



Murray Irrigation Limited
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TRIM Reference: TRF/77

To:
Standing Committee for Regional Australia

**Submission to the Inquiry on the Social and Economic Impacts of the
Murray-Darling Basin Plan**

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Executive Summary

Murray Irrigation wants to see a healthy environment with - not at the expense of - strong regional communities and food production. To that end we are committed to the stewardship of this important part of the Murray-Darling Basin.

We participate in State and Commonwealth Government environmental initiatives such as The Living Murray and the Water for Rivers program. We also work closely with the NSW Department of Environment, Climate Change and Water (DECCW) to facilitate the delivery of the NSW Murray Environmental Water Allocation of up to 32GL per year (depending on NSW allocations) through the Wetland Watering Project to wetlands in both the landscape and the riparian zone.

We continue to implement proactive irrigation efficiency programs across the area of operations as well as assisting the MDBA subsidiary, River Murray Water by using our infrastructure to divert water around the Barmah/Millewa choke, to help reduce the incidence of unseasonal flooding and to provide regulated water to both the River Murray and Billabong Creek for NSW State Water Corporation.

Murray Irrigation, like our farm business shareholders, has had to be adaptable and flexible in order to survive the last 10 years of drought. The biggest impediment to innovation and adaptation has been the constantly changing legislation and regulation that covers water policy at both a State and Federal Level.

Murray Irrigation is concerned that the *Water Act 2007* (Cth) (the Act) limits the ability of the MDBA to address social and economic impacts. We believe the current conflicting legal opinions surrounding the Act should be cause enough to amend it appropriately. As it stands, the MDBA interpretation of the Act has seen them focus entirely on flows when water resource management needs to incorporate much more than a reliance on volume.

We strongly believe that all aspects of natural resource management must be considered in order to develop a Basin Plan that will improve the overall health of the Basin. These important issues should not be relegated to issues beyond the scope of the Basin Plan.

Murray Irrigation believes that the best outcomes are achieved by innovation, not prescription. Innovation and creativity is fostered by allowing industry the freedom to explore opportunities without extreme regulatory burdens or constant policy changes that create uncertainty.

Similarly, industry diversification cannot occur without some level of certainty over water security and availability, something which the Basin Plan does not provide.

It is the view of Murray Irrigation that the approach taken by the Murray Darling Basin Authority (MDBA), to concentrate on end of system flows and to ignore current and/or possible infrastructure or engineering measures to save and efficiently deliver water has led to the proposed cuts to SDLs and the associated risks to third parties being unnecessarily high.

Murray Irrigation rejects the “just add water” approach taken by the MDBA, who admit that their approach may increase the risk of flooding to surrounding farmland¹. We contest that there are a number of factors other than flows that threaten river and floodplain ecosystem health. We are also concerned that the Guide to the proposed Basin Plan has been prepared at a time of record low

¹ *Murray-Darling Authority Flagged Rising Flood Risk*, The Australian, 18 December 2010 < <http://www.theaustralian.com.au/news/nation/murray-darling-authority-flagged-rising-flood-risk/story-e6frg6nf-1225972992130> > accessed 20 December 2010, 10.45am

inflows and record investment in the environment through programs such as The Living Murray and Water for Rivers. It is our view that these environmental programs should be fully implemented and evaluated before removing more water from industry at the expense of local communities.

To achieve a healthy environment with strong regional communities will entail a range of environmental works and measures projects to deliver more efficient environmental outcomes, as well as a more holistic approach to the environmental issues facing the Basin. This will mean there will be some trade-offs.

By the same token, we feel it is inappropriate and misleading to target 100 per cent of a given species, such as the Barmah-Millewa Forest Red Gums, to be in good condition when even under natural situations a percentage of trees would be less healthy. This is an unachievable aspirational target, irrespective of level of human intervention.

As it stands, the Guide to the proposed Basin Plan offers no trade-offs and focuses purely on a flow-related regime with no regard for social, economic or even broader environmental implications. Such an omission would devastate regions like ours where 90 percent of businesses are reliant on irrigated agriculture for their survival².

If the Murray Darling Basin Plan does not give the same weight to social and economic impacts as it does to that of the river environment, there is a genuine risk that the very basis of whole communities will be undermined. If this proposed Plan proceeds in its current form the future of entire communities is at risk.

Murray Irrigation is of the view that the failure of the MDBA to properly consult with communities and industry within the Basin in the preparation of the Guide to the proposed Basin Plan has resulted in a Guide that fails to maximise environmental benefits and minimise third party impacts. For any Basin Plan to work communities and industry must be involved and consideration must be given to non-flow related environmental problems and possible solutions.

Request to Present

Murray Irrigation welcomes the opportunity to supply the Standing Committee on Regional Australia with this Submission to its Inquiry on the Impacts of the Murray Darling Basin Plan on Regional Australia and requests the opportunity to address the Committee to support the evidence provided in this Submission.

² *NSW Central Murray Community Profile: Irrigation Region, Delivering the Basin Plan*, Marsden Jacob Associates, EBC Consultants, RMCG, DBM and advisors, May 2010, p.6.

Background

Murray Irrigation Limited is an unlisted public company that provides irrigation water and associated services to 2,389 landholdings owned by around 1,200 family farm businesses over an area of 748,000 ha through around 3000km of channels in the NSW southern Riverina. Murray Irrigation's source of water is the regulated River Murray and the company's water supply is almost exclusively NSW Murray General Security Water. Murray Irrigation's shareholders are farmers with food and livestock being the focus of regional production for both domestic and international markets. Irrigated agriculture is the foundation of the social and economic wellbeing of our towns and businesses, which has a regional population of 33,000.

The Guide to the Murray Darling Basin Plan

Murray Irrigation is of the belief that if the Murray Darling Basin Plan does not give the same weight to social and economic impacts as it does to that of the environment, there is a genuine risk that the very basis of whole communities will be undermined.

If the Plan is implemented as per the Guide's recommendations, without consideration of environmental works and measures, strategic buy backs and working with irrigators to achieve the best outcome for all, it would drastically affect the ability of our community to remain viable³.

It is the view of Murray Irrigation that the approach taken by the MDBA, to concentrate on end of system flows and to ignore current and/or future infrastructure or engineering measures to save and efficiently deliver water has led to the proposed cuts to SDLs being unnecessarily high.

Murray Irrigation rejects the "just add water" approach taken by the MDBA and contests that there are a number of factors other than flows that threaten river and floodplain ecosystem health as described by the Murray Darling Basin Commission Scientific Panel in their Report on River Health in 2000⁴.

