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

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

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## **Introduction**

The release of the Guide to the Proposed Basin Plan has generated real concerns about the socio-economic impacts of the proposed water cuts and created uncertainty about the long-term viability of some towns.

The recent resignation of MDBA Chairman Mike Taylor has cast further doubt over the ability of the Murray-Darling Basin Authority to handle the enormous task of delivering a balanced Basin Plan.

Murrumbidgee Irrigation welcomes the opportunity to provide a submission to this inquiry being undertaken by the House of Representatives Standing Committee on Regional Australia.

## **Executive Summary**

The cuts proposed in the Guide will have a devastating effect on communities in our region. If the Basin Plan is implemented as described in the Guide, it will have a significant impact on our ability to run an efficient irrigation system. It could also lead to large parts of the system being shut down and drive our pricing dramatically upwards.

Murrumbidgee Irrigation does not support the Guide in its current form. We believe it fails the test of good public policy and it does not meet the National Water Initiative (NWI) intergovernmental agreement standards applying to environmental outcomes. We also believe that the MDBA has demonstrated – through its management of the release of the Guide and the associated consultative process – that it is not equipped to deliver a sustainable and balanced Basin plan.

We understand that the government is committed to delivering outcomes for the environment, economy and communities without compromising any of these outcomes. We believe that the advice of the Australian Government Solicitor (AGS) underpins this objective but if the Water Act puts this in jeopardy then we support legislative amendments to remove any ambiguity.

We believe that it is possible, and technically feasible, to deliver a triple bottom line outcome and a balanced Basin Plan, through a collaborative approach between governments, community, industry and environmental groups. In the meantime, government buy-back and infrastructure programs should be improved and better co-ordinated so that they deliver stronger outcomes for the environment and Basin communities.

## Our key recommendations

1. We support calls from NSW Irrigators' Council for a review of the Water Act 2007 to address the discrepancy between the existing legislation and the intent as outlined in version 61 of the Water Bill (the final version that industry had the chance to comment on).

The Act puts international agreements (RAMSAR, etc) front and centre and seeks to optimise economic and social outcomes only after providing for these agreements and the environment.

Version 61 of the Water Bill sought to ensure that the "allocation, use and management of the Basin water resources is conducted in a sustainable and efficient way so as to optimise economic, social and environmental outcomes" and only then (and without limiting this objective) seeks to protect and restore the environment.

2. The Australian Government should continue implementation of the \$3.1 billion water buy-back and \$5.8 billion water savings and infrastructure programs, but be more judicious in implementing them.

Specifically we believe that the existing approach of using tenders is a blunt instrument made worse by the fact that it is not coordinated with infrastructure programs. The current approach of using tenders should be suspended until there is greater clarity around the Basin Plan. In the interim, government can continue to purchase water for the environment through structured buy-backs in concert with rationalisation of infrastructure.

In general, the government approach should include opportunities for water-savings, infrastructure investment and innovative water products outside the current scope of government programs. This includes using some of this package of Commonwealth funds to underwrite non-flow options such as environmental works and measures.

3. In addition to a re-think of what a realistic timeframe might be in order to deliver a balanced Basin Plan the following steps should also be considered as essential for the revised Basin planning process:
  - a) Undertake a detailed assessment of the current state of the Basin's environmental assets, people and communities. This assessment should also examine trends over time, highlight important relationships and detail specific problems that have emerged and areas for improvement
  - b) Establish clear and assessable targets for triple bottom line outcomes and define what is meant by a healthy river system, strong communities and strong food production. These targets should be set within clear longer term objectives (in the case of a healthy river system not just as a defined volume of water for environmental flows - we need to be clear about specific environmental assets, the improvements we need to see and the mechanisms for achieving them and then we need to transparently report on success)
  - c) Identify critical factors and issues that are currently preventing the achievement of triple bottom line objectives under the Basin Plan. This process should include a frank and transparent assessment of what has or hasn't worked up until this point and it should examine potential policies, programs and projects that could address any constraints (including direct investment in environmental improvements)

- d) Develop a better decision-making framework that will deal with trade-offs and will optimise outcomes for the environment, the economy and the community
- e) Publish a draft report that is succinct and synthesises the key issues, implications, findings and recommendations. This needs to be easily understood and accessible by all those who will be impacted by any proposed changes and used as the basis for a new approach to community engagement
- f) Commit funding to ongoing monitoring of environmental and community impacts in order to inform decision-making.
- g) Adopt an adaptive management approach as we move forward - if strategies are not working and targets and triple bottom line outcomes are not being reached, then we should be prepared to go back to the stakeholders and discuss a different approach (without compromising investment confidence)

One of the first steps we could take is to focus on water currently held by the Commonwealth Environmental Water Holder under current programs and monitor its management and the outcomes before committing to further action

- h) Develop and implement a properly structured community engagement program that enables active community participation in reformulating the Basin Plan (including small workshops, online forums and stakeholder capacity building initiatives).
4. A roll-out of a final Basin plan in 2019 across all Murray-Darling Basin states and territories (this is consistent with the earliest opportunity for implementation in Victoria and would necessitate a five year roll-over of water sharing plans in NSW currently due for review in 2014).

## Our perspective on the MDBA's Guide to the Proposed Basin Plan

The Murray-Darling Basin Authority (MDBA) has been charged, under the Commonwealth Water Act 2007, with developing a Basin Plan for sign-off by the Australian Government. Time delays, voluminous amounts of questionable material, unbalanced recommendations, and a consultation process that provided few answers and many excuses have left Basin communities angry and frustrated with the process.

Murrumbidgee Irrigation (MI) does not support the Guide in its current form. We believe it fails the test of good public policy and it does not meet the National Water Initiative (NWI) intergovernmental agreement standards applying to environmental outcomes (Sect. 78 and 79).

The response from communities and government since the release of the guide strongly suggests that there are some serious deficiencies that need to be addressed. The majority of the 20,000 people across the Basin who attended the consultation sessions have made it clear that they support a healthy environment but not at the expense of regional communities.

The Minister for Sustainability, Environment, Water, Population and Communities, acting on advice from the Australian Government Solicitor (AGS), has made it clear that the MDBA must take a triple bottom line approach in the Basin Plan. The Minister has stated that he wants the plan to deliver a healthy river system, food production and strong communities. If this cannot be achieved within the confines of the current Act then there must be legislative changes.

The resignation of MDBA Chairman, Mike Taylor was another telling indictment on the process so far. In his media statement, Mr Taylor made it quite clear that there are still significant issues with the legal interpretation of the Water Act. In relation to the development of a sustainable Basin Plan he said "while the Authority has an important part to play, it is neither empowered nor equipped to undertake the entire complex task."

In our view the Guide makes little or no attempt to explore the central relationship between socio-economic and environmental assets and conditions over time. Key omissions include:

- A full accounting of the water recovery programs throughout the Basin (surface and groundwater) since the introduction of the Murray-Darling Basin (MDB) Cap, and analysis of results
- The failure to identify and analyse the full range of factors (water and non-water) that contribute to ecosystem problems
- The over-reliance on broad ratings of hydrological and ecosystem health. More specific data is required if the objective is to optimise ecosystem outcomes.<sup>1</sup> Also the ratings were determined at the height of the worst drought in recorded history in the Basin (from 2004 to 2007). It is dangerous to draw structural conclusions based on data from a cyclical downturn<sup>2</sup>

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<sup>1</sup> These problems are subsequently exacerbated in the Guide when it uses just three broad ratings to specify hydrological health targets. Good is when average flows exceed 80% of "natural" flows, moderate is when average flows range between 60% to 80% of "natural" flows, and poor is when average flows are less than 60% of "natural" flows.

<sup>2</sup> Environmental assets and services, like people and their assets, suffer significant declines during drought, and other natural disasters.

- The failure to estimate an optimal condition of either ecosystem or river flow health given the massive changes that have taken place since the system was regulated. A ‘without development’ benchmark indicator of ecosystem health in a highly regulated and altered river system could be dangerously misleading.

The Guide does not provide overarching objectives for the Murray-Darling Basin, in terms of its environment or its people. The primary justification for intervention continues to be a qualitative evaluation – without drastic action the Basin environment will seriously decline or fail, and take most inhabitants along with it (based largely on the ratings analysis and other snapshot evaluations). There is little science<sup>3</sup> provided to justify such a strong conclusion. Our assessment is based on the following:

- Basin-wide sustainable diversion limit (SDL) targets are set with reference to objectives for hydrological health rather than environmental health as required by the Act. However, hydrological health is just one of many factors that contribute to environmental health. The current method used in the Guide has eliminated environmental objectives as well as socio-economic considerations from Basin-wide objectives
- The Guide does not sufficiently specify targets for individual environmental assets to enable stakeholders to understand the vision or to make an environmental manager accountable for performance. There is no pathway for targets to meet objectives
- The objectives and targets for individual assets and services are not linked to the achievement of Basin-wide outcomes (not least because the Basin-wide water recovery is based on hydrological rather than environmental health).

The Guide considers just one option to deal with hydrological health (which it assumes equates to ecosystem health), namely the transfer of very large volumes of water from existing water users to the Commonwealth environmