposed in June 2009, including:

- Use the learning and outcomes of this project to build *organisational legitimacy* – i.e. the MDBA has statutory authority but next needs 'soft' legitimacy. This lays groundwork for 'ownership', 'buy-in' and future compliance. Legitimacy needs to be established at different levels: Ministerial, scientific, MDB community/industry levels, and with the wider Australian community. Establishing and maintaining organisational legitimacy is a process.
- *Build trust* – as one of the cornerstones of organisational legitimacy. Ultimately this rests upon a realistic degree of trust in the 'reasonableness', sense of fair play and 'collectivity' of human beings (within the organisation and out in the community).
- *Build from the inside out* – the components of trust-building and organisational legitimacy are more effectively established within an organisation for it to be considered trust-worthy and legitimate from the outside.
- *Be open to opportunities for creating strategic reflective opportunities for the executive and other staff* – in a time and task pressured environment, more flexible delivery mechanisms could be scoped for the MDBA executive. Approaches could include one-to-one lunches, scenario problem analysis & problem solving, formal presentations to the executive group, and closed group sessions.
- *Find ways for members of the Board to listen and learn* – to people both inside and outside the Authority – this may also open up a strategic approach to managing contentious risk.

- *Distinguish between power and influence* – this relates to perspectives of exclusions and disempowerment. Discussion may assist and enable people to engage and deploy their influencing skills at whatever grade.
- *Engage in alliance building* – this will be a critical component of any next iteration of the project. Essentially the project leaders will need to model their preparedness to take risks with their authority and influence by deploying the new thinking and skills. Conversational coaching may provide a useful 'safety net' for these individuals.

These recommendations, and the experiences of the scoping study by staff in the MDBA, were aimed at delivering a greater capacity to embrace change. This required challenging pre-existing ways of thinking, decision-making and working together productively. It is this capacity to *act* in a complex and changing situation that is relevant to all of the ToRs. **Our main point being that if an organisation like the MDBA had been better equipped with systemic and adaptive capability (plus a different organisational form and governance arrangements, as outlined above), then the likelihood of avoiding systemic failure would have been much greater.**

Please feel free to contact us for any further information or clarification regarding our submission.

Yours sincerely

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Chapter 1. Planning as performance: the Murray-Darling Basin Plan

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1.1. The emerging performance

The performance that is emerging following the release of the Murray Darling Basin Plan Guide at 4pm on Friday October 9th 2010 has been scripted since the creation and passage of the *Water Act 2007* (Cwlth) and the associated creation of the Murray Darling Basin Authority (MDBA).[i] What is unfolding is a tableau that is the product of the structural determinism of its design.[ii] In this chapter we first characterise certain features of the emerging performance following release of the planning guide. These features are then set within some of the structural determinants of the current policy/ planning design. We then take a step back and address the question of relevance of framing planning as a 'performance'. Arguments are then mounted for utilising this framing in a climate change world – that world in which the enactment of the Basin Plan has to proceed and in which future cycles of planning will happen. We conclude with some suggested policy and practice initiatives that, from our choice of framing, seem warranted at this moment in time.[iii]

Even by Australian standards the media has been in a mild frenzy since release of the Basin Plan Guide. It is not our purpose to draw out the significant threads of all that has been said already, nor do we wish to fully recapitulate the main features of the guide. We leave that to others. Instead we employ the metaphor of planning as performance as an analytical device to make sense of what is happening. Our organising image of a performance (Morgan 1986) is that of an orchestra or jazz band, though other forms of performance may offer equally relevant insights. We also employ a metaphor analysis, albeit selective, to drill down into the musical score to gauge some of the underlying

notes that give rise to the melody. As all metaphors reveal and conceal so the metaphors we employ have the same caveat (McClintock et al 2003; 2004).

The most significant feature of the new performance is that the music has been reset to favour one set of players over others, those who have historically played the tune. The new arrangement privileges those who play for the environment over those who have historically played for agriculture, the economy or other human needs. Importantly, though, the environment is generally anthropomorphised and, in language at least, seen as a player in its own right (a form of ecological determinism?). Of course it is the preferences and values of public servants, members of both parties in the Federal Parliament, interest groups, scientists etc that have composed the new arrangement and put it into play. In addition, just because a new arrangement has been created does not guarantee it will ever be performed let alone performed well. To mix metaphors, there is still a lot of water to go under the bridge.