The proposed Basin Plan has been prepared at a time of record low inflows. In May 2009 the MDBA reported that Murray System inflows had been below average in nine out of the last 10 years⁵. The investment in the environment during this time through the Living Murray program, Water for Rivers, and the NSW Water Sharing Plan (WSP) have not been fully implemented or evaluated. There are questions that remain unanswered:

- What is the expected outcome from the Living Murray investment in both water recovery and works and measures?
- *Water for Rivers* is on track to meet its target of returning 70 GL of water for the River Murray environment. To what extent has this achieved the targeted environmental improvements?
- The NSW WSP for the NSW Murray commenced in 2004 but was suspended in 2006 due to a "severe water shortage"⁶. The WSP was designed to achieve a balance between the environment and water users. There has not yet been the opportunity to judge whether this will achieve its objectives.
- Has the potential benefit of this investment been modelled by the MDBA?
- Where are the results of this analysis?

³ *The Potential Effects of Changes to Water Allocation Policy on Financing the Agricultural Sector*, October 2010, Adrian Rizza, Commissioned by MDBA

⁴ *Report on River Health*, Murray Darling Basin Commission Scientific Panel, MDBC, 2000

⁵ *River Murray System Drought update*, June 2009, MDBA

⁶ http://www.gazette.nsw.gov.au/pdfs/2006/17th_%20November.pdf#page=5

It is our view that these environmental programs, in particular the investment in The Living Murray, Water for Rivers and Restoring the Balance to date should be fully evaluated before removing more water from industry at the expense of local communities.

Murray Irrigation also believes the singular focus of the Guide to the proposed Basin Plan does not take into account broader environmental factors. This issue was recently highlighted by an inter-departmental committee in Canberra whose findings have added weight to criticisms that the Murray-Darling Basin Authority has been given too narrow a brief for creating a "basin plan", given the potential for such changes to affect a broad range of social and environmental factors. The Committee identified several unintended environmental consequences of the Basin Plan including the fact that reducing irrigated agriculture could have a negative impact on efforts to mitigate carbon emissions⁷.

The Commonwealth Water Act 2007

We understand that reviewing the *Water Act 2007* (Cth) (the Act) is not part of the Committee's terms of reference, however, Murray Irrigation believes that the Act does not deliver a triple bottom line outcome as promised by the National Water Initiative and should be amended. Failure to amend the Act could result in legal challenges against any final plan which would create further delays and uncertainty for regional communities.

We appreciate that the Minister, Tony Burke, has publicly stated his interpretation of the Act allows equal balance of the three considerations. Minister Burke appears to have a different interpretation to both the MDBA and that of the former Water Minister, Penny Wong. We assert that this in itself is the problem. Where the intent of the Act is open to interpretation, it is open to legal challenge. It is our view that the Water Act must be thoroughly investigated and amended to ensure that it is clear in its intent to deliver a Basin Plan that meets social, economic and environmental objectives.

We fear the assessment of MDBA Chair, Mike Taylor, is correct that under the Act the MDBA "cannot compromise the minimum level of water required to restore the system's environment on social or economic grounds."⁸

We believe that Section 21 of the Act, which forms the basis of the Basin Plan, alters the original intent of the National Water Initiative's prescription that management of surface and groundwater resources should "optimise economic, social and environmental outcomes".⁹

It is our view that, if the MDBA does not believe it can address social and economic issues equitably under the Act as it is currently written, then the Act must be amended.

As the Act currently stands, Murray Irrigation is concerned that the MDBA interpretation that underpins the Guide to the proposed Murray Darling Basin Plan is singularly focussed on increased flows when water resource management needs to incorporate more than a reliance on volume.

⁷ *Murray Plan Carbon Threat*, The Land online, <<http://theland.farmonline.com.au/news/nationalrural/agribusiness-and-general/political/murray-plan-carbon-threat/2030081.aspx>> accessed 20 December 2010, 10.15am.

⁸ *Plan for the Murray Darling Basin – Role of the Authority Chair*, Statement by MDBA Chair Mike Taylor announcing his resignation, released 7 December 2010

⁹ National Water Initiative, para 23

It is our belief that adaptive management approaches that include natural resource management necessary to address all aspects of river health are a requirement of the Act. Specifically, Section 3 (f) of the Act states:

“to ensure that the management of the Basin water resources takes into account the broader management of natural resources in the Murray-Darling Basin.”

The Sustainable Rivers Audit (SRA), which the MDBA relied on as an indicator of river health, shows that two-thirds of rivers were in “moderate to good” hydrologic health, indicating that non-flow related issues are a problem, yet the only solution offered by the Guide is more water.

Further, the Scientific Panel reporting to the Murray Darling Basin Commission in 2000 found that there are a large number of factors other than flows that threaten river and floodplain ecosystem health¹⁰. This supports our belief that holistic natural resource management, rather than merely increased flows, must be considered in order to develop a Basin Plan that will improve the overall health of the Basin. These important issues should not be relegated to issues beyond the scope of the Basin Plan.

¹⁰ *Report of the River Murray Scientific Panel on Environmental Flows*, Thoms et al, June 2000, MDBC

Terms of Reference:

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

The Guide selected a range of additional surface water for the environment of between 3-4,000GL per year using the start point of the current MDBA Cap on diversions net of The Living Murray investment. In the NSW Murray this would reduce the current cap from 1,825GL/y to 1,351GL/y at best or 1,190GL/y at the upper end of the scale which is a reduction of between 28-37 percent¹¹.

The above figures represent reductions across the NSW Murray valley in water use. What they don't consider is the reality of the impact on General Security Entitlement Holders after the needs of High Security users and town water entitlements have been met. This figure has also not considered the impact of the additional conveyance volumes required¹² on the reliability of General Security Entitlement Holders. Nor does it consider the impact on Group Scheme holders like Murray Irrigation, which are already impacted by Governments non-strategic water buybacks.

At Murray Irrigation our General Security Entitlements as a result of Living Murray, Water for Rivers and Restoring the Balance plus the additional volume sought will be reduced, assuming the 4,000GL scenario by half of the volume at privatisation.

Murray Irrigation has already participated in Government initiatives to return water to the environment through the Water for Rivers program, The Living Murray Initiative, and Restoring the Balance. As at October 2010, 208,722 NSW General Security Water Entitlements had been returned to the environment through these programs. This equates to 17.5 percent of our original General Security licence volume.

The impacts of the Murray Darling Basin Plan can be looked at from three angles:

1. Business impacts due to reduced water availability in the system;
2. Community impacts; and
3. Physical impacts resulting from the limitations of deliverability.

Business Impacts

Murray Irrigation has been working with customers to develop initiatives to reconfigure and/or decommission under-utilised assets, introduce more efficient metering and reduce or make more efficient existing irrigated areas through on farm efficiency programs.

The Guide does not consider the impact of water withdrawal on the commercial viability of irrigation infrastructure operators such as Murray Irrigation. A loss of water entitlements would inevitably have a negative impact on Murray Irrigation's revenue base affecting our ability to implement further water saving infrastructure maintenance and upgrades. Reduced volumes of water sales across the breadth of our supply network will reduce the delivery efficiency of the network.

