



.Crichton Maxwell Pty Ltd

**Submission to the House of
Representatives Standing Committee on
Regional Australia**

***Inquiry into the impact of the Murray-
Darling Basin Plan in Regional Australia***

I welcome the opportunity for our company to make this submission to the Standing Committee on the Impact of the MDBA Plan on the MDB Communities.

The MDBA Guide has generated significant and substantial public and institutional response of incredulity to what it proposed and the minimal impact forecast upon the economy of the Basin and it's social impact upon the Basin's communities and population. Unfortunately, the response has tended to focus on the reduction in water for irrigation and while that is a critically damaging proposition it has distracted attention from the inadequate basic research, modelling and apparent understanding of the functioning of natural systems and real economics and how Acts of Parliament are read and interpreted.

Both the MDBA Guide and its attendant Volume Two contain a large body of information regarding the background work, the research undertaken. Reading through this material it becomes very clear that this work was undertaken with considerable bias and that it was assembled into the Guide ignoring material that had been assembled that was unfavourable to the environmental water bias of the Guide's authors. Throughout all this material very few assumptions are documented and details provided of the underlying reasons for these assumptions making it impossible for an informed and open discussion of the plan. This gives the impression that the MDBA wished all parties reading and impacted by the Guide to accept that the MDBA knows best. This is the Plan, the result of our research and accept our findings without debate.

This initial stance by the MDBA required all parties reading the Guide to indulge in the wilful suspension of disbelief that there would be minimal impact upon primary producers and the Basin economy in general through dramatically lower SDL's. Suspension of disbelief is what is done when cartoons are viewed and we happily accept the impossible and the prospective Plan is composed of the unbelievable, ignoring the impact upon the Basin economy and its constituent communities are obvious to see. Irrespective of what MDBA initiated research showed, cuts in irrigation diversions in general are more in the vicinity of 50%-70%, will have a major impact and the proposed benefits foreseen and included into their modelling fail to even begin to compensate the Basin or the National economies. The Guide has serious short and long term consequences for irrigators and communities within the Basin and for the overall economy.

We have significant concerns over the MDBA's ability and capacity to develop a Plan based on the Water Act 2007. The MDBA's inability to follow the Water Act's requirement in Part2 Paragraph 86A that Critical Water needs come before all other water is unbelievable and that it required the Australian Government Solicitor to be consulted as to whether that directive was to apply. Twice

within the Water Act the MDBA is directed to optimise the environmental, economic and social impacts of the plan and in the second mention within the Water Act, the ordering of them is changed to economic, social and environmental impact of the proposed plan. This directive was not followed and the MDBA has argued strenuously that to do so was incompatible with the need to consider the environment first and exclusively. A view consistent with their stance on the Critical Water needs and a stance at variance to the requirements of the Water Act.

At various meetings where the impact of the proposed Plan was discussed a frequent question was how did the MDBA arrive at the volume of water designated as Environmental Water. Given the plethora of facts and figures and numerous Peer Reviews and Expert Reviews of the MDBA's processes the only accurate assessment of how it was derived is that it was or is based on myths and fantasies as to the volumes of water needed to provide overbank flows of environmental water. It is at this point within the Guide that the realisation comes that the Guide and its resultant Plan are in fact built on less than the objective Data that the MDBA takes considerable effort to explain was what they based all the water calculations upon, namely the 115 years of rainfall records. Ignoring other objective data sets such as Charles Sturt's diary detailing his observations of the Lower Murray in 1829, the log books of the Paddle Steamer skippers of the Murray and the Darling detailing the low flows and strandings, the flushes and floods experienced in both rivers detailing dates and durations similarly the early settler diaries who recorded the floods and bushfires up to the period of rainfall record keeping and through to the current day. None of this information was mapped or modelled, most probably because it would have shown that the proposed environmental watering plan's were disconnected from reality. This in no way denigrates the considerable effort that went into modelling river flows, but when that work is followed up it appears to be based on less than comprehensive review and revision.

For instance it is assumed that the river inflows today under the no storages scenario are the same as that experienced under the original native vegetation cover of Grassy Woodlands and Forest. But the MDBA gives a hint that in fact river inflows would have been less in the early days of settlement by its response and attitude to rainfall interception by reforested areas being greater than if it was left under the developed pastures of today. No work was included in the Guide preparation that has detailed whether pre settlement inflows were 5% or 10 or possibly 20% lower than they are today under developed pasture and cropping lands. Similarly if the inflows today are greater due to vegetation cover changes then we would expect the flow peaks in the waterways to be greater than they were historically.

The research work to determine whether these postulations are correct or incorrect has not been undertaken, but the data is there waiting to be collected. We have started work on building a device that allows us to extract tree cores to generate a dendrochronological database that can be mapped against rainfall records for the last 115 years and then having statistically linked these two datasets we can then develop rainfall profiles extending back a further 400 years. This same dendrochronological dataset will also allow us to look at the frequency of flooding across the flood plains in addition to the rainfall profiles. Our expectations are that rainfall variability between years and over decades and centuries is basically unchanged and that the frequency of overbank flows as defined in the MDBA Guide has occurred less often than the current MDBA Guide Watering Plan infers will happen.

A major criticism we have of the Guide as it currently stands is that it is full of inconsistencies

within and between sections. What is discussed in one section is contradicted in a later section, leaving one concerned as to whether our memories are functioning properly. Information is partially presented implying that the situation arose due to water extractions from the rivers leaving out the reasons for why something has happened. A good example is the comment that native fish stocks today are only 10% of pre European levels. The main reason for why this is so is not included in the Guide was the introduction and degradation of the water ways by Carp. Volume Two explains this but in the Guide the inference is made that irrigation and water diversions are solely responsible for this state of affairs. This is a serious distortion of facts and is duplicitous in its attempt to evoke an emotive response that all irrigation must stop. Photo's are used to present various parts of the Basin and one showing the Gwydir Wetlands has numerous dead trees standing in water. If this is the Gwydir wetlands and is representative of them we then only have to look at Lake Mokoan and other areas within the Goulburn Valley where similar stands of dead trees exist. They only die in these numbers and form when subjected to prolonged flooding and or submersion which raises a question over the true extent of the Gwydir wetlands.

Very little is presented on what the extent of the environmental plans will be and the frequency of environmental watering events. The Guide does imply that they will be substantial given the diversion of water to the environment and infers that it will be more frequent because they will not be able to store environmental water cumulatively for many years before running out of storage capacity. One disquieting feature of the Guide and discussed in detail in Volume Two is the Barmah Millewa Choke restricting water flows down the Murray, the discussion is very critical of the limit of 8500ML per day through the choke restricting the ability to implement the Environmental Watering Plan for that part of the Murray below the Choke. Excess water naturally flows via the Edwards River and the Wakool Yallakool River systems due to the Edwards River being an anabranch of the Murray River. The whole tenor of this discussion is that of annoyance at this limit on the capability to enact the envisaged watering plan. It is indicative that the envisaged watering plan is in error and exceeds the maximum volumes of water passing naturally through the choke. When this was realised from reviewing the Guide and Volume Two it reinforced the view that the volumes of water planned as environmental flows and the prospect of increased environmental watering frequency envisaged most likely exceeds the historical frequency of overbank flows and large scale flushes.

It has to be remembered that most of the wetlands or areas of naturally high environmental values are in fact stranded assets from the river systems. Over time the natural tendency is for rivers to cut down into the surface of the earth and they also meander as they flow towards the sea. Eventually these meanders become a handicap to the river and they erode through at a bend isolating the meander. Over time the river then fills in these meanders which we see as billabongs with silt and organic matter eventually converting them into part of the floodplain as the river continues to cut its way down into the earth's surface. If the river system finds itself in an area of slower flow the river tends to build up natural levee banks from the silt load it carries settling out of the river waters. There are numerous examples of these two types of riverine features through out the Basin, indicating how over time the rivers have migrated their way over the landscape responding to river flows and land form movements generated by earthquakes. Similarly what we see as wetland areas near river level or for example the lower lakes on the Murray are in fact doomed to eventual extinction due to their silting up and the formation of natural levee banks as the river system works to maximise its trajectory to the sea. The MDBA is happy to quote examples of rivers that are much larger than the Murray Darling system which provide us with examples of this last features I have

discussed. The Mississippi delta and the natural levee banks that its silt load generates each time it has an over bank flow for example, but in general this comparison of rivers in other countries to the Murray is diversionary and irrelevant. From reading the Guide the MDBA envisages that these wetlands will continue into perpetuity when naturally over millennia they change their form and eventually die. It is this myopic perspective that pervades the Guide and obviously to be included eventually in the Plan that causes the maximum negative impact upon the Basin and its economy and population.

The **Terms of Reference** require that the committee specifically focus on the socio-economic impact of the proposed Murray Darling Basin Authority's 'Guide to the Proposed Basin Plan' (the Proposed Basin Plan) on regional communities, with particular reference to:

the direct and indirect impact of the Proposed Basin Plan on regional communities, including agricultural industries, local business activity and community wellbeing;

Reading through the Guide there is a significant lack of continuity between sections of the Guide with respect to the consideration of economic impact and social impacts forecast to be generated by the implementation of the new SDL's. Different sections hold different views on the potential for impact and as one works through the Guide and Volume Two there is greater recognition of the prospective negative impacts upon the Basin economy and the social impacts of the proposed SDL's. Reading the attendant Volume Two it alludes to the potential size of the negative impacts from the research work that was done but when the assumptions are read through regarding the prospect for negative impacts they all tend to follow the naive economics views of gradualism. Change when it occurs will occur at a slow rate over a number of years. This belief has been well disproved over the last two decades but it is a view persistently held by policy development economists lacking in real world experience. It is a view that has unfortunately prevailed within the MDBA and in the preparation of the Guide.

The projected \$700 million reduction in Basin GDP forecast by the MDBA to result from reducing irrigation diversions by 3000GL is the reduction in value at the farmgate and it fails to acknowledge the impact to the Basin economy beyond the farmgate. This reduced farmgate value is not the result of a reduction arising from the normal pricing movements of the various irrigated economic goods produced within the Basin, it arises due to the loss of physical output and is a permanent reduction in output rather than the temporary declines in farmgate value caused by the drought.

When the drought finishes that lost output will return whereas under the reduced SDL's envisaged in the Plan this output will be gone for ever. If we assume that 75% of this decline in farmgate value represents money that would have flowed into the Basin economy net of interest and principal repayments this decline represents some \$525 millions no longer flowing into the service sector of the Basins economy. Once Treasury's multiplier is applied to this lost farmgate value the true cost to the Basin GDP becomes \$4.2 billion, which is not an insignificant amount and once that flows outside of the Basin a further \$1.05 billion is lost to the national economy. Making a prospective negative impact of \$5.25 billion on GDP.

Research has shown that we consistently over value the benefits accruing to projects by a factor of two and we under estimate the costs of projects by a factor of three. These figures have been shown

to be remarkably consistent across projects irrespective of the economic sector. The loss in farmgate value is a cost and on this basis the total loss to the economy will realistically be \$15.75 billion of which \$12.6 billion will be incurred against the Basin's overall economy. This will if it proceeds, result in some 20% of the Basins workforce loosing their jobs in the agricultural, manufacturing, service and government sectors. With such a loss of permanent jobs and the likelihood of replacement economic activities generating significantly less employment opportunities it is envisaged that there will be a net population migration out of the basin as they seek employment potentially generating a shift of some 30% of the basins overall population out of the basin as they accompany the main income earner. Potentially the reduced SDL's proposed in the Plan will result in one of the largest social engineering experiments in the world, only exceeded in current times by natural disasters or civil wars in the developing countries.

A knee jerk response to these prospective impacts will ignore the economic reality of a decline in business activity. The recent prolonged drought has provided many examples of communities shedding jobs as the output and farmgate value declined. This has translated into lower demand for services or agricultural inputs which resulted in staff retrenchment, businesses closing due to falling incomes. This then resulted in less wage income being spent in the local business sector which then resulted in staff losses, businesses closing, schools loosing pupils and then teachers, workers and families moving away. We have been fortunate not to have this become an irreversible downward spiral due mainly to the relatively short term nature of the reduction in irrigation water because of the drought. Reductions in economic activity happened quickly and while orderly it has been traumatic for those businesses and the communities that have been effected. An example of this is that of a refrigeration business that has lost half of its dairy farmer customer base not due to competition as they are the only one in a 50km radius but because their customers ceased dairying. Similarly dairy plant servicing has seen businesses close because of the collapse in farm numbers requiring servicing, at the end of 2002 one of the local High School's lost 120 students due to families relocating out of the area as work dried up with the result that the school then had to shed a minimum of four teaching positions to ensure the schools financial viability. Rice production fell off a cliff such that the permanent closure of rice mills and the moth balling of others and the low level of operations in the two kept open didn't warrant a comment in the economic research material presented. For the rice experience represents what would occur under permanent irrigation diversion reductions of 3000GL, these experiences were ignored because they if acknowledged them it would represent an impediment to maximising environmental water acquisition. The impact of the 2002 drought was immediate and traumatic as it cascaded through the local economy and as the drought continued it maintained this downward drag on the Basin economy.

Now the MDBA is proposing in its Guide that even more water will be lost permanently placing a new lower irrigated economic base on communities that the MDBA have said coped successfully with the impact of the drought. Successfully depends on where you stand in relationship to the decline, at the farm level it has been traumatic, at the local servicing level it has been traumatic at the regional level it had an impact on business but at the national level other than the noted decline in GDP because of the drought almost nil. If viewed via the cold data in the ABS records none of the social impact is seen and the economic impact has been massaged to normalise the data and so lessens the economic impact. If these basin communities were examined using a before 2002 and a now 2010 a more accurate and completely different picture would be obtained. Survival is the relative term, jobs would be found to have been lost, farms in the surrounding irrigation areas sold off all or a significant portion of their water, farmland in decline because of its return to dryland

agriculture, business closings, vacant shops. All these events have occurred because of the drought reducing water availability but the communities effected still had the capacity to respond to better rainfalls and water allocations but as the volume of water is sold grows it becomes more difficult to recover.

Smaller communities have been the most seriously affected as services and economic activity retreated to larger service centres. This retreat to larger service centres has resulted in the decline of these smaller communities to the point where their capacity to support or have a local community ethos has been eradicated. This loss of community was noted by State Government's who responded with initiatives to try and keep the spirit and ethos of these smaller communities functioning until the drought broke and farming activity could recover and lift the communities back to being self supporting. Without the support of irrigated agriculture of sufficient scale these communities will not recover and the prospects of this happening in some communities is low. Why, is because under the new water trading rules financially straitened farmers have sold off water to reduce debt and this water has in the main left the local areas never to return again. This is water that the Federal Government Water Buyback has been labelling as purchases from willing sellers. Yes they sold it willingly because they either did so at the behest of their financiers or they sold to alleviate debt incurred by the drought that was unsustainable in a prolonged drought and because of the distorted prices they could achieve from purchasers funded by taxation benefits, namely the Managed Investment Schemes against which individual farmers could not compete financially.

options for water-saving measures or water return on a region-by-region basis with consideration given to an analysis of actual usage versus licence entitlement over the preceding fifteen years; and

Irrigators tend to be early adopters of new management techniques and new technology that benefits them. Primary producers have always known that the resources such as land and water are in limited supply and are always strictly controlled, therefore requiring them to always consider methods by which they can maximise output and value of products produced. While it is of interest to gather data on actual usage versus entitlements all it does is provide a distraction from the real issue of the Guide which is how the MDBA with all its expert consultants and research actually derived the environmental water volumes they have identified as being necessary to restoring the health of the MDB environment..