The performance that has emerged in the week following release of the Basin Plan Guide is characterised by hyperbole, extravagant rhetoric, genuine fears, contestation, incipient conflict and poor listening. The public fora are characterised more by debate (literally to put down) than dialogue (when meaning runs through) (Kersten & Ison 1998). Jamie Pittock (2010), on one side of the argument, claims that the plan does not go far enough in returning water to the environment. He suggests that '*if the basin plan does not faithfully implement Australia's obligations under the* [Ramsar] *convention, wetland conservation activists could seek redress in the High Court*' thus hinting at conflict to

come. Images of nooses around irrigators' necks were a feature of the first public meeting at Shepparton (Ker 2010), as was the burning of the Basin Plan Guide outside a packed public meeting in Deniliquin. The Australian Conservation Foundation argues that

> *'a healthy river needs more water, but the same rule doesn't always apply for agriculture. Between 2001 and 2007 dry conditions meant irrigation industries used about 70 per cent less water, and the economic value of irrigation production fell by only 0.12 per cent'* (ACF 2010).[iv]

The other main feature of this phase of the performance is the extent to which 'consultation' is being pursued as the main, perhaps only, form of stakeholder engagement.[v] This has been largely structured into the act – though more creative engagement processes might legitimately have been pursued. The theoretical implications and limitations of consultation are discussed by, amongst others, Collins & Ison (2009).

Some performance metaphors can be gauged from an article by Ross Gittins writing in the Fairfax press (Gittins 2010). Recognising that a metaphor takes the form X *as* Y or X *is* Y, then some of the main metaphors in this article can be deduced (Table 1.1). All metaphors have theoretical entailments which can be understood as taken for granted assumptions that are held within a metaphor-in-use. Some of these are described in Table 1.1. Entailments may be enabling or disabling but it is only by making them explicit that we can discern the role they play and how this differs with context.

Table 1.1 here

By unpacking our performance metaphor further it makes sense to ask: what are the elements that, together, give rise to a performance? Well, the instruments could be classed as (i) governance mechanisms (e.g. regulations; legislation; market mechanisms; consultation; education; information provision); (ii) institutions/ social technologies (see Ison 2010 – examples include the plan, the Guide, the Water Act, the Minister etc); (iii) organisations, such as the MDBA, COAG, themselves made up of networks of institutions, and (iv) theories used knowingly, or not, sometimes taking the form of ideologies. The performers include public servants, water professionals, scientists/ economists/ researchers/ modellers, MDBA Board members, politicians (though as seen later, some deny this at the present time), interest groups and, depending on your perspective, the consulted.[vi] Citizens participate vicariously mediated by a plethora of theatre critics who write the reviews or offer their perspective on the media.

Who might be regarded as the audience? To be effective most performances require audiences who continue to be satisfied. Those affected but not involved could be seen as part of the audience, the voting public perhaps, differentiated into rural citizens and city citizens perhaps as well as international observers.

1.2. Structural determinants of the current performance

Asking who the conductor is, or might be, is revealing of some of the main structural determinants of the current performance. One observation is that there is clearly a lot of deflection of responsibility between the government and the MDBA over the Basin Plan. In reading the guide, the MDBA repeatedly asserts how it perceives its role (p. iii):

> *"While the Murray–Darling Basin Authority (the Authority) is charged with developing a Basin Plan for the Minister's consideration, this occurs within the framework of the Water Act 2007 (Cwlth). The Commonwealth Parliament in 2007 and 2008 clearly laid out the general objectives of the Water Act, and prescribed how the Basin Plan was to be developed."*

The MDBA then further spells out that the government has twice decided to develop a plan for the MDB, with support from both sides of Parliament and the Basin States. They also repeatedly point out the prescriptive nature of the *Water Act 2007* (Cwlth). This is especially important in setting the sustainable diversion limits (SDL) options, as they consider less than 3000 GL or more than 4000 GL back to the environment "will not meet the requirements of the Water Act" (p. xxi). Any less than 3000 GL would not serve environmental needs, while any more than 4000 GL would not optimise economic and social outcomes. In this case the 'scientific' range is 3000 - 7600 GL. The proposal in the Guide is summarised in gross terms in Figure 1.1.

Figure 1.1 here

Meanwhile, the current Water Minister, Tony Burke, chose to highlight the independence of the MDBA (Lateline, Friday 8th October):

> "*Well, the decision on the release is made by an independent authority. No minister tells them what to do. No minister should tell them what to do. It's their role to conduct an independent consultation and what they've brought out today is*

not 'the Basin Plan'. What they've brought out today is a guide to a draft of the Basin Plan."

This position, it can be argued, shows a lack of clear leadership (and responsibility) from government. And the MDBA are hardly being the frank and fearless public service that former National Water Commission head, Ken Matthews, argued for upon his retirement (Mathews 2010; Keane 2010). At the moment the media is giving a lot of oxygen to "angry farmers" as controversy sells papers. We argue that these are more than superficial issues. They are structural issues connected with the original Water Act and thus the MDBA design.

And in the wings awaits the various State interests. Victorian Water Minister Tim Holding has called 'for an end to simply stripping basin communities of their most valuable asset…"We have concerns with what has been proposed by the MDBA and the impact this would have" he said (The Weekly Times, Wednesday October 13, 2010 p.1). South Australian Premier Mike Rann has been reported welcoming the plan, saying that it will 'overturn a century of greed...' (Jones 2010).

The portrayal of what is at stake in Figure 1.1 masks the performance element of the ongoing governance of the MDB even under existing arrangements, the implementation of the plan if you like. In performance terms, water is clearly not divisible into different forms of water; e.g. a particular release could contain both irrigation and environmental water. And presumably environmental water will become subject to the same regimes as

other forms of water in terms of efficiency, monitoring, etc. The institutional complexity that could arise may be enough to undermine the whole performance.

There are also valid questions that can be asked about the nature and boundaries of the theatre - is it a biophysical boundary, an economic boundary, a sustainable population boundary, a rural livelihoods boundary or some combination of these? In the Australian context, the 'performance space' is made complex by the historical as well as contemporary aspects of Federalism and the need to coordinate multiple performances across horizontal and vertical spatial dimensions not to mention temporal dimensions for which current organisations and institutions are poorly designed (Figure 1.2).

Figure 1.2 here

Drawing on Ison *et al*'s (2007) analysis of typical environmental governance arrangements it is apparent that the *Water Act 2007* (Cwlth) is framed on an assumption that there is a known or knowable problem which will remain relatively static over time. Further, it is assumed that such problems are best addressed by regulation (usually understood as command and control) fiscal or market mechanisms and the provision of information in attempts to educate stakeholders through largely one-way consultation processes. Historically, 'stationarity' - the idea that natural systems fluctuate within an unchanging envelope of variability - is a foundational concept that permeates training and practice in water-resource engineering, but as Milly et al (2008) argue '…stationarity is dead and should no longer serve as a central, default assumption in water-resource risk

assessment and planning. Finding a suitable successor is crucial for human adaptation to changing climate.' They further argue that 'climate change undermines a basic assumption that historically has facilitated management of water supplies, demands, and risks' (Milly et al 2008). Climate change adaptation, if framed as a 'wicked problem' (APSC 2007) also undermines a position that assumes that water governance and managing is a problem of the known or knowable type and thus raises questions about the on-going utility of traditional governance mechanisms (Ison et al 2007; Godden & Ison 2010).

Performances built on stationarity and fixed knowledge forms give rise to systematic (i.e. linear, step by step) practice rather than systemic practice that is relational, recursive and circular and characterised by learning and adaptation (Ison 2010).

1.3. Why focus on performance?

Performances, if they are effective, are intrinsically systemic because they give rise to a relational, in contrast to a linear, dynamic; e.g. performer with audience, with other performers, with conductor, etc. Performances also necessitate the building of relational capital which results from the interactions between the other forms of capital, including natural, social, artificial and human – all of which are systemically connected.

Relational capital is precious – it is hard to build but easy to destroy. The practices of the Australian Public Service (APS) traditionally run counter to the cultivation and conservation of relational capital. Examples are legion within the public sector of the undermining of joined-up practice by the intentional and unintentional undermining of

relational capital of the sort that creates on-going effective performances and which is central to social learning (Ison and Wallis 2009; Ison et al 2007).

There is also the question of performance in the APS. In July 2009, Lynelle Briggs, the then APS commissioner, argued the need for:[vii]

- removing unnecessary obstacles to innovation, to improve the quality of outcomes in complex and uncertain policy areas, and
- developing more variegated accountability and performance management arrangements, better suited to new modes of policy implementation

She also made the case for developing more horizontal accountability mechanisms (a form of horizontal governance) and the need for skills and capabilities for APS staff in:

(i) problem framing and boundary setting;

(ii) generating fresh thinking on intractable problems;

(iii) working across organisational and disciplinary boundaries;

(iv) making effective decisions in situations with high levels of uncertainty;

(v) being able to tolerate rapid change in the way problems are defined and

(vi) engaging stakeholders as joint decision-makers (not just providers or recipients of services).

These capabilities seem in short supply at the moment and the institutional arrangements far from conducive to their enactment (Ison & Wallis 2009). Westminster style governance performance leaves a lot to be desired. For example, Ringen (2009) reported

on a major study looking at what the UK New Labour party achieved in terms of its own social policy objectives over the 10 year period 1997-2007.[viii] He studied the flagship policies of child poverty, education, social justice and health and found that they had achieved 'absolutely nothing'. His study provides strong evidence for the systemic failure of UK governance by highlighting the problems that emerge when governments adopt a command and control approach and fail to mobilise citizens or stakeholders in policy development and implementation. His sobering conclusion is that no UK government, of any political persuasion, can currently get done what it is elected to do.

Ringen's findings illustrate a situation that can be understood as a 'structure determined system'. It is not only governments that are constrained by the system in which they operate. Take utility companies that deliver social goods - such as water or energy – for example. Most now have as a main measure of performance the profit derived from sales of water or energy. The system is not structured to recognise that in today's world the main social benefit from water and energy comes from how little water or energy is used and the efficiency of its use. We create measures of performance which conserve particular structural relations which give rises to certain forms of organisation. Only by inventing new organisations, comprising different structural relations can we break out of the constraints of particular structural determinisms.

Performance begins at the interpersonal; it entails a choreography of the emotions (Russell and Ison 2005). For example, research into group functioning and effectiveness has shown that informal contracting prior to starting group processes enhances

performance and sets a more positive emotional dynamic. The following type of informal contract has been effectively used in participatory research (Ison et al 2009) and has the potential to be applied more broadly to public participation in the MDB:

- Provide others with the experience of being listened to
- Adopt behaviour that checks out your own understandings and assumptions first
- Appreciate the diversity of experiences and perspectives in the room
- Feel comfortable with asking questions or saying you don't know
- Agree that who says what stays here (Chatham House Rules)
- All participants take responsibility for monitoring this contract

This process needs to be adapted to context and this particular set of agreements will not be valid in all settings. An analysis of Barrack Obama's approach to political practice suggests some other design considerations for more effective interpersonal performances (see Ison 2010, based on Freedland 2008):

- Encountering of the other as a legitimate other
- Predisposition to learning (which in itself is a way of abandoning certainty)
- Capacity for listening – such that he creates for those in the conversation the experience of being actively listened to
- Capacity and technique of 'mirroring back' his understanding of the position of others
- Understanding and valuing of multiple perspectives in respect to a situation or issue of concern

- Ability to move between different levels of abstraction and to synthesise different strands of an argument
- Awareness that change comes through relationships
- Ability, knowingly or not, to be both systemic and systematic
- Use of diagrams as a 'mediating object' in his practice

Better performances need to be designed and sustained for living and governing in a climate-change world.

1.4. Recasting the current performance – some options

What should we turn to if there is a systemic failure of this public policy process? We suggest the following:

- Reframe the problematique, as a central part of inventing systemic and adaptive governance for managing a co-evolutionary dynamic, as a purposefully designed 'learning system' organised as an ongoing systemic inquiry (Ison 2010). To do this involves framing the basin and its future as a coupled socio-ecological system.
- Reorganise future water governance as a contribution to innovation in 'horizontal governance' (see Ison 2010b).
- Invest in social learning (Collins and Ison 2009) as a means to generate ongoing (real time) effective performances.