Untargeted buybacks are hampering not helping progress, particularly in the reconfiguration and decommissioning program. The sporadic purchasing of water with no consideration of the infrastructure system that it comes from has resulted in holes in the system whereby infrastructure is retained through and past land that has no water entitlements in order to service neighbouring farms. The cost of maintenance is then divided among less entitlement holders increasing their

¹¹ *Guide to the Proposed Basin Plan, Volume 1*, MDBA, 8 October 2010, p.132-134.

¹² *Guide to the Proposed Basin Plan, Volume 1*, MDBA, 8 October 2010, p.148-149.

costs. If prices rise too much, more farmers are forced to reconsider their futures. It is like a malignant cancer spreading throughout our system.

Murray Irrigation's own business forecasting shows the company's future viability is at significant risk in a future with significantly lower water sales compared to historical diversions.

It was this issue of stranded assets that originally led the Victorian Government to implement its four percent limit on water trades out of an irrigation district. This rule is now defunct in NSW but not Victoria because of the *Water Market Rules 2009* (Cth). Ironically the Guide to the Proposed Basin Plan will allow Victoria to continue with its trade limitations until their Water Sharing Plans expire in 2019, that is another 10 years of protection compared to Murray Irrigation.

Murray Irrigation believes the MDBA and Department of Sustainability Environment Water Populations and Communities (SEWPAC) need to work with infrastructure owners to best identify areas where water purchases and sub-system retirement can be achieved at the same time.

Australian National University Economist Quentin Grafton asserts that the drought had minimal impact on gross income in the Murray Darling Basin¹³; however it is the opinion of Murray Irrigation that he has over-simplified the Australia Bureau of Statistics (ABS) Gross Value of Irrigated Agricultural Production (GVIAP) report by looking at the whole-of-Basin bottom line rather than giving consideration to commodity, regional and farm type vagaries and the limitations of the information.

The GVIAP report shows that irrigation dependent commodities that rely on general security water entitlements, such as rice and to a lesser degree cotton, showed a dramatic decrease in the value of irrigated production. The value of rice production decreased from \$55 million to \$7 million from 2006-07 to 2007-08 at the height of the drought. Irrigated Cotton followed this trend with a 57 percent decrease in irrigated production. As the NSW Murray is the center for the majority of Australia's rice production it stands to follow that The Murray NRM region in NSW had the largest decrease in GVIAP over the same period (\$439 million to \$205 million).

Further, the GVIAP data has not been adjusted for inflation and represents output price only therefore ignoring farm input costs. Our estimates conclude that, after accounting for inflation, real GVIAP fell by 20 percent between 2000-01 and 2006-07. The ABARE Farm Survey Reports from 2004 to 2010 show the difference in real farm performance, income versus profit, during the drought period¹⁴. This shows that while GVIAP for horticulture shows high earnings from horticulture in 2006/07, many farms were running at a loss.

The removal of water from irrigated agriculture through the proposed basin plan will see a similar reduction in production which will have a major impact on both the economic and productive sustainability of this region. The fabric of this community will change.

One example of the effects of a loss of productivity is the Denilquin Rice Mill which, in 2008 at the height of the drought, closed its gates leading to around 200 job losses. The Mill, the largest in the southern hemisphere, will be reopening in April 2011; however, most of the skilled workforce previously employed there left the area following the closure. This highlights the fact that when a tradesperson or skilled labourer loses their job, they do not stay in the area, they take their families and their skills elsewhere. This is supported by unemployment data, where the region's

¹³ Several interviews including <<http://www.abc.net.au/rural/news/content/201010/s3037983.htm>> accessed 6 December 2010, 1.46pm

¹⁴ <http://www.abare.gov.au/publications_html/surveys/surveys/surveys.html> accessed 14 December 2010, 2.42pm

unemployment rate is lower than the surrounding areas and the rest of Australia, due to working age people leaving to find work elsewhere rather than being indicative of a vibrant economy.¹⁵

Prior to the extreme drought of 2006 and 2007, the Murray Irrigation area of operations produced 50 percent of Australia's rice crop and, in terms of State production, 20 percent of milk, 75 percent of processing tomatoes and 40 percent of potatoes.

Drought saw sustained reductions in crop production across Australia with the Australian Bureau of Statistics (ABS) Agricultural Commodities reports highlighting the falls in production throughout the drought years.

The implications of the proposed SDLs on agriculture and food production cannot be underestimated. The SDLs will mean less water available for agriculture. It does not matter how environmental water is achieved – through voluntary buy backs or some form of compulsory acquisition (which we understand is not an option) – it will not be available for agriculture. Therefore, if you look at yield per megalitre for irrigated agriculture, you see a pro-rata decline in agricultural production to water availability.

Murray Irrigation estimates its farm business size is 617ha, with 82 percent of farm businesses owning less than 1,000ha. Farm businesses of this size in a region with a mean annual rainfall in the order of 350mm – 400mm would not be viable as dry land operations¹⁶.

The Logie Brae Landcare Group located near Finley set up spring irrigation demonstrations in several wheat paddocks over a three year period from 1998 to 2000. They found just one irrigation application of 1ML/Ha increased the yield by 0.9T/Ha¹⁷. As at 20 December 2010, at prices delivered to AWB's Deniliquin site of \$231.2/T, this higher yield equates to \$208.08/ha for ASW1 grade wheat¹⁸ or \$128,385.36 per average sized farm.

In addition, across the landscape is significant private and public investment in infrastructure to efficiently delivery water via gravity. Any contemplation of broad scale conversion to dryland farming operations, would incur significant adjustment costs, including demolition costs.

“Critical to the future viability of agriculture is greater certainty. Reductions in water entitlements can have a very direct and deleterious impact on farm and house valuations in the river communities, and make risk-capital more expensive.” Dr John Briscoe, professor of environmental health at Harvard University¹⁹

Further to Dr Briscoe's comments are the flow-on impacts that uncertainty creates within agricultural communities. Banking consultant, Adrian Rizza, found that even prior to the release of the Basin Plan, there was considerable uncertainty which affected the ability of firms and famers to raise

¹⁵ *DRAFT Central Murray Cluster Group of Councils Strengthening Irrigation Communities draft Synthesis Report – Stage 1: Where are we now?* Hyder Consulting Pty Ltd, 25 October 2010, p. 8.

¹⁶ *NSW Central Murray Community Profile, Delivering the Basin Plan*, Prepared for the MDBA, Consortium led by Marsden Jacobs Associates, May 2010, p. 24.

¹⁷ *NSW Department of Primary Industries*, <http://www.irec.org.au/farmer_f/pdf_180/Spring%20irrigation%20of%20wheat%20.pdf> Accessed 20 December, 3.55pm.