From reading the Guide and its attendant Volume Two, the actual detailed mechanics of the actual required environmental water requirements are still unclear. The MDBA will argue that how they derived them is set out in detail and in that regard they are correct but what is not detailed are the assumptions they use on which to base this work. Nowhere in the Guide or Volume Two does the MDBA detail what flows they require to achieve overbank flows and the required frequency of such flows. All this is left to the be developed environmental watering plan which they then pass off to the States to develop.

The short answer is they do not have any research to support the assumptions they used and the presumed volumes of environmental water are in fact based more on myths, fantasies and guess work.

Any difference between actual usage and entitlements will in part be the result of economics. The cost of using the water exceeds prospective returns and also that the holding costs of having entitlement are low. These are separate issues to the crucial one that the House standing Committee should be examining and that is whether excess water has been allocated to irrigation.

Until the issue of how the environmental water needs are more explicitly defined and described and the assumptions used made public there is little point in discussing “*options for water-saving measures or water return on a region-by-region basis*” because this assumes that the defendant(irrigators) is guilty as charged. Before such discussions can take place more fundamental issues need to be covered and examined by the House Standing Committee.

the role of governments, the agricultural industry and the research sector in developing and delivering infrastructure and technologies aimed at supporting water-efficiency within the Murray-Darling Basin.

Water is a State resource and as such requires management that considers all demands upon that resource. Long gone are the days when with a low population States could hold and take the view that their freshwater resources were unlimited. The construction of publicly funded storage dams indicated the realisation that to provide continuity of supply, water need to be stored to overcome seasonal rainfall variability within and between years. Storage capacity to hold a number of years supply was built to ensure that irrigators and communities had sufficient water for their needs and that sufficient was left within the system for the environment. How this water was delivered to irrigators and communities varied across States with some opting to retain full control via State Enterprises while others opted for the use of Private sector entities to own, run and operate the irrigation infrastructure. In most instances States withdrew from any role in pushing for technology upgrades to deliver improved infrastructure and technologies aimed at improving delivery efficiencies until it became imperative that action had to be undertaken to upgrade aging infrastructure improving both delivery efficiencies and technology upgrades.

The prospect of water savings were held out as being substantial and that these savings could be split between the irrigators, the environment and the State. The extent of the actual research undertaken to quantify and locate where these savings were going to derive from was limited in extent and the rigorousness of it was also restricted to facilitate a short project commencement delivery. Savings were assumed to accrue from on farm savings through improved layout and on farm efficiencies, from upgrading supply channels to reduce losses via seepage and through distribution network rationalization (system size reductions). Substantial savings were assumed to accrue by replacing outdated metering technology but the skewing of the selection of measuring outlets that under measured without a balancing proportion of metering outlets that over reported supply generated an outcome that over stated prospective savings. This can now be seen in the Victorian case where the NVIRP organisation is taking up all bar one of the 400 unsuccessful bidders for on farm subsidising of irrigation infrastructure upgrades to improve overall system efficiency, where they collect half of the theoretical savings identified for return to the environment. Prior to this activity by NVIRP in the first round of enhancements they expressed disinterest in funding on farm efficiency projects.

The MDBA Guide is another example of a good idea subverted to a limited environmental agenda without regard for the real world or the real consequences of what was proposed. It has been the lack of rigour in the research and analytical work that has restricted the actual delivery of savings as the projects have moved into implementation. Benefits have been overstated while costs of undertaking works under estimated and from reading the Guide to the Plan this will most likely be the outcome if the MDBA Guide was implemented in its current form. Research has shown that irrespective of the area of the project benefits are consistently overstated by a factor of two and costs are understated by a factor of three and the anecdotal evidence to date on the current projects indicates that they are tracking close to these research findings.

