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House of Representatives Committee on Regional Development
Enquiry into the MDBA Draft Plan

Australia cannot afford to remove from productive use enough water to maintain all of the riverine ecosystems, evaporate millions of megalitres of fresh water from lakes that don't have to be either full or fresh as well as run that amount of water again out to sea. River regulation and irrigation extraction has allowed the development of large and small communities, right across the basin. The water act and the MDBA has not put enough emphasis on the benefits of that regulation and development.

The Commonwealth Water Act in its current form will end up challenged in the High Court if there is any compromise to outcomes outlined in RAMSAR and other agreements.

This submission is to be read in conjunction to the submission to MDBA on the guide to the draft Basin plan that is appendix one.

The comments in this submission are not definitive and not limited to issues raised in the guide, but include discussion on water trade, works and measures as well as secure reserves.

Buybacks

There is wide spread discussion on irrigation systems being debilitated by ad hoc sale of water entitlements on a random pattern based on price alone. This is a discussion on property rights of individuals and impacts on irrigation delivery efficiency to those who remain. Taking into account all of the rules imposed by ACCC it comes to this, the water entitlement purchased is worth what can be produced from its long term water yield. This is not effected by the geography of its origin and the market decides that value. To address the issue of retiring end of irrigation channel systems an additional source of money has to be used to achieve the structural changes that need to happen. Some of this money should be finance the adjustment of farming systems because irrigation will no longer be available, some will be to compensate the channel system owner to remove and write off redundant capital assets, but some should also be available to fund structural adjustment in the wider community to adjust to lower production, eg shire rates etc. A single transaction water entitlement purchase should not try to achieve all these things. To have a water market with any integrity you cannot have two prices for the one product.

There has been severe fluctuation in water entitlement market price due to the behavior of the Commonwealth as the largest buyer across a range of water entitlement types. The stepping in and out and traunch sizes has destabilized the market, causing some grief for equity levels and purchase of farms as part of naturally occurring farm turnover.

If buybacks are to be part of the basin plan then continuous presence in the market will give stability that will not undermine the integrity of the market.

Efficiencies

These are across many sectors of water delivery and use.

- On farm efficiency is not measured purely in terms of water use but rather of capital employed that includes water and irrigation systems. Adopting lower water use systems usually requires additional capital to implement. Investment by the Commonwealth will facilitate improvements on farm.
- Delivery to the farm has similarities to on farm efficiencies in that it is a mix of capital investments and having an appropriate type of system that will deliver the best outcome. The obvious improvement is in reducing delivery losses, while at the

same time improving service to farms. Care must be taken that there is net gain, as many of the channel escapes supported rivers and wetlands that in future may require maintenance from environmental flows.

- Environmental site water management. Most of the rivers and wetlands have been modified in some way, the concept that environmental flow should be delivered as over bank flow is ideological but does not recognize that it is not efficient water use. If as the MDBA guide indicates that it is the small and medium floods that are now less frequent because of river regulation and extractions then it follows that regulation works should be used for environmental benefit by delivering environmental flows in an efficient and measurable way.
- Releasing environmental allocations on the back of river freshes is one way of efficient delivery, but if the target for delivery is well downstream this becomes less possible. Techniques for delivery of environmental allocation using regulated flow will be required. Channel capacity restraints have many rules that will be challenged by this approach. Manipulation of weir pool levels offers many opportunities to improve river health, not all of which require additional water. The operation of Stevens Weir at Deniliquin is an example of this. Much is made of additional water requirements, but drying is a natural ecological process that many river banks and wetlands in the southern systems have not done on a regular basis.
- The Barmah and Millewa forests are examples of where small flood events have been managed to achieve ecological outcomes equivalent to floods much greater in volume. This is achieved with a network of river bank regulators into creeks and cuttings that put water into various parts of the forest and is then spread using low banks (often roads), this achieves both height and duration of flooding objectives. There are detailed reports of environmental allocation use in B/M for 1998 and 2000 that illustrate the outcomes of the largest use of such allocation so far and the processes involved in delivery and accountability. There are later examples where pumping has been employed such as Hattah Lakes and Chowilla in SA.

Integrated Delivery

The integration of river regulators and irrigation infrastructure to improve delivery of regulated flow for both extraction and environmental use has not been formally explored. Murray Irrigation Limited own and operate the Mulwala Canal that diverts water from Lake Mulwala and delivers it by gravity across about 300km of irrigation districts that have interface with the Murray, Edward and Wakool river systems and the Billabong creek. The canal and its associated channels have many escapes into these streams. An example of efficient delivery is the Perricoota escape into the Torrumbarry weir pool of the Murray, river flow from Lake Mulwala to Torrumbarry is 10 days and up to 20% loss where as the canal can deliver in one day with less than 10% loss.

- MDBA has on its books a proposal promoting a combination of enhancing some in forest creeks to improve hydraulic capacity and the ability to deliver environmental flow to more parts of the forest, and using the Mulwala Canal to take summer flow pressure off the forest and at the same time allow greater flow and possible delivery of environmental allocation downstream. The authors of the proposal have received no response from MDBA despite a review of the Barmah Choke being conducted. More details on the proposal can be obtained from the author of this submission.
- Murray Irrigation's infrastructure also runs parallel to a large part of the Wakool river, The Wakool has made headlines frequently over the drought and recent

floods with major fish kills from poor quality water. The ability to inject fresh water flows into creeks and rivers using irrigation channels has great opportunity to maintain river health without requiring large volumes of water. It would however need much greater cooperation between environmental water holders, state and federal authorities and local irrigation managers than has occurred in the past.

- The large weirs on the rivers are often criticized for environmental damage. In addition to the social and economic benefits they also provide opportunities for improved ecological outcomes using only small additional amounts of water. Manipulation of heights can provide some of the wetting and drying events crucial for river and wetland health. Construction of by pass channels into surrounding forests and other works can efficiently deliver by gravity many of the flows equivalent to small flood events that would normally require overbank flow. Examples of this approach have been seen recently on the low Murrumbidgee off the Redbank weir.
- The question must be asked, can we operate a regulated river at a lower operating height? This has obvious disadvantages to tourism, town and residential amenity and irrigation diversion. It may offer advantage for reduced losses to evaporation, unnecessary inundation of wetlands and opportunity to mimic natural rise and fall in the river from rainfall events. River banks would be much more stable and may be able to withstand the wash effects of speed boats that undermine banks and are the cause of much of the sediment in the river.

Drought Security

For urban communities in the southern basin the most secure storage of drought reserves could be in Snowy Hydro storages. This should not be confused with the minimum release requirements of SHL. This facility is not currently available but should be investigated. The 75 year license for SHL is far in excess of any available to other license holders and does not offer the adaptive management options required for good water policy. Commercial arrangements may have to be put in place but currently there is no template for that.

Drought reserves for Broken Hill that are currently held in Menindee Lakes could be provided in alternate ways thus allowing more efficient operation of the lakes. The suggestion of aquifer storage is at best risky and certainly expensive. In conjunction with reconfiguration of the lakes, construction of a deep ring tank is a cost effective approach as is duplication of the Great Darling Anabranch pipeline from the Murray with reserves stored in SHL dams.

Conclusion

The guide to the draft MDBA plan is the opposite to efficiently operating the river. The headline target of flow out to sea is achieved by insisting on inefficient overbank inundation of wetland areas, the river flows to achieve this will by default maintain fresh water at artificially high levels in the SA lower lakes and large volumes of fresh water flowing out to sea.

Thank you for your attention,
Gordon and Phyllis Ball,

Appendix 1
Submission to MDBA Guide to the Draft Basin Plan

The guide does not resemble a plan to manage the riverine environment.

The legislation

- The Water ACT shapes the plan with little discretion for adaptive management.
- An abuse of the Australian Constitution. It is a structure to remove the constitutional powers of the states to manage water using foreign affairs clauses. It does not recognise the superior knowledge of the states to the Commonwealth on water issues, or try to coordinate them for an agreed set of outcomes. It is not a structure for efficient management of water resources at an operational level. The use of the Bureau of Meteorology and the ACCC is a clumsy and inefficient way to monitor and regulate irrigation in the basin. The lack of respect shown to the State Authorities from the Commonwealth's Water Act will not generate the goodwill required to get the best outcomes.
- It does not remove or improve the administrative boundaries around water management, the draft plan does not coordinate environment water entitlement holders with the river operator or the community to avoid issues such as the recent fish kills in the Wakool River.
- The states still have the land management responsibilities that appear to now have more tedious relationships with the rivers and environmental flows.
- There is now less consultation with community people on river operations and planning. Centralisation of power has not taken the politics out of water, but it has made it harder for local people to be heard.

The water

- Talks a lot about how much must be acquired to achieve vague outcomes. There seems to be this underlying assumption that no natural flooding will occur again, with the small to medium floods being those even less likely to happen. Small events stay within the river channel the further downstream it travels, but there is no discussion on replicating the rise and fall with weir pool manipulation.
- There is little discussion on how or when the increased flows would be delivered to the target areas. This leaves open the topic of overbank flows within a regulated river and the difficulties that entails. There is no discussion on what the river operations will look like, for communities along the river this is of extreme importance. The draft plan guide gives no indication there has been any consultation with River Murray Water staff even though they are part of the MDBA.
- There is no indication of how the Commonwealth and other environmental water entitlement holders will behave. As an example there is nothing to indicate that the

CWH, MDBA, NSWOW and State Water NSW would do anything to prevent the recent predictable Wakool River fish kill from black water even though fresh water could have been delivered in a timely way using irrigation infrastructure.

- A target of 66% of natural to increase flow is the draft plan target, not specific river health outcomes. More water is not the only way of improving river health. The Edward River near Deniliquin has the Stevens Weir pool dropped every late autumn and winter to allow many of the wet and dry sequences that would have occurred naturally to happen. This comes at a real cost to the recreation and tourism economy of the town but has been part of an improvement in habitat and river bank stability that has seen native fish stocks improve rapidly over the last 10 years. It has allowed limited fish passage past Stevens weir in the absence of MDBA/MDBC investment in a fish ladder. Where is the plan to do similar things at other weirs along the river? Torrumbarry seems a good place to trial as there are no salinity issues to deal with.
- To not scope the efficiency benefits from infrastructure investment leaves a big gap in the credibility of the guide.

Modeling & Science

- Much of the scientific information comes from and is reviewed by people or organizations that are also environmental advocates or commentators, thus reducing confidence that such reference material is unbiased.
- The terms of reference for consultancies and studies should be part of the reference material listing. The assumptions and data input to modeling is necessary to judge the context of the output. This is particularly so for subjective values that are often part of ecological data, e.g. forest health and what constitutes an improvement.
- . There is an unhealthy reliance on modeled ecological water requirements that have not been field tested. The work done by Maunsell on the use of low banks and small scale works along the Gulf creek in Barmah forest is an example of verified modeling that is in the archives of MDBA but not accessed. The comprehensive reports on the use of environmental allocation in Barmah/ Millewa Forests in years 1998 & 2000/2001 were not referred to, but are also in the MDBA archive, and are detailed information on operating rules, ecological targets, consultation, water use and results for the only large scale use of environmental allocation used in conjunction with natural flooding. To ignore work such as this is poor science.

River Health Initiatives

- The Living Murray Initiative had several strategies for a diversity of riverine health. The native fish strategy was headlined by the Sea to Source fish passage program, this was quite limiting as it focused on very expensive fish ladders, resnagging and some research into fish ecology. It ignored the interest and knowledge that exists in local communities. The draft plan gives little recognition to improving fish outcomes that don't involve large purchases and use of water.
- The Barmah and Millewa forests. The complex and important role of this part of the river is also ignored. The "choke" is the reason for the forests and is the opportunity for enhancement of redgum and other ecological outcomes on both the Murray and the Edward / Wakool rivers. Murray River channel capacity at the western end of the forest is only 8600ml/day. Disregarding irrigation demand, this capacity cannot satisfy even downstream losses in summer. If the MDBA plan requires greater flows to service downstream demand, both ecologic and human use then some form of enhancement to other streams within the forests will be necessary, in addition an enhanced bypass via the Mulwala Canal will also be required. Both of these actions

have major benefits to forest ecology, fish habitat and water quality. This is another example of ecological improvement without buyout of productive irrigation water and not promoted by the draft plan guide.

- The Salinity and Drainage strategy that was launched in conjunction with the formation of MDBC in 1988 that had mechanisms for river salinity management seem to be forgotten in this guide to the draft plan. Many millions of dollars of public and private investment is based on that and cannot be ignored or discarded. The guide makes no attempt to leverage off that investment other than to flush salt out to sea in an unplanned way with some very large purchases of water currently used for growing food.

Reporting

- Despite having numerous indicator points, what stands out is a single point performance indicator of measurement of flow out to sea. As this is a superficial plan, a superficial "big headline" result will be used as a political beat up. Despite the desire that this facilitates export of salt there is no strategy for exporting salt or reporting that. To have fresh river water benefiting the Coorong without reinstating the fresh drainage supplies from SE SA into the upper reaches of the Coorong is to deliberately try to do only the easy bit of the job.
- There is no template for consulting with the community for developing reach by reach activities, or reporting the achievements of the investment of billions of dollars worth of community capital, other than that we have acquired or used certain volumes of water and dollars. The CAC membership is selected by the MDBA and has no obligations to develop networks of consultation that will deliver the community expectations of the regions.
- Accountability issues highlighted by taking irrigation entitlements where use measurement was accurate "point of delivery " measurement and accounted for, and then use this same water in overbank flow or guess gauging into wetlands using modeled estimates will not satisfy regional communities that have lost productivity. Irrigation entitlement security demands that rules for delivery and accounting be consistent for all diversions, the guide does not give that assurance. There is a large element of doubt surrounding the integrity of creating high reliability entitlements from losses, averages hide the impact of the extremes and there will almost certainly be impacts in dry years.

Summary

If this is the plan that justifies the dislocation of regional communities by the purchase of productive water entitlements that has the effect of destroying local economies then it has failed. The absence of credible social impact information puts in doubt the whole document. The narrow focus on providing additional water to flow out to sea without any mitigation of massive evaporation from the lower lakes is a massive shift of community capital from the upstream communities, both human and ecological to that part of South Australia.

If this was a prospectus to invite investment into a company then ASIC would put the directors in gaol.

Gordon and Phyllis Ball