¹⁸ *AWB Daily Contract Prices, Riverina & North Eastern Victoria*. <http://www.awb.com.au/NR/rdonlyres/1739CEDC-EF63-40D6-B65F-49C454EF65D5/0/101220_Vic_Riverina.pdf> Accessed 20 December 2010 at 4.23pm.

¹⁹ *Why Water is Everybody's Business*, The Business Spectator, 23 November 2010, <<http://www.businessspectator.com.au/bs.nsf/Article/water-infrastructure-Uniwater-drought-climate-changepd20101122-BF3J9?opendocument&src=rss>> Accessed 20 December 2010 2.10pm.

equity²⁰. He found that where a permanent water entitlement is sold, the remaining land is treated as dryland for the purposes of determining loan capacity, even where temporary water is available. As indicated above, dryland agriculture is less productive per hectare which materially affects the financial position of the business.

All of the impact analysis does not even consider how the proposed Basin Plan may impact on the reliability of the different water products.

The Guide includes proposed reductions in average diversions; it is not possible to determine the likely impacts of the compliance with the Basin Plan until each state completes their Water Resource Plans and has them accredited. Whilst all of the focus is on volume and it is acknowledged that the Australian Government has made a commitment to “bridging the gap” between the new SDL and the previous Murray Darling Basin Ministerial Council Cap on diversions, Murray Irrigation is deeply concerned that the devil is in the detail and the reliability of NSW general security water entitlements will be significantly eroded, if the proposed flow regimes were implemented.

Community Impacts

According to the Marsden Jacob Associates report to the MDBA, around 90 percent of businesses in Murray Irrigation’s area of operations are directly reliant on irrigated agriculture²¹. Any reduction of business from irrigated agriculture in our area will impact the community. Adrian Rizza reported that banks considered Deniliquin as one of a number of towns that “may struggle to remain viable in the absence of sufficient water for irrigation.”²²

Murray Irrigation recently conducted a survey of customers and found that the number of farmers planning to continue farming in three years’ time dropped from 81 percent under current circumstances to 29 percent if the Guide to the proposed Basin Plan were implemented. The main reason for exiting the industry in this scenario was the belief that their farm would no longer be viable (42 percent). Customers are concerned about the viability of Murray Irrigation, their future access to the irrigation network and the future cost of this supply.

The MDBA admits that the rice industry, which supports not only many of our farmers but also a large off-farm processing sector in the district, “depends largely on the availability of water²³.” Marsden Jacobs Associates states that a 20% reduction in water entitlements would see smaller rice farms become unviable and at 40% reductions the “majority of rice farms would become unviable²⁴.” Despite the Government’s commitment to only purchase water from “willing sellers”, less water in the system reduces overall access to water limiting the ability of farmers to trade water to help see them through dry years.

It is the view of Murray Irrigation that, while the MDBA estimates a reduction in gross value of irrigated agricultural production of 13-17 per cent with a reduction in jobs of 760-1,100, NSW Irrigator’s Council more realistically estimates a minimum loss of \$2.4 billion in gross production and 17,000 jobs.

²⁰ *The potential effects of changes to water allocation policy on financing the agricultural sector and businesses in the Murray Darling Basin*, Report to the MDBA, Adrian Rizza, October 2010, p. 7.

²¹ *NSW Central Murray Community Profile: Irrigation Region, Delivering the Basin Plan*, Marsden Jacob Associates, EBC Consultants, RMCG, DBM and advisors, May 2010, p.6.

²² *The potential effects of changes to water allocation policy on financing the agricultural sector and businesses in the Murray Darling Basin*, Report to the MDBA, prepared by Adrian Rizza, October 2010, p. 6

²³ *MDBA Guide to the Proposed Basin Plan*, Volume 2, 22 Oct 2010, p. 24

²⁴ *Economic and social profiles and impact assessments for the Murray-Darling Basin Plan Synthesis Report*, Marsden Jacob Associates, RMCG, EBC Consultants, DBM et al, 7 July 2010, p. XVII

Murray Irrigation employs over 100 staff throughout our area of operation, most of whom participate in community clubs and organisations and have children in local schools including small regional schools. A significant loss of revenue would trigger a corporate restructure and may result in job losses – loss of community club membership and sponsorship and loss of school enrolments. If this is replicated in the other 90 percent of affected businesses, community clubs will struggle to maintain membership, school enrolments will decline impacting teacher numbers and even small school viability. This then spreads further through the community with essential services (such as Health) based on population numbers.

During the drought, people were able to struggle through because they knew there would be a change in season and opportunity to rebuild. But it was a struggle. Marsden Jacob Associates estimate that during the drought, in the NSW Central Murray region around 30 percent of farm businesses accessed Rural Counselling services with over 600 applications annually to the Rural Assistance Authority for Farm Interest Subsidies²⁵. Small business applications are not included in this figure. In the event of the implementation of the Basin Plan, similar losses in revenue would occur without the safety net of exceptional circumstances payments.

Financial stress and uncertainty about the future through constantly changing water policy and drought have led to an increase in the demand for local counselling services. Anecdotal evidence suggests mental health issues, relationship breakdowns and suicide are all on the rise in rural areas.

Physical Impacts

A major concern of Murray Irrigation is how the water identified for key assets will be delivered without risking increased flood incidents and third party impacts. It was reported in The Australian on 18 December 2010 that the MDBA is aware of this fact and drafted a note to the Government outlining that "...the risk posed to rural land is more significant" and advises that there may be a need for compensating farmers for any flooding caused by increased environmental flows²⁶.

Murray Irrigation has identified several points on the river system in our area where delivery of the desired water flows to key assets will exceed the maximum regulated flow capacity upstream of the asset.

Barmah-Millewa Forest

The Guide recommends flows in the range 25,000ML per day to 60,000ML/day which can only be delivered if "piggy backed" onto flows from the Ovens and Kiewa Rivers because of the regulated river channel capacity at Doctor's Point of 25,000ML/day. Any flows downstream of Yarrawonga above 20,000ML/day exceed the capacity of the regulators and will cause overbank flows. The aim of the Guide is to maintain 100 percent of the Red Gum and Black Box in good condition. This is not possible – even under pristine natural conditions.

The Barmah-Millewa Forest is largest river red gum Forest in Australia and in 1993 became the first site to be granted an Environmental Water Allocation (EWA) of 100GL. The Forest currently holds 100GL high security water entitlements, 50GL general security entitlements and receives a portion of water from the Living Murray program which targets successful breeding of water birds at least three years in 10 and healthy vegetation in at least 55 percent of the forest area²⁷.

²⁵ *NSW Central Murray Community Profile: Irrigation Region, Delivering the Basin Plan*, Marsden Jacob Associates, EBC Consultants, RMCG, DBM and advisors, May 2010, p.12.

