# Water and Conflict Resolution: From Smoke Filled Rooms to Public Participation

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5th Australian Stream Management Conference

Albury

21-25 May 2007

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**Abstract**
Water policy and its implementation have generated much conflict during the last decade. Where once *'powerful interests could do deals with politicians in smoke-filled rooms'*, participation is now demanded by regional stakeholders. Fair processes are a prerequisite for resolution of conflict and for innovation in finding options and solutions (social learning). It is proposed that criteria are developed for achievement of interactive, procedural and distributive justice so that decisions are defensible when audited. The progress in water sharing in the Murrumbidgee Valley is presented as a case study.

**Keywords** Environmental flow, water use efficiency, co-learning, irrigation, water security, justice

## Conflicts in water policy

Regional water conflicts created many headlines over the last decade. For example, under the banner *'Water Wars'* the Australian (15 September 1995) reported on the industry response to the COAG Water Reform Framework announcements that there should be full cost recovery and increased environmental flows: *'At Deniliquin on Wednesday afternoon 500 irrigators voted unanimously to reject the governments new water policies and demanded consultation'*. Recently, local Griffith irrigators are *'fuming over mid season allocation cuts imposed by the state'* (Daily Advertiser, Wagga Wagga, 13 January 2007) and 2000 irrigators turned out in Deniliquin *'to demand compensation from the government for water they believe was stolen'* (Daily Advertiser, 16-17 December 2006). Other issues creating conflict include: disputes over costing and pricing; paying for infrastructure when no water is delivered; effects of trading on stranded infrastructure; exit fees imposed by irrigation corporations; effects of trading on health of regional communities; conditions under which environmental water might be purchased from irrigators; rural to urban transfers; and use of water for electricity generation across state borders. Again under the heading *'Water Wars'* the Australian (9 February 2007) describes the Prime Minister's $10 billion Plan for Water Security as a looming tension between commonwealth and state governments.

In a reflective piece about competition for water resources written a decade ago, Cullen (1997) wrote: *'What is new is the involvement of a much wider community in considering these issues. Once powerful interests could do deals with politicians in smoke filled rooms. Now such deals are subject to intense media and public scrutiny. We have an emerging set of tools for dispute resolution and the community is slowly learning to use these tools effectively.'*

But ten years later the evidence for effective public involvement in planning remains open to dispute.

## Criteria for effective public participation and social learning

The literature on the benefits of public participation is extensive (eg Beder 2006). Paton *et al.* (2004) described the strengths and weaknesses of regional approaches to natural resources management in Australia and Gray (2005) explored the role of social power relationships in local and regional governance. Less has been written about rural water specifically. Syme *et al.* (1999) and Nancarrow and Syme (2001) have written about fairness principles as a concept for judging the justice of water allocation decisions and about the process of engagement that is required. Table 1 gives a short list of statements that might be used to test effectiveness of community participation and social learning (modified from Syme and Nancarrow, 2002).

Process fairness and justice is generally regarded as prerequisite for creating a climate of trust and enquiry (social learning). This is consistent with the National Water Commission's (NWC) suggestions on community engagement (Cullen 2006) that *'where there are uncertainties, a process of joint discovery may be appropriate'*. Hillman *et al.* (2005) advocate a similar approach for dealing with complex natural resource management (NRM) issues where information is limited and propose a framework for 'management experiments' based on the principles of adaptive management.

**Table 1 Justice criteria in water allocations decisions and link to social learning**

| Process | Description | Statements |
|---|---|---|
| Interactive justice | Community engagement that that is pleasant, dignified and adequately informed | *I enjoyed the community meeting*<br>*I liked the way the meeting was run*<br>*I found it easy to contribute to discussions*<br>*The information provided was sufficient*<br>*I had the chance to say all I wanted to* |
| Procedural justice | Adequate representation so that all participants can be heard by decision makers<br><br>Clarity about responsibility for advice and decision-making | *There seemed to be a good variety of people and interests at the meeting*<br>*The boundary of the topic for decision was clear*<br>*Our role in advice and decision making was clear at the beginning*<br>*The agency listened to what I had to say*<br>*The report was an accurate summary of what the meeting said* |
| Distributive justice | Achieved when there is satisfaction with the decision itself | *I think the agency made the best decision*<br>*I think that the final decisions will be fair* |
| *Social learning* | Adaptive management, joint discovery, trust and dignity | *I would participate in a similar meeting/ process again*<br>*We found new options and solutions*<br>*I changed my position*<br>*We agreed to further explore several areas* |

**Audit and review**

Agencies with key responsibilities for review and audit of water sharing planning also recommend attention to the principles of justice and fairness. The National Water Commission (NWC) advises that: *'It is essential to engage the community so that everyone feels they have had an opportunity to be involved and be heard. Individuals expect procedural justice and some equity in the outcomes. Outside interests should not dominate' and 'There should be a serious effort to engage the wider community'* (Cullen 2006).
An audit of Water Sharing Planning by the NWC resulted in retention of $13 million of competition payments from NSW, reflecting issues of interactive and procedural justice as key concerns: *'Ecological science was inadequate; planning lacked transparency; publicly available information is insufficient; and a coherent methodology is needed for assessing environmental water needs'* (NWC 2006).

