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Research and Technical Notes

Australia's Murray-Darling Basin Initiative - Correcting the Record
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Introduction

Recent issues of *Water International* have given attention to some of the innovative measures being taken in Australian water resources management. While most have presented an accurate account of what is taking place (Chenoweth, 1999; Malano et al., 1999), it is unfortunate that others have contained errors of both fact and impression (Pigram, 2000; Chatterton and Chatterton, 2001). If readers and practitioners are to benefit from the Australian experiences, it is important that an accurate picture be presented.

The Murray-Darling Basin: A Setting

The Murray-Darling Basin (MDB) is one of the world's largest river systems in terms of the extent of its catchment, but its surface runoff is among the smallest. Not only are its water resources limited in quantity, they are unevenly distributed, both seasonally and spatially. It is a highly regulated river system and close to 12 000 gigalitres are diverted from the rivers, 95 percent for irrigation. The diversions have had a significant impact on the flows of almost all of the Basin's rivers, as well as reducing the median annual flow from the Murray Mouth by 80 percent.

The Basin's economy is dominated by agriculture. It accounts for about 41 percent of the total annual gross value of agricultural production in Australia, including three-quarters of the value of irrigated agricultural production. While figures are available for some other resource-based industries, no figures are available for the total value of "resource-based industries" in the MDB, as incorrectly stated by Pigram. In undertaking the research for Murray-Darling Basin Resources (Crabb, 1997), the author made every effort to determine such a figure, but without success, as many of the required data are not available. In terms of population, nearly two million people live within the Basin. Water from the Basin is provided to many people who live beyond its boundaries, including the population of Adelaide, but the total would certainly not come to twice the number who live within the Basin. Having said that,

there are many beyond the Basin, in Australia and overseas, who consume its produce in one form or another.

The upstream-downstream contrasts made by Pigram are not valid, as a mix of activities exists on all rivers. It is incorrect to imply that economic functions are not important in the upstream areas, especially of the Murray system, where winter tourism and hydro-electricity generation predominate, together with the numerous national parks. At the same time, there are many resources in the lower reaches of the Murray, as well as other rivers that have significant environmental value.

Early Management Endeavours

The Murray-Darling Basin (MDB) covers parts of Queensland, New South Wales, Victoria, South Australia and the whole of the Australian Capital Territory (ACT). Managing the water and land resources of this inter-jurisdictional basin has long presented difficulties, from before the time of Federation in 1901. In spite of many debates, it was not until 1915 that the River Murray Waters Agreement (RMWA) was signed. Though at the time pioneering legislation, it was a limited mandate, essentially confined to the sharing of River Murray water between New South Wales, Victoria and South Australia. It took another two years to establish the River Murray Commission (RMC), which had the task of putting the Agreement into effect. The main limitations of the RMWA were that it was confined primarily to the main stream of the Murray, which is why Queensland was not a signatory, and that it was only concerned with quantitative issues, even though a 1982 amendment did give the RMC limited powers to deal with water quality issues.

The Murray-Darling Basin Agreement

By the mid-1980s, many would say much earlier, the RMWA and the RMC were unable to tackle the emerging environmental and resource management issues. The result was a heads of governments meeting that gave rise to the Murray-Darling Basin Agreement, signed by the governments of Australia, New South Wales, Victoria, and

South Australia in 1987. In its initial form, it was as an amendment to the RMWA, becoming fully legal and operational at the beginning of 1988 (not 1993 as stated by Pigram). The Agreement finally put into effect a recommendation of a 1902 Royal Commission on the Murray, that “the river and its tributaries must be looked on as one.” A revised and totally separate Murray-Darling Basin Agreement, replacing the RMWA, was signed in 1992. Queensland was also a signatory of this revised version. The ACT joined in 1998 and participates in a limited way by means of a Memorandum of Understanding. Except for Queensland's lack of initial participation, there have been no major difficulties because of jurisdictions having different political parties in government.

The Agreement established a three-part Basin-wide management structure, collectively termed the Murray-Darling Basin Initiative. The Murray-Darling Basin Ministerial Council (MDBMC) is the political and decision-making body. The Murray-Darling Basin Commission (MDBC), which replaced the River Murray Commission (the RMC was not replaced by the MDBMC as stated by Pigram, 2000), is the executive arm, managing the River Murray and advising and assisting the Ministerial Council in relation to the planning, development, management and sustainable use of the Basin's natural resources. The Community Advisory Committee (CAC) is a community-based group that provides advice directly to the Ministerial Council and serves as a means of two-way communication between the Council, the Commission and the Basin community.

What Has Been Achieved?