²⁶ *Murray-Darling Authority Flagged Rising Flood Risk*, The Australian, 18 December 2010 < <http://www.theaustralian.com.au/news/nation/murray-darling-authority-flagged-rising-flood-risk/story-e6fmg6nf-1225972992130> > accessed 20 December 2010, 10.45am

²⁷ *The Barmah-Millewa Forest: Icon Site Environmental Management Plan 2006-2007*, MDBC, 2001, p. 1

There is in excess of 50 water management structures are currently present throughout the Barmah-Millewa Forest which provides the ability to get water to unique areas throughout the forest via channels and regulators and manage them individually. These management structures, while not the preferred method, are a valuable tool for managed environmental watering when water is limited²⁸. Despite the MDBA acknowledging this fact, they still recommend maximum volume flows rather than maximising the effectiveness of managed delivery²⁹.

Edward-Wakool River System

The proposed flows requirements of 5,000 – 30,000ML/day will be difficult to achieve under normal regulated conditions and cannot be achieved without also flooding the Barmah/Millewa Forest (this may be the intention). Targeting flows for all assets is currently constrained by the regulated river channel capacity at Doctor's Point of 25,000ML/day. In addition the maximum regulated flow into the Edward system is 4,350ML/day. Therefore the volumes sought are only possible with an unregulated flow event through the Barmah/Millewa Forest.

Murray Irrigation currently works with the NSW Department of Environment, Climate Change and Water (DECCW) to deliver environmental water to identified wetlands in the Edward-Wakool through our irrigation system. The MDBA recognises that since 2000 this program has provided over 28,000ML of water to 93 wetland sites³⁰. DECCW have identified that these projects achieve environmental outcomes including improved wetland understory plant diversity and tree health, a reduction in weeds and an increase in landholder awareness and participation.

The wetlands watering project uses irrigation infrastructure channels to effectively deliver water to target wetlands with no impact on surrounding productive farmland. Despite the recognised effectiveness of this program, the MDBA continues to focus on increased volume flows that would inundate the entire area with no guarantee of improved environmental outcomes.

Gunbower-Koondrook-Perricoota Forest

The flow volume for the Gunbower-Koondrook-Perricoota Forest do not appear to consider the construction of the planned works in the forest to divert water into the forest from above Torrumbarry Weir.³¹ These flood enhancement works, funded under the Living Murray program are designed to reinstate a range of flows in the forest that will achieve inundation of 52 percent of the forest with flows only slightly above normal operating levels for the River Murray.

The Living Murray program sets an interim target to maintain 30 percent of the forest in healthy condition while the Guide aims to maintain 100 percent of the red gum and black box in healthy condition. We say again – this is not possible and to do so would require flows of well above 60,000ML per day.

Delivery of the proposed volumes (16,000-40,000ML/day), even the 16,000ML/day for three months will be constrained by the Barmah/Millewa Choke of 8,500 ML/day. Delivery of the proposed volumes will be reliant on significant volumes from the Goulburn system and also require high flows through the Barmah/Millewa forest. The flows in spring 2010 can be used as an example of how difficult it is likely to be to achieve these flows. In September 2010 flows peaked at 47,000ML/day, for only a small number of days and November 2010 flows peaking at only 25,000ML/day at Torrumbarry.³²

²⁸ *The Barmah-Millewa Forest: Icon Site Environmental Management Plan 2006-2007*, MDBC, 2001, p. 8

²⁹ *Guide to the Proposed Murray-Darling Basin Plan, Vol 2, Part 2*, MDBA, October 2010, p. 610

³⁰ *Guide to the Proposed Murray-Darling Basin Plan, Vol 2, Part 2*, MDBA, October 2010, p. 619

³¹ *Planned works in the Koondrook – Perricoota Forest*, Murray Catchment Management Authority, May 2010.

³² <http://riverdata.mdba.gov.au/sitereports/409207b>

Hattah Lakes

Achieving flows of 40,000ML/day at Euston will be extremely difficult as a regulated flow or managed event. The flows in spring 2010 peaked at Euston at 38,000ML/day for two days in October and is expected to peak at approximately 41,000ML/day in early December.³³ This is a result of unregulated flows from the Kiewa, Ovens, Goulburn and Murray that caused significant flooding upstream. Proposing a flow duration of 40,000ML/day at Euston for two months could not be achieved without upstream flooding and this is the lowest flow threshold proposed.³⁴

Riverland – Chowilla floodplain

Murray Irrigation has similar concerns about the flow regime proposed for this site (40,000-125,000ML/day). Achieving the volumes proposed will be reliant on both Darling and River Murray flows. Murray Irrigation notes that flows in 2010 have not yet achieved the lower flow volume targets.³⁵

Lower Darling River System

Some of flows proposed for the Lower Darling River System are achievable, subject to the outlet capacities. However the 45,000ML/day flows will result in flooding and the proposed flow of 17,000ML/day is nearly double the channel capacity and likely to cause minor rural flooding.

The height figures for the Menindee and Cawndilla should also be available as volumes.

2. 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

Murray Irrigation is unclear of the purpose for asking for water use compared to licenced entitlement. The mooted reductions in the Guide to the proposed Basin Plan are in ML, not entitlements. Whilst a business may not have used all of their available allocation and their water use as a percentage of their entitlements may be low the proposed Guide will reduce the volume that can be used, with consequent impacts on water users, entitlements and their associated communities. In the NSW Murray, since 1995 and the announcement of the interim Murray Darling Basin Ministerial Council Cap on diversions, it is assumed that all licences are active.

It is important when comparing water use as a percentage of entitlement to have an appreciation the variability in water availability both within the season and between seasons, farming systems and for annual based systems. These are all factors that influence water use and changes in allocation policy that may have occurred over time that have altered irrigator behaviour and use.

The table below shows data for Murray Irrigation for the last 14 years, it includes the volume available, the volume used on farm and water use as a percentage of the volume available and water entitlements.

³³ *Personal Communication State Water Corporation*

³⁴ *Guide to the Proposed Basin Plan, Volume 2, MDBA, 8 October 2010, p.651.*

³⁵ <http://riverdata.mdba.gov.au/sitereports/426201a>

Key features of this table are;

- The volume of water used on farm in Murray Irrigation has reduced significantly particularly in the last four years.
- The highest use year 1996/97 was 50 times more than the lowest use year.
- In three out of 14 years water use exceeded water entitlements. This is because of water trade, supplementary water access and advances from Snowy Hydro Limited.
- Water use as a percentage of the volume available reduced when water availability is low.

