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**Wednesday 2<sup>nd</sup> March 2010**

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Submission No:	320.1
Date Received:	2/3/11
Secretary:	GW

Mr Chairman, Committee members,

Thank you for the invitation to meet with you this morning. Our purpose today is to highlight three main points and then invite questions in response to these points and our written submission. This handout summarises our three points. I will present the first two points and my colleague Dr Philip Wallis will present the third.

From our perspective you are charged with addressing a major issue of ongoing concern to Australia which has proven to be long standing and intractable. In some circles these situations are called ‘wicked problems’ or situations characterised by uncertainty, complexity, interdependencies and multiple partial perspectives. Albert Einstein once said, “You can’t solve a problem with the same mind that created it.” We suggest that the current MDB situation will not be improved by continuing the thinking that has got us into this mess. And, with due respect, this raises the point of how each of you understand and interpret the terms of reference and thus the purpose of your inquiry. In other words how you frame the MDB situation is a choice you can make individually or collectively, there is no ultimate objective truth to be uncovered.

*Point 1:* The Water Act (2007) and the MDBA were designed on thinking no longer fit for purpose. Historically the main governance mechanisms for NRM have been

regulation, including legislation, market or fiscal mechanisms and the provision of information or education. These mechanisms assume that everyone agrees what the problem is and that it remains static over a relatively long time frame. These traditional governance mechanisms have not proven adept in situations where what is at issue is contested, there are multiple stakeholders and the situation is dynamic in time and space, i.e. situations like governing the MDB. Water governance has been historically dominated by engineers and water technologists and hydrologists. In 2008 in the journal *Science*, Milly et al (2008) outline how historically, ‘stationarity’, the idea that natural systems fluctuate within an unchanging envelope of variability, has become a foundational concept that permeates training and practice in water-resource engineering. However, in the context of climate change they argue that ‘...stationarity is dead and should no longer serve as a central, default assumption in water-resource risk assessment and planning.’ They argue that ‘finding a suitable successor is crucial for human adaptation to changing climate’.<sup>1</sup> Performances and designs 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. Additionally, triple bottom line thinking – the idea that there are trade-offs to be made between the environment, social and economic are no longer adequate. After all the economic is just another way of being social, so should be subsumed into social considerations and thus a broader policy framing that situates water centrally in a rural or regional futures and livelihoods strategy. To summarise our first point, the

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<sup>1</sup> Milly P, Betancourt J, Falkenmark M, Hirsch R, Kundzewicz Z, Lettenmaier D, Stouffer R (2008) Stationarity is dead: Whither water management? *Science* 319, no. 5863, pp. 573-574.

thinking on which current arrangements and thus expectations are built are not systemic or holistic and poorly designed for adaptation and real time effectiveness.

*Point 2.* There are alternatives to current thinking and institutional arrangements likely to be better fit for purpose. To fully appreciate these alternatives requires a shift away from linear-cause effect and reductionist thinking to relational, systemic thinking. The first new concept that needs to be built into future governance arrangements is to frame the MDB as a socio-ecological system. To explain what I mean let me use an analogy. As a phenomenon a comfortable pair of shoes does not exist solely because of the properties of the shoe. What makes and keeps shoes comfortable is a product of the recurrent interactions between a shoe and a foot. Put a comfortable shoe in a cupboard for a year before wearing it again and it is likely it will no longer be comfortable – the shoe material may have become stiff, your foot may have changed or both may have happened. My shoe analogy is an example of what is known as a co-evolutionary dynamic. What is clear in the MDB is that we are on the wrong co-evolutionary trajectory. This has to change but we need to invent new types of organisation, such as an autonomous, deliberative commission charged with the systemic and adaptive governance of the MDB on behalf of all Australians and designed on a framing of the MDB as a coupled socio-ecological system. Reinvention, reinvestment in, and harmonising the network of regional CMAs (or equivalents) is an essential ingredient of on-going reform. Our submission contains other material which extends these arguments and provides evidence from our research, including work within the MDBA. Two implications of the shift we suggest is firstly efficiency alone is also a poor measure of system performance and

secondly good science remains necessary but is not sufficient; in my shoe analogy if we use science to study the shoe it tells us very little about the foot, or more importantly the nature and trajectory of the relationship between foot and shoe. Science alone cannot determine the direction we should pursue. There also needs to be a shift in the types of research we do to support future MDB governance. Phil will now expand on this point.

*Point 3:* The main objective of the Water Governance Research Initiative, which we represent today, is to create space for a community of water researchers and practitioners to engage in conversation about critical water governance issues and opportunities. I should make the point that when we refer to governance, we are talking about the totality of mechanisms that can be used to influence social change, and some of the research fields that deal with this include economics, social sciences, law, philosophy, systems, history, anthropology as well as trans-disciplinary research areas. Two of the documents referred to in our written submission, the first entitled 'strengthening water governance in Australia' and the second entitled 'national water governance research priorities' report the views of a sample of researchers working in this space. The first document 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 a process of inquiry and learning among a group of people that can help to improve complex and uncertain situations. The role that water governance research has to play is to improve understanding of the current situation as a wicked problem, to devise ways of minimising unintended consequences, to design social learning into future governance arrangements, and to identify the advantages and disadvantages of refining water governance and

investing in social learning. The second document highlights a set of water governance research priorities as identified from a workshop of 50 researchers and policy practitioners from around Australia, held late last year. A key priority is the recognition of the multiple values of water and its integration in a water governance framework. This is a critical point, as water is often perceived only as 'environmental water' or 'irrigation water' or 'delivery share', when in fact water embodies multiple values that are not necessarily mutually exclusive. Another priority is to explore the conditions needed for effective multi-level governance of water, principally how to improve the communication and coordination between agencies and stakeholders at different levels and how to integrate community values, norms, expectations, knowledge and understandings, which are dynamic, and best-practice community engagement into water governance. Again, a key role for water governance researchers could be to engage in co-research with key agencies and stakeholders in the Murray Darling Basin to improve understanding of the situation and to help facilitate improved governance arrangements.

*To summarise we recommend more significant investment in water governance research, the commissioning of research which entails more diverse disciplinary perspectives and a shift in culture so that diverse perspectives are more widely appreciated and used to inform the policy process.*