States have a key role to play in managing their own water and determining the split between industrial uses and the environment. Also States must have a role in owning the major infrastructure such as the storage dams and other structures such as weirs even if they pass operational and physical management responsibility to entities with a corporate structure and a commercial focus. Similarly the States need to ensure that delivery infrastructure is managed by prospectively the same entities that manage the storage facilities to reduce system complexity and also infuse the commercial ethos into their operation.

The role of the research sector into the irrigation industry with respect to developing and delivering infrastructure and technologies aimed at supporting water-efficiency gains must from the nature of research be only one input via the irrigation infrastructure management entities.

Irrigation delivery infrastructure was allowed to fall into such a poor condition and that States failed to recognise the need for a more commercial management approach to this infrastructure and subjected the organisations tasked with their management if under State control to the same debilitating conditions that were placed on other State natural monopolies. Or if they were run by private entities they failed to include in their charters the need to operate as a commercial entity constantly seeking efficiency improvements. This requirement doesn't need to be a mandated rate of investment because that approach has an equally debilitating and destructive influence on the management and operation of an entity, it has to be a requirement that requires constant evolution of the infrastructure and system performance. All too often this is seen as being achievable by the imposition of the need to pay a dividend or the removal of a set percentage of their budget as a performance bonus theoretically forcing that entity to improve their efficiency, these approaches subvert the innovation process and stultify initiative. Paying of bonuses to senior management also fails to achieve the desired outcomes. Potentially the largest contributor to achieving a continuing drive to improve efficiency and performance is by ensuring that these organisations are forced to be open and transparent about their activities and that other than contract negotiations every thing is available for public scrutiny.

The Commonwealth has always had a coordinating role with the States but with respect to the Basin it appears that prior to the Water Act 2007 the Commonwealth was not active in maintaining its role to ensure that all States moved towards the common goal of the NWI of ensuring that the Basin's water resources were managed to maximise efficiencies and enforce their agreed caps on diversions to irrigation whether this was via extractions via the storage dams or via interception activities on farms. This is demonstrated by the continual release of new agreements and initiatives of which the Water Act 2007 is the latest and the use of the external powers an example of the failure to properly coordinate and interact constructively to achieve nation building performance. Unfortunately we

are now seeing how badly or poorly this latest attempt of achieving success, the current consequences are hugely detrimental to the Basin economy and to the National economy.

The current proposed approach via the MDBA will fail to achieve the goals of improved efficiencies and increased water for the environment via what currently appears to be an uncoordinated and a random process of water buybacks and infrastructure upgrades. There now exist numerous examples of upgraded infrastructure in the most efficient areas becoming stranded through water buybacks representing a complete waste of public funds that provided the upgrade.

Water buybacks under the supposed willing seller description are a misnomer in that most of the sellers are doing so to satisfy their financiers and do not represent any efficiency gain in either delivery or upgrade expenditure. If buybacks were on a willing seller basis then the price per megalitre would be significantly higher than it currently is and there would have been little of a significantly smaller volume of water offered for sale and the market may have excluded Federal purchases due to its uncompetitive pricing.

The current buyback process should be focussed on purchasing water from areas that have been identified as being the least efficient for water delivery and ensuring that any infrastructure reduction occurs in a more organised and efficient manner. Under this regime research would have a more direct and applicable role than it currently has. The recent water buybacks along with the current buyback round are ad hoc and opportunistic and in the long term will not achieve all the stated goals and purposes for which it was undertaken. The buyback process is inefficient, economically destructive and dishonestly linked to environmental benefits that are and have been poorly managed. The entire process has failed to serve Australia's and the MDB's best interests.