Year	Water available ML	Water use on farm ML	Water use % of available	Water use % of entitlement
1996/97	1,796,730	1,471,910	82%	124%
1997/98	1,091,705	1,045,658	96%	88%
1998/99	1,374,525	1,167,775	85%	98%
1999/00	775,886	675,155	87%	57%
2000/01	1,479,980	1,295,437	88%	109%
2001/02	1,322,381	1,239,536	94%	104%
2002/03	432,651	399,740	92%	34%
2003/04	732,390	658,608	90%	55%
2004/05	859,836	651,255	76%	55%
2005/06	1,230,203	985,038	80%	83%
2006/07	226,745	222,705	98%	19%
2007/08	52,758	29,401	56%	2%
2008/09	108,331	69,293	64%	6%
2009/10	395,000	161,000	41%	14%

Murray irrigation currently participates in water saving measures for our region and has also been working with customers to develop initiatives to reconfigure and/or decommission under-utilised assets, introduce more efficient metering and reduce existing irrigated areas through on farm efficiency programs.

Progress has been hampered however by the current opportunistic strategy of water buybacks under the Water for the Future program that does not consider impacts on group schemes such as ours.

Murray Irrigation previously participated in negotiations with the then Department of Environment, Water, Heritage and the Arts (DEWHA). The Department approached Murray Irrigation to put forward a proposal for sub system retirement and accompanying water entitlements. Initially this proposal was rejected by the effected landholders. Since this early proposal, Murray Irrigation has developed similar proposals on behalf of willing landholders; however, these have subsequently been rejected by the Department. Had our proposal been accepted, the result would have been the return to the environment of 43GL of water entitlements in conjunction with the retirement of over 100Kms of channels.

The sporadic purchasing of water with no consideration to the infrastructure system that it comes from has resulted in holes in the system whereby infrastructure is retained through and past land that has no water entitlements in order to service the neighbouring irrigation farms. As this continues it will see a rise in the fixed costs of providing water to the remaining farmers. If prices rise too much, farmers' profitability will be eaten away resulting in more farmers considering their options and possibly leaving the industry.

Meanwhile, Murray Irrigation is left with around 3000kms of channels to maintain. It is a vicious circle that has not been considered by SEWPAC who is responsible for buy backs under the Water for the Future program.

In 2009 Murray Irrigation commissioned Marsden Jacob Associates (MJA) to analyse the benefits and costs of investments in water saving technologies and strategies on farms within our area of operation. The study also analysed the public benefit created through the reallocation of water to the river red gum forests. The report found that the cost to the individual farmer of converting to water saving technologies or dryland farming was not met by the market value of water. The conclusion is that economic value of water for environmental flow augmentation requires a price premium³⁶.

3. 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.

The role governments can play in the agricultural and research sectors to support improvements in water efficiency cannot be over stated. Unfortunately Government continues to withdraw from agricultural research, increasingly looking to the private sector to pick up the shortfall. In reality, this does not happen. Without Government support of public good research, industry would be reluctant to invest in something that would not provide an immediate return.

“This co-investment model has important strengths, including: helping to ensure that public money is not spent on research of little practical value; and facilitating greater and faster uptake of research outputs.”

The Productivity Commission Draft Report in to Rural Research & Development Corporations (p. XIV).

The cessation of the land and water management plans, the closure of Land and Water Australia (LWA) and the subsequent Productivity Commission’s recommendation to cut Government contributions to industry specific Research and Development Corporation (RDC) funding and the closure of regional CSIRO research centres in the last four-years have all compounded to foster a perception of a lack of Government support for agricultural research. Private industry is not going to support something that does not have the endorsement of Government.

To date the RDC model promoted joint ownership between government and industry, providing the incentive for producers to support research levies while giving governments the ability to direct outcomes through the National Research Priorities. Through this model agricultural research projects have led to advances in water efficiency, biodiversity management, river health and lower chemical use. The RDC model ensures research is undertaken for the public good, not solely for commercial ends. The concern with the Productivity Commission’s proposal is that something like research into water efficient varieties of rice could have Government funding reduced as it is considered industry specific, despite achieving outcomes for the public good in water savings.

LWA was a statutory RDC and coordinated an integrated portfolio of research investments focused on productivity growth balanced with sustainability. LWA was responsible for developing the

³⁶ *Benefit cost analysis of farm level investment in water saving*, Marsden Jacob Associates, a report prepared for Murray Irrigation Limited, February 2009.

AUSRIVAS system to measure river health as well as developing strategies to deal with dryland salinity and climate change within primary industries³⁷.

The closure of LWA in June 2009 saw the cancellation of a large number of contracts with university-based and other researchers across Australia, closing down many partly completed research projects, undermining confidence in broad, public good, sustainability research.

We are aware of the Productivity Commission recommendation for the formation of a similar body, Rural Research Australia (RRA)³⁸ to address the gap in public good agricultural research that has become apparent since the closure of LWA; however, we note that this is at the expense of funding to industry specific research.

The success of both the LWMP and the RDC programs is the community support and ownership the models foster. In both instances the community or industry identifies priority projects to meet the objectives set by Government. In this way industry or the community is addressing a specific need identified by them and seeing the returns at the end.

For example, if the MDBA had travelled to our area prior to the public release of the draft and sat down with stakeholders to discuss what they wanted to achieve, provided they were willing to listen, not only would they have fostered true community engagement, they would also have been made aware of the impracticalities of parts of their plan – such as delivering large flows of environmental water down river's that cannot physically deliver it – before committing pen to paper.

Further Considerations:

4. Measures to increase water efficiency and reduces consumption and their relative cost effectiveness;

Murray Irrigation has made significant improvements in delivery efficiencies since privatisation in 1995 when we were operating at about 70 percent efficiency. Through investments in channel seepage and remedial lining activities, water-tight control gates and automated monitoring of escape flows we now run at 80-90 percent efficiency.

Murray Irrigation has investigated further areas where water efficiencies can be gained and have identified the following areas:

- Reconfiguration of infrastructure through the removal of non-productive channels and the lining and selected piping of low demand channels;
- Retirement through the removal of channels where limited entitlements remain;
- Upgrading infrastructure to remote control regulators and escapes allowing improved control of escapes and rain rejection events; and
- High Flow Irrigation (On farm savings)

In late 2008 and early 2009 Murray Irrigation conducted protracted negotiations with DEWHA in seeking retirement of a bulk section of irrigated land west of Moulamein involving 70km of channel. Agreement was reached on price above market with the Department, however the group could not agree on the distribution and the offer lapsed.

In 2009 Murray Irrigation commissioned Marsden Jacob Associates (MJA) to analyse the benefits and costs of investments in water saving technologies and strategies on farms within our area of

³⁷ <<http://lwa.gov.au/news/2009/oct/06/land-and-water-australias-contribution-australia>> accessed 2/12/2010 1710pm.

³⁸ Draft report into Rural Research and Development Corporations, Productivity Commission, 2010, p. XIV

operation. The study also analysed the public benefit created through the reallocation of water to the river red gum forests.