Following Giddens (2009 , p. 8), who argues that 'to develop a politics of climate change, new concepts are needed', *systemic inquiry* is put forward by Ison (2010) as both a

practice and a potential institution better able to be employed in situations of complexity and uncertainty. Systemic inquiry is designed for the governance and managing of uncertainty. One might equally add that to develop a praxis of water governance as part of climate change adaptation other new, conducive, institutional arrangements are also needed.

In the face of the uncertainties, complexities, interdependencies and multiple stakeholdings in the MDB, an approach to its governing and managing is needed that is adaptive and contingent. In such situations a national systemic inquiry could have been chosen as an alternative governance mechanism instead of a traditional regulatory, legislative and planning approach. An effectively constituted systemic inquiry – after all the issues are unlikely to go away in the short to medium term, if ever – could become a vehicle for the deployment of social learning approaches and the adoption of systems practices.

As noted earlier current forms of governance in most western democracies, despite their many strengths, are not well suited for managing long-term complex issues (Ison 2010b). Helen Ingram (2010) who has long experience of water governance argued recently that:

> *'Attempts to design improved water resources management and institutions must attend to context. Standardised reforms have failed time after time …In general, clumsy solutions that embrace multiple perspectives and appeal to different kinds of logic are preferable…..mixed strategies that appeal to different ways of knowing are likely to be more effective.'*

Given the governance we have at the moment what would we recommend starting from current circumstances? What next?

- Create a cabinet level interdepartmental 'water committee' - make water everyone's business – that is better able to deal with the complexities of on-going water governance reform (and cognisant that water is and will remain a key strategic issue on the Australian continent);
- Institutionalise a national *systemic inquiry* into water and energy governance in a climate change world. Such an innovation would address the limitations of the three year electoral cycle, which is too short for long-term natural resource and climate change issues. Such an innovation is warranted in what is now a period new to human history (Ison 2010b). Features of the UK Climate Committee and the UK Royal Commission on Pollution could help in designing such an institution;
- Use the current political refocus on regional Australia to address the policy vacuum that has developed in Australia around rural and regional futures. This needs to be understood as a process of exploring systemic opportunities framed as 'livelihoods' and not industries, sectors, farms etc;
- Invent a range of new ecosystems services which add to the livelihood mix of current and future rural inhabitants;
- Reform, on a coherent national basis, CMAs (catchment management authorities) as institutions able to manage a coupled 'socio-ecological system.' Managing catchments as coupled socio-ecological systems requires recognition of the systemic interconnection of humans to their environment if an on-going effective

performance is to be created. In this context, planning is a form of social technology that mediates these connections.

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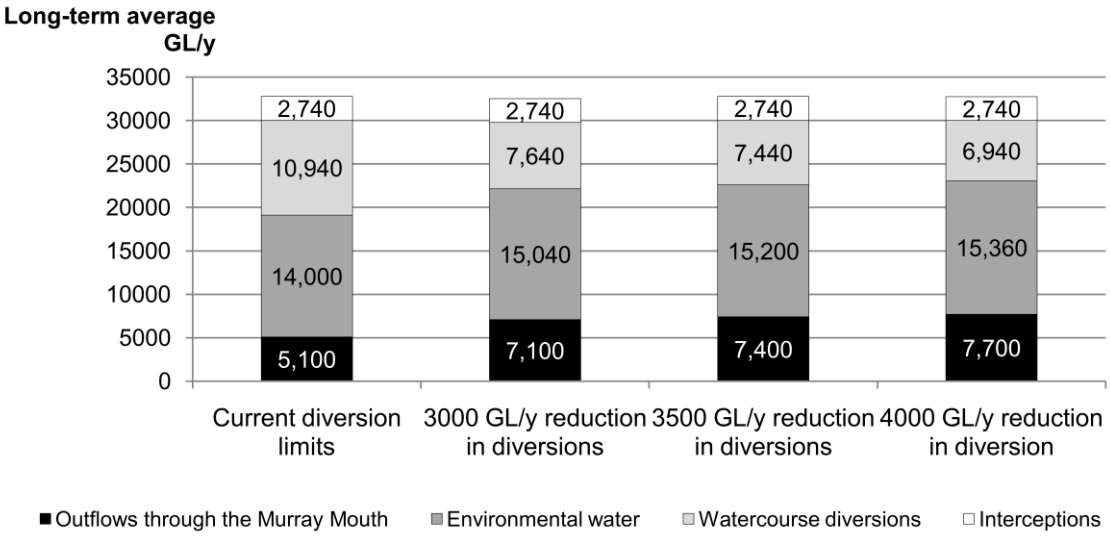
Table 1.1 Some of the main metaphors employed by Gittins in his article entitled: Don't think you can keep on neglecting me, Darling.