The Natural Resources Commission of NSW (NRC) has developed *'Standards of Quality NRM'* that seem to reflect the justice criteria, although different words are used. Community engagement is listed as one heading in a seven step adaptive management framework (NRC 2006). Guidance on community engagement to Catchment Management Authorities (CMAs) includes advice on developing: '*effective community networking with all relevant and interested community groups... that recognises diversity, is culturally appropriate'*... and is *'voluntary and building a willingness to contribute'*. It is also suggested that CMAs should '*monitor and evaluate the effectiveness of community engagement processes'* but no specific criteria are provided.

**Murrumbidgee case study: issues**

Water sharing in the Murrumbidgee Valley is particularly contentious because of conflicting needs of irrigators and the environment. The Murrumbidgee River Management Committee (MRMC) met 32 times over five years (September 1997 – December 2002), first to optimise the allocation of water for the environment and then to develop a statutory water sharing plan. The plan was one of the first to be gazetted in New South Wales (NSW), in early 2002. The final draft plan (MRMC 2002) contained eight dissenting individual reports from a committee membership of eighteen, and was given an E rating ('needs to be rewritten') by the NSW Nature Conservation Council. The planning processes were clearly not conducive to achieving interactive and procedural justice so it is not surprising that the fairness of the outcome (distributional justice) was questioned and disputed. Deficiencies in planning and processes, described previously (Bowmer 2003), are summarised below:

*Interactive justice*— The information available was clearly inadequate initially, especially in aquatic ecology and hydrology (only a monthly flow model was available). So it seemed sensible to start with a mechanistic set of river flow rules that attempted to restore and mimic some of the natural variability in flow ('translucency flows'). Later it became clear that this approach would only benefit in-stream ecological processes in the upper reaches of the river. Consequently some of the translucency water was reserved in the storages to 'piggy back' dam releases onto river height in order to achieve over-bank flow and lateral connection between the river and its wetlands. This required deliberative, rather than mechanistic decision-making, a daily flow model, information on the optimal frequency for wetland connection, and planning and modeling that is long-term (decadal, rather than annual). The 'piggy- backing' methodology is also inconsistent with the principle that environmental water should always have the highest priority in the hierarchy of access rights. The approach, combined with trading options ('countercyclical trading') has been pioneered by the Murray Wetlands Working Group and is being further developed through River Reach by Murrumbidgee Irrigation and Murrumbidgee CMA (see later).

*Procedural justice* — The MRMC, consisting of agency, community and industry representatives reached consensus on environmental flow rules in 1998. Subsequently a change in policy associated with the legislative requirements of the *Water Act 2000* required majority rather than consensus decisions and began a 'slippery slide' from community consultation to ministerial decision-making. The community became confused and angry about the changes. This experience highlights the importance of having agreed ground rules on processes that include technical boundaries and responsibilites for decision-making. Of course, there will always be tension between a central set of policies and principles and local/regional flexibility but for successful engagement, experience everywhere suggests that there should be as much room for local innovation as possible.

*Distributive justice*— The plan achieved a useful tradeoff between water for consumptive users and the environment that optimised the timing of early season allocation for irrigators and spring time allocation for the environment. Improved security of property rights was also an important issue for irrigators. However, as noted earlier, many of the committee were distressed by perceived ministerial intervention and changes in protocols and 'broke ranks' by going to the press to try to achieve better outcomes for their constituents.

**Murrumbidgee case study: outcomes**

In spite of problems in the planning process framework, the Murrumbidgee River Management Committee began to develop a knowledge base and bring technical expertise into the catchment to enrich local knowledge through the commissioning of expert panels (eg Buchan, 2000; Agribusiness Taskforce 2000) and research projects (eg Watts *et al.* 2001). This information provides a basis for further progress by a range of community and industry groups. Also, the process of participation set the scene for continuing dialogue and exploration of options. Some of these approaches include achievement of environmental dividends through new businesses and changed patterns of water use; restoration of more natural flow patterns without the use of more water; and engagement of local people in stewardship and care of riverine assets. Examples follow:

*New business and water use efficiency*—

1. The Murrumbidgee Valley Water Efficiency Feasibility Project examined the business case for saving water. The study claimed 1334 Gl per annum of water in unaccounted flows and losses; 945 Gl for saving through investments, reforms and matching crops to soil; and 4500 new job opportunities (Pratt Water 2004).
2. Evaporation savings of 20-30GL per annum are being made by re-engineering of Barren Box Swamp and use of en- route storages in the Murrumbidgee Irrigation Areas through the activities of Water for Rivers and Murrumbidgee Irrigation (MI 2006a).
3. Both MI and Coleambally Irrigation Cooperative Limited (CICL) have achieved major water savings through on- and off- farm measures. CICL has recently (2 February 2007) received a $12.53 million boost from the NWC's Water Smart program for implementing and demonstrating the benefits of an integrated set of cost effective control, sensor and communication technologies. MI lists savings of 88-98 GL per annum in water use efficiency.
4. Proposals to reduce the peak water demand of summer cropping through new business opportunities in winter cropping are being developed with CICL through the CRC for Irrigation Futures System Harmonisation and Regional Partnerships program (Khan 2006).

*Environmental benefits without the use of more water—*

1. Improvements in longitudinal connectivity of the river for fish passage are being made through changes in State Water Corporation's (SWC) weir operating protocols (SWC 2006).
2. Protocols have been established for extension of peak flows from rainfall events by 'pulsing' or regulated flow management; and, where possible, reinstatement of more variable flows in rivers (SWC 2006; Department of Infrastructure Planning and Natural Resources (DIPNR) 2005).
3. The relationship between river height and wetland watering that provides underpinning information for environmental flow management has been researched by Charles Sturt and other Universities (Page *et al.* 2005) and is being further explored through a project funded by LWA (Murrumbidgee CMA 2006)
4. Environmental management plans have been implemented as part of the operating licenses for Irrigation Corporations and Cooperatives (MI 2006a; CICL 2006). EnviroWise (MI) includes a biodiversity program that focuses on water birds, enhancement of remnant vegetation and tree planting. The Coleambally Land and Water Management Plan focuses on net recharge management, water quality including reduced pesticide levels in drainage systems, and biodiversity. A key achievement is the reduction in salt load and drainage flows leaving the irrigation area.
5. Investment in a weir on Beavers Creek that will protect about 100km of a Murrumbidgee anabranch from high summer flows while reducing water losses is being explored by Water for Rivers.

*Community engagement —*

1. The Fivebough and Tuckerbill Swamps have been designated as wetlands of international importance under the Ramsar Convention; their health has been enhanced by the work of schools and community groups; and irrigation drainage and effluent water is being provided by MI and Leeton Shire Council, respectively (Schultz 2004).
2. Partnerships have been developed by the Murrumbidgee Wetlands Working Group to restore dry wetlands (Markeys Lagoon) by river pumping and watering: (Forests NSW 2006) and to reverse the permanent inundation of another wetland complex associated with Gogelderie Weir (Coonacoocabil Lagoon) with the Wiradjuri community, Narrandera Angling Club, MI and three state agencies (Department of Environment and Conservation 2004).
3. The Environmental Champions program, a five level accreditation program is designed to give recognition to rice farmers for undertaking activities to achieve environmental excellence and sustainability on- and off- farm; it has been developed by the Rice Growers Association (RGA 2006).

Clearly much progress has been made and new options continue to emerge. For example, a proposal (River Reach) for counter-cyclical trading that is based on 'piggy backing' methodology to achieve river wetland connection in wetter years while providing increased security to irrigators in dry years has recently been funded by the NWC through a partnership of MI and Murrumbidgee CMA (MI 2006b; John Howe pers. comm.). The recent audit of the Catchment Action Plan by the NRC provides further direction and recommendations.

It is now important to integrate the approaches listed above, set priorities, and turn the opportunities into on-ground actions. This is now the role and responsibility of the Murrumbidgee CMA (and of 56 similar groups in other regions Australia- wide). The role of CMAs and regional groups in public participation and planning has been highlighted in the National Water Initiative (Gardner and Bowmer, in press) but remains to be made transparent in the National Action Plan for Water Security.

**Summary: justice criteria to support defensible public participation**

As noted in the report of a recent expert workshop convened by LWA in support of the implementation of the National Water Initiative *'Almost inevitably, with a range of community values and interests in play, there will be disagreement and conflict over environmental allocations. The question is how good process and good governance can reduce the potential for conflict or manage it well by ensuring that the decisions are* ***defensible*** *on a broad range of grounds'* (LWA 2006).

The auditors and reviewers, the NWC and the NRC support the principles of transparency and participation in planning generally, so are expected to applaud the use of justice criteria to assess the design and effectiveness of public participation and planning in water sharing and related conflicts. Some ideas on criteria for judging effective public participation are given earlier. It is important to report positive progress to the auditors of planning processes, as described in the examples given above. Otherwise there is a danger

that, in any all-embracing plan for water reform, the process of public participation and social learning, on which much progress has been made in the Murrumbidgee and elsewhere, could be sacrificed, with decision-making returned to a central bureaucracy.

**Acknowledgments**
Land &Water Australia commissioned an early version of this paper for ABARE Outlook Conference 2007. I am indebted to the Murrumbidgee River Management Committee members and Murrumbidgee community.

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