The ensuing report found that, while there was a net public benefit under most scenarios, the cost to the individual farmer of converting to water saving technologies or dryland farming was not met by the market value of water. This means, without support, farmers do not have an economic incentive to invest in farm level water conservation³⁹. The conclusion is that economic value of water for environmental flow augmentation requires a price premium that exceeds the open market price, which primarily signals the economic value of water for irrigation, for the farmer to break even.

Based on the results of this report, Murray Irrigation prepared a submission in conjunction with irrigation entitlement holders to the then Department of Environment, Water Heritage and the Arts (DEWHA) in 2009 for a sub-system retirement package designed to ease the burden of maintenance on low demand channels and reduce our system footprint leading to reduced water losses through seepage and evaporation. It was felt that a bulk purchase of this nature, approximately 25GL from one irrigation sub-system alone, plus the added savings in conveyance water through the retirement of infrastructure would provide an incentive to the Government to accept this proposal. Unfortunately the proposal was rejected by the Department on the grounds that they could only pay market value for water entitlements.

In April 2010, Murray Irrigation again entered into an agreement with DEWHA to prepare a proposal for sub-system retirement. Understanding the previous reasons given by the Department, Murray Irrigation met with 10 landholder groups who had previously shown interest in selling water entitlements and decommissioning the irrigation sub-systems. Our proposal suggested the Government would buy water entitlements at market rates and subsidise the decommissioning of infrastructure. In turn Murray Irrigation would provide a payment to landholders for the termination of their delivery entitlements. This proposal would have also allowed Murray Irrigation to strategically reconfigure our business in line with Government water purchases that have occurred to date.

In June the Department advised Murray Irrigation of their decision to offer a spot market price which had reduced to approximately \$700 (informed by DEWHA purchasing program). The halving of the market price for general security entitlements in just 12 months meant that the spot market price offer was not accepted by the landholder groups. The application which would have seen the return of 43GL of Murray Irrigation water entitlements and the retirement of over 100km of channels was not pursued any further by Murray Irrigation.

Murray Irrigation also prepared an application to participate in the Private Irrigation Infrastructure Operators Program (PIIOP). Our submission once again looked to combine purchasing with strategic channel retirement and deliver on the other opportunities identified. The application envisaged the return of 167 GL at an average price of \$3,400 per ML. Again this application was not successful and we are in the process of preparing a submission for the second round of PIIOP funding.

Murray Irrigation has consistently entered negotiations with the Department in good faith and have invested a lot of time and resources to identify areas where water savings can be achieved at the same time as improving delivery efficiencies; however, the level of detail required by the Government is difficult to achieve with the resources available to us as a private enterprise and with no guarantee on a return on investment through the approval of our proposals.

³⁹ *Benefit cost analysis of farm level investment in water saving*, Marsden Jacob Associates, a report prepared for Murray Irrigation Limited, February 2009.

Murray Irrigation will undertake some sub-system retirement independent of any Government support packages and continues to try to identify areas where efficiencies can be gained. We are looking at Government water purchases to date to try to identify if there are areas where the level of purchases may make the decommissioning of infrastructure viable. This is a difficult task as there has been no identifiable strategy to water purchases and sales to the Government have occurred throughout the system rather than in strategic clusters as contained in our proposals.

On top of system reconfiguration, a large opportunity exists for on-farm efficiency through the conversion to high flow irrigation. It is estimated that up to 40-50GL in water savings can be achieved in a typical year. This is occurring through the On-Farm Irrigation Efficiency program under which Murray Irrigation is a delivery partner with the Commonwealth Government. Murray Irrigation has submitted 141 projects for this program and is currently in the process of delivering contracts to the landholders. Through these projects it is estimated that 30GL will be delivered to the Commonwealth Environmental Water Holder.

Irrigators and Murray Irrigation are flexible and adaptable and are always looking for ways to improve water efficiencies as part of our business programs. Government assistance programs such as the on-farm irrigation efficiency projects allow farmers who have suffered through years of drought bring forward irrigation restructuring projects rather than wait for a few good cropping years.

5. Opportunities for economic growth and diversification within regional communities; and

In 2003 Murray Irrigation established a business development unit (BDU) to explore opportunities for the company and its shareholders in areas of diversification for water use, horticulture, new industries and investment and financing. During its operation, the BDU hosted workshops designed to encourage diversification of land and water use in the area, including horticultural workshops which led to the development of an implementation plan to address service delivery, infrastructure and water security issues.

Throughout its years of operation, the consistent impediment to growth and diversification was water security. Murray Irrigation customers hold general security water entitlements giving them the flexibility to adjust their farm plan in line with water availability. Many of the so-called "high value" crops such as fruit and nuts rely on guaranteed supply of water or high security entitlements. It is therefore difficult for landowners in our district to diversify without converting general security entitlements to high security.

"During 2006/07 Murray Irrigation's Business Development Unit (BDU) assisted a number of potential investors with investigation into establishing high value agricultural investments in the region, including two large scale almond investments. However these projects have not gone ahead and there has been no recorded expansion of horticulture or viticulture during the year.

"Investor confidence has been significantly affected by the ongoing uncertainty of water supply, with a zero water allocation, no conveyance water and the suspension of carryover last year, and similar conditions for the year ahead." Murray Irrigation Limited Annual Report, 2007

Similarly attempts to diversify into aquaculture in conjunction with the Seafood Co-operative Research Centre at the Wakool Tullakool Sub Surface Drainage Scheme (WTSSDS) using the saline water pumped by the WTSSDS, were unable to proceed beyond the successful development of technology due to risks around the confidence of water supply.

Diversification will only become an option when farmers and commercial investors are certain of their future water access which includes the stabilising of water policy.

6. Previous relevant reform and structural adjustment programs and the impact on communities and regions.

The Land and Water Management Plan (LWMP) was a successful program that saw State and Federal Government funding provided to regional Catchment Management Authorities to fund local community groups. Local projects were designed and co-funded by the farmer or beneficiary to improve economic and environmental sustainability. In the Murray Irrigation area of operations there were four LWMP working groups, made up of local farmers and community representatives. The issues identified in our region were:

1. Salinity
2. Discharge water quality
3. Veg & biodiversity
4. river health
5. Soil - salinity sodicity & Acidity
6. Groundwater – shallow quality, deep resource depletion

This program allowed Murray Irrigation to construct an effective drainage system to return water to the channel, and eventually the river, system. This system was carefully engineered to ensure there were no negative impacts on the water table and water quality is closely monitored and outflow controlled to ensure what is going back into the system is of high quality.

The LWMP program also saw on farm works projects devised to improve landforming, native vegetation, irrigation reticulation and the development of farm management plans.

Key to the LWMP was the education, monitoring and research components designed to increase community awareness and participation and continue evaluating and adjusting to achieve best practice.

The success of the LWMP was the community ownership of projects. The community was involved from the ground up and was therefore motivated to achieve results. The co-funded approach also meant the community had responsibility for the success of projects giving them extra incentive to monitor and report on results.

The LWMP programs appear to have been superseded by the on farm irrigation efficiency program. This program, while it does achieve water efficiencies, is more prescriptive with increased administrative requirements and is solely focussed on water without the holistic resource management approach of the LWMPs. An outline of LWMP projects undertaken from 1995 to 2010 is appendix A.

Conclusion

Murray Irrigation is of the view that the proposed cuts to SDLs contained in the Guide to the Proposed Basin Plan are unnecessarily high and through the consideration of environmental works and measures and effective utilisation of existing infrastructure, water savings can be made that will ease the burden on irrigators and, more broadly, basin communities.

The MDBA needs to reconsider the 'just add water' approach and adjust the recommendations contained in the Guide accordingly. Consideration must be given to the other factors that influence river health.

To assume the answer to poor environmental health can only be delivered by increased flows is simplistic to the extreme.

The River Murray is highly regulated system providing multiple benefits in addition to the supply of irrigation water such as tourism, recreation, urban water and navigation for boating. Solutions to the issues facing the River Murray lie in a collaborative approach between Governments (State and Commonwealth) and regional communities. Development of solutions will take time and demands solutions that are developed at a regional scale.

We assert that the approach taken by the MDBA is flawed. The Guide to the Proposed Basin Plan recommends 3-4,000 GL of water be returned to the Basin. The 3000 GL scenario effectively takes out the equivalent of a full Hume Dam every year while 4,000GL would take out Dartmouth Dam every year. Both scenarios effectively take out the entire contribution of the Snowy Mountains Scheme to River Murray flows - Australia's most ambitious civil engineering project.

Murray Irrigation supports the Government's current position to meet the final Basin Plan's SDLs by purchasing the difference or investing in infrastructure; however, we suggest that through consultation with local communities, Catchment Management Authorities, State Departments and Infrastructure operators, efficient water savings and targeted environmental watering projects can be achieved without the need for such drastic impacts on irrigation communities.

Since privatisation, Murray Irrigation has returned 17.5 percent of its General Security Licence Volume, or over 208,000 General Security Water Entitlements to the Environment. This water forms part of our commitment to The Living Murray program, Water for Rivers, Restoring the Balance and through our work with the NSW Department of Environment, Climate Change and Water. The benefit of all of these projects, each of which was meant to address the health of the river and wetlands, is that they involved the local community to identify methods to achieve water savings as well as means to deliver environmental water. Such a strategy was not taken by the MDBA in drafting the Guide to the proposed Basin Plan.

We suggest that such consultation must occur to achieve a Basin Plan that can be delivered with maximum environmental benefit and minimal third party impacts, either through reduced water access or increased flood events due to the inability of river channels to actually deliver the proposed environmental flows.

Murray Irrigation sees it as imperative that a sustainable Basin Plan is developed and implemented as the current uncertainty is damaging to communities in itself. However, this reinforces our opinion that the Basin Plan must be balanced. That is the only way we can prevent constant tinkering at the edges that will inevitably occur if the Plan is unbalanced or, worse, is open to legal challenge due to the open interpretation of the water Act.

Irrigation communities need stability and certainty so they can continue to provide food and fibre for the nation and the world.

The Guide to the proposed Basin Plan is a top down, single response approach which in Murray Irrigation's opinion needs to be dramatically revised in a collaborative manner between Governments and the community.

Signed

Anthony Couroupis
General Manager

Achieving Sustainable Agriculture

Murray Irrigation is the Implementation Authority of one of Australia's largest integrated environmental programs called the Murray Land and Water Management Plans. Since commencement in 1995 this program has made outstanding on-ground achievements investing \$106M of Government funds with the Community contributing \$544M. A summary of these achievements is outlined below.

Program	Purpose	Achieved
 <p>Whole Farm Plans</p>	A blueprint that integrates the farm's irrigation systems, native vegetation and other features. A whole farm plan sets the framework for the property to be environmentally and economically productive.	1,174 whole farm plans have been fully completed.
 <p>Irrigation Recycling</p>	Establish systems to recycle and reuse excess farm irrigation water. These systems reduce accessions to the watertable and improve water use efficiency.	908 recycle systems have been fully completed.
 <p>Wastewater Storage</p>	Ensure irrigation waste water from paddocks can be drained, stored and reused in the event of heavy rainfall. To reduce waterlogging, watertable accessions and prevent poor quality drainage water leaving the farm (eg fertiliser or pesticides) and polluting natural waterways.	679 wastewater storage systems have been fully completed.
 <p>Perennial Vegetation</p>	The establishment of perennials such as saltbush and lucerne to reduce rainfall accessions to the watertable.	22,787ha of perennial vegetation to reduce salinity has been established.
 <p>Native Vegetation & Ecology</p>	Protect and enhance native vegetation to improve biodiversity of local flora and fauna. Native vegetation will also intercept rainfall before entering the watertable and provide storage for carbon.	17,722ha of native vegetation has been protected and enhanced. Wetlands in the sub-regions of Denimein and Cadell have been identified and mapped. Over 2,725ha of wetlands have also been watered in partnership with the Murray Wetlands Working Group.
 <p>Education</p>	Inform and motivate the community about best management practices for natural resource management. This includes a formal 4 day education program called the Irrigation Accreditation Course and attendance at public education events such as field days and information seminars.	1,480 holdings have attended the Irrigation Accreditation Course. Over 160 public education events held with more than 5,000 participants.
 <p>Stormwater Management</p>	Large parts of the region are very flat with minimal natural drainage relief. Construction of stormwater escape channels allows water ponded after rainfall to drain away. Stormwater drainage is essential to reduce waterlogging and groundwater accessions.	234km of stormwater drainage systems have been established with construction consistent with MDBA standards.
 <p>Research & Development</p>	Investigate and develop solutions to natural resource management issues. Examples include use of saline groundwater for aquaculture and weed management in direct seeded native vegetation.	31 research and development projects have been fully completed.
 <p>Sub Surface Drainage</p>	Management of shallow saline groundwater to protect farmland and minimise salinity discharge from the region.	Successful operation and maintenance of one of Australia's largest saline groundwater interception schemes the Wakool Tullakool Sub Surface Drainage Scheme. Installation of two tile drainage schemes at Green Gully.
 <p>Monitoring</p>	Active monitoring of key environmental benchmarks to measure effectiveness of program implementation. Examples of monitoring include shallow groundwater levels, groundwater salinity and discharge water quality from stormwater escapes.	Consistent monitoring and delivery of information in annual compliance reports. Reduction in the shallow saline watertables and significant improvement in discharge water quality from district stormwater escapes.