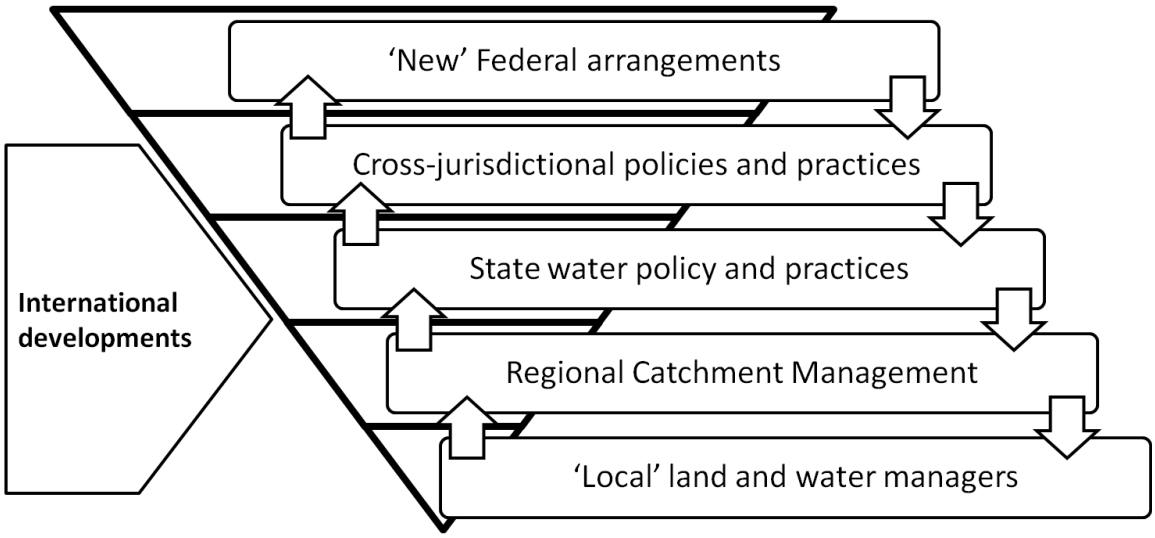
Key concept	**Metaphors**	**Entailments**
Sustainability as	dangerous	threatens assumptions
	irresistibly attractive	?
	having a wonderful ring to it	?
	dripping with virtue	?
Environment as	able to fail	something static
	sustainable	something static?
	natural	humans are not natural
	abusable/saveable	a product of human design
Ecosystems as	healthy	sickness and health knowable
	having tipping points	behave as complex adaptive systems
	like flogging a horse	can be killed
Politics as	heads in the sand	not open and adaptive
	exaggerating claims	rhetorical practice
Country towns as	declinable	viability knowable

1.6. Figure captions

Figure 1.1 Murray Darling Basin Guide proposals for whole-of-basin adjustments (Source: The Weekly Times, 13th October, 2010)

Figure 1.2 A model of the 'performance space' in which the Murray Darling Basin Plan has to be enacted depicted as a transect through one state (Victoria) and one CMA (Goulburn Broken Catchment Management Authority).


Long-term average GL/y
35000
30000
25000
20000
15000
10000
5000
0
2,740
10,940
14,000
5,100
2,740
7,640
15,040
7,100
2,740
7,440
15,200
7,400
2,740
6,940
15,360
7,700
Current diversion limits
3000 GL/y reduction in diversions
3500 GL/y reduction in diversions
4000 GL/y reduction in diversion
Outflows through the Murray Mouth
Environmental water
Watercourse diversions
Interceptions


'New' Federal arrangements
Cross-jurisdictional policies and practices
State water policy and practices
Regional Catchment Management
'Local' land and water managers
International developments

1.7. Endnotes

[i] The current scene from the performance actually started days earlier with leaks to the media and other bodies.

[ii] A tableau is a striking scene or picture; structural determinism refers to the understanding that whatever happens to a system is a result of its present structure and determined by it.

[iii] Frames are used to negotiate the complexity of the world by determining what requires attention and what can be ignored. A frame is the context through which a person interprets the world.

[iv] The point has been made that these average data mask trends and local variations and ignore the impacts of debt loads.

[v] Reports about the framing of community engagements vary – it is described in some reports as consultation but in others as 'information provision sessions'; this may reflect a lack of clarity about purpose.

[vi] Richard Price points out that the media, i.e., journalists, could also be considered a major player

[vii] See http://www.apsc.gov.au/media/briggs150709.htm accessed 11 August 2009.

[viii] See http://www.youtube.com/watch?v=AHcfNy1_zqA&feature=related

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Strengthening Water Governance in Australia

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.

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.

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 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

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Water Governance Research Priorities

The Water Governance Research Initiative held a two-day workshop in Canberra, November 15-16 2010. The aim of the workshop was to bring together researchers and policy practitioners to explore the needs and priorities of water governance research in Australia and to bring forth an agenda of critical research needs for water governance.

Attendees included leading researchers and practitioners from a range of disciplinary backgrounds (e.g. physical sciences, economics, law, social research and comparative international water research). Participatory sessions were used to stimulate dialogue to increase appreciation of different perspectives, foster individual and group self-reflection and identify emerging research issues and opportunities. The following is a summary of research priorities emerging from the workshop:

1. Integration of the multiple values of water into a water governance framework. This includes understanding community values and expectations of environmental water, preferably through using case studies where water allocations have generated social consensus. There is also a need for more research into the measurement of both the ecological and social benefits of those allocations and access to information through transparent reporting of entitlement flows.

2. Research on the conditions for effective multi-level governance; principally how to improve the communication and coordination between agencies and stakeholders at different levels. This will involve addressing the divisions in responsibility and accountability for policy and implementation, and the power imbalances between central agencies and regions. Analysis of the jurisdictional responsibilities, capacities and conflicts regarding institutional water management is required. In particular, there is a need for research into enabling and empowering regional and local government's involvement in water governance and 'on-ground' implementation.

3. A critical issue facing water governance research, policy and practice, are poor communication through a lack of common understanding and language. There is a communication deficit between the disciplines and between scientific knowledge and policy development and implementation that creates misunderstandings. Wicked problems require inter-disciplinary research and there is an urgent need to investigate the way different knowledge's can be integrated with each other and with practice. There is, in particular, a need for better coordinated social science research with more involved interaction with water managers/organisations and biophysical science.

4. There is a paucity of effective integration of community values and best-practice community engagement in water governance. Community values, norms, expectations, knowledge, and understandings are dynamic. We need a better understanding of the means to capture, unpack and understand these dynamics, and apply them in policy and planning. Important questions arising in the water governance context include: how do cultures and communities develop particular values and visions for water futures, and how they are shared and communicated? Where, when and how does social engagement need to be used in the governance and planning process to be effective? How can researchers engage with and priorities complex values systems and the ability to transfer values and norms into framing? How are water problems framed in relation to concepts of social justice? A specific area of concern is the growing mistrust and division between rural and urban areas.

5. Development of water consumption reporting protocols, and more operable standards for collection, use and accessibility of water data. Information standards for key areas relating to MDB or any water planning are needed.

6. Interdisciplinary research of water in whole-of-system sustainability, including the biophysical landscape (e.g. interaction of ground and surface waters, soil condition, biodiversity) and socio-economic systems. Research in needed into how best to integrate governance of water, climate change and other environmental/ sustainability challenges, and to avoid perverse outcomes and unintended consequences.