The Initiative has given rise to a wide range of measures, dealing with such issues as algal management and nutrient pollution, native fish species, floodplain wetlands, biodiversity, and irrigation and dryland agricultural systems. Space permits only brief mention of three critical issues and measures taken to address them through the Initiative

The Murray-Darling Basin is a naturally saline environment. Rising water tables and land salinisation in irrigation areas along the Murray and increasing salinity of its water were key factors in the establishment of the MDB Initiative and its first action, the Salinity and Drainage Strategy introduced in 1988. A recent review showed that it has achieved a net reduction in River Murray salinity without jeopardising the undertaking of new irrigation and water resource developments, making the Strategy one of the most significant achievements of the Initiative (MDBC, 1999).

However, the major problems are now beyond the irrigation areas. A 1999 salinity audit of the Basin showed that, without intervention, there would be large increases in salinity in some major tributaries of the Murray and Darling rivers (MDBMC 1999). In many tertiary streams, salinity levels will exceed the recommended safe level for

human consumption; this is already the case for some streams. Three to five million hectares of land will become salinized in the next 100 years as a result of rising groundwater, significantly reducing agricultural production and having substantial impacts on built infrastructure, with consequent major economic and social impacts. The implications for aquatic ecosystems, especially wetlands such as the Macquarie Marshes, are no less serious. In recognition of the Basin-wide nature of the problem and the fact that it cannot be addressed within the confines of a single jurisdiction, a new Basin Salinity Management Strategy 2001–2015 has been developed (MDBMC, 2000a). This will permit the management of salinity impacts of irrigation, dryland farming and natural sources in a coordinated and Basin-wide way.

In 1995, An Audit of Water Use in the Murray-Darling Basin clearly demonstrated that the continuing growth in the consumptive use of its surface water was unsustainable in economic, social and environmental terms (MDBMC 1995). As a result, the Ministerial Council placed a “cap” on the diversion of surface water for consumptive uses, essentially limiting diversions to 1993–1994 levels of development. The cap is a recognition of the fact that there needs to be a balance between the consumptive uses of water and the instream needs of the Basin's aquatic environments. A Review of the Operation of the Cap found that it has already delivered significant economic and social benefits to the Basin and that these will increase over time (MDBMC, 2000b). In the longer term, it protects the security of water supply to all users. Without the cap, there would have been a significantly increased risk that the environmental degradation of the Basin's river system would have been worse, though there is increasing evidence that the present level of the cap does not represent a sustainable level of diversions.

The statement by Chatterton and Chatterton (2001), “The entitlement of each state to the water in the basin is determined by the River Murray Commission” is incorrect. The RMC ceased to exist at the end of 1987. It might be argued that the cap process plays a role in determining state entitlements, this is a very different situation to the responsibilities of the MDBC in terms of entitlements to the waters of the main stream of the River Murray, as set out first in the RMWA and continued in the Murray-Darling Basin Agreement.

For over a decade, the Natural Resources Management Strategy (NRMS) (MDBMC, 1990) has provided the philosophical and management framework for achieving the key objectives of the MDB Agreement. While there has been a key role for the community in the Strategy, it is an overstatement to regard it as being community driven. With the support of the CAC, the MDBMC recently replaced the NRMS with a new approach, through a major commitment to integrated catchment management (MDBMC, 2001). Whether or not this will mean a greater level of community involvement remains to be seen.

Two Issues from Recent Articles

If the concept of “hydrosolidarity” is to have any meaning, certainly as discussed in *Water International* (Lundqvist and Falkenmark, 2000), then it surely has to be within the context of a particular river basin. Pigram is right to state that it does not yet exist within the MDB, but to do so with reference to the Snowy River does not make sense. One cannot talk about the dispute over the condition of the Snowy River as a challenge to hydrosolidarity within the MDB when the Snowy River is not part of the MDB. As 99 per cent of the original flow of the Snowy River is currently diverted into the Murray and Murrumbidgee Rivers (i.e., into the MDB) by way of the Snowy Mountains hydroelectric scheme, of course there is no hydrosolidarity between the two river systems. On this basis, one cannot conclude that “the fragile nature of the whole-of-basin approach, or the supposed community of interests along a river system, is exposed by apparently irreconcilable claims on the Basin resources” (Pigram, 2000).

There can be no hydrosolidarity where water is taken from one river basin and diverted to another. This is more than evident in the reports of a number of inquiries into the use of the Snowy River waters (NSW 1998). Pigram could have discussed better and valid examples of a lack of hydrosolidarity in the MDB on the northern tributaries of the Darling River, especially those that cross the Queensland-New South Wales border, that result very largely from the activities of a few rapacious irrigators acting in what have long-been totally inadequate regulatory regimes. On the other side of the picture, reference can be made to the expanding work of the Murray Darling Association. The Association has its basis in local government, but is a non-government organisation which, by working at the grass-roots level and bringing upstream and downstream people together, is doing much to address the lack of community in the MDB.

Chatterton and Chatterton (2001) discuss a number of issues relating to water trading in the MDB. Though it is not specifically named, their focus is the Pilot Interstate Water Trading Project, initiated by the MDBMC in 1998. Intra-state water trading has been undertaken for many years, but the Pilot Project made inter-state trading possible. The main details are set out by Chatterton and Chatterton, but even with the limitations of the Project, inter-state water trading is a complex undertaking. Limited progress has been made in the first two years, with the volume of water traded being less than one per cent of the total water applied in the Project area. It is not clear what Chatterton and Chatterton mean by their figures of “estimated quantities of traded water.”

In net terms, over 90 percent of the traded water has moved to South Australia, much of it being used in newly-established vineyards. However, such developments need to be put in perspective. Investment in grapes is wide-

spread in the MDB, but there are many more irrigated crops than the limited number mentioned, not least cotton. There are also other measures than gross margins in \$/ha (which are date specific and can vary significantly from one location to another) to determine “the principle irrigated crops.” Grapes, fruit, and vegetables account for well under 10 percent of the total irrigated area in the MDB (Crabb, 1987). Trading is increasing the value of water, with nearly all of the trades being put to high value uses. However, 99 percent of the water sold was not being used by the sellers.

A review of the Pilot Project has noted its achievements and problems (Young et al., 2000). The downstream movement of water use can be regarded as environmentally beneficial, though a total of 10 gegaliters is insignificant in terms of total flow in the Murray. However, the same cannot be said of the potential salinity impacts of the new irrigation developments. With most of the water transferred to South Australia being used on land not previously irrigated, River Murray salinity levels may consequently increase, unless adequate management measures are put in place. The review also highlighted the fact that “Current water dealing practices and procedures are much more lax than those that apply to land – even though many of the transactions are of similar value and implication” (Young et al., 20001). The Project is being continued, with significant revisions.

It is easy to give too much credence to economic instruments for the management of water resources. In terms of both intra- and inter-state water trading, measures are needed to prevent people getting around environmental conditions that are attached to permanent trades. A water market left solely to the market may result in more rather than less environmental damage.

Conclusion

In spite of its significant achievements, the MDB Initiative is not free of problems. Many still fail to see the “big picture,” there are on-going agency squabbles and personality issues; for many reasons, “community involvement” is still an issue (for one thing, there is no one community); there is an over-emphasis on water issues with too little attention to land, in spite of the commitment to ICM (Pigram, 2000 is incorrect in saying there is a Dryland Management Strategy); land clearing continues; and many irrigators still fail to see that their long-term future lies in healthy rivers and reduced demands on them, and that any “balance” has to favour the environment.

Nonetheless, in less than fifteen years, the Murray-Darling Basin Initiative has some significant achievements to its credit. There is nothing better anywhere in the world when it comes to inter-jurisdictional natural resource management. The constant stream of overseas visitors to the Commissions Canberra offices is just one testament to this fact.

About the Author

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Discussions open until March 1, 2002.

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Reply Comments by B. Chatterton and L. Chatterton to "Australia's Murray-Darling River Basin Initiative - Correcting the Record" by Peter Crabb

We are grateful to Peter Crabb (Crabb, 2001) for his corrections to our paper "The Australia Water Market Experiment" (Chatterton and Chatterton, 2001). He rightly points out that we should have referred to the Murray-Darling Basin Commission instead of the superseded River Murray Commission.

He is also correct to say that gross margins can vary from year to year, but we were attempting to provide an indicative comparison, not a definitive one, to make our point.

We agree with his statement that "Many still fail to see the big picture." The question remains: what are the issues that make up the big picture? If we fail to confront these, the "big picture" can end up being a "big mess." We consider the definition of "ownership" of the resource and the nature of the title provided to water right holders to be fundamental aspects from which the big picture arises.

Crabb indicates that "community involvement" is top of his list. "Participation," "community involvement," and "consultation" feature boldly these days in institutional

rhetoric. In reality they come down to the desire for community collaboration after all the major decisions, such as "ownership" of the resource, and market rules have been made. When this results, as it eventually must in some communities, they become victims of market forces and entering terminal decline, then a call for "community involvement" is made. This call is promoted to resolve the problems but at the same time help to dampen protests. Real community involvement should take place before "ownership" of the resource is defined, and throughout the process of developing market rules.

Australia does have a proud record of innovation in water policies and may indeed be praised for its inter-jurisdictional natural resource management, but the present water management policies place a low value on community benefit and ignore the needs of future generations of water users. Australia has chosen a form of freehold title that provides maximum benefits to current holders in the form of windfall profits but limited benefits to the community and nothing for future generations. This is a mix that will not necessarily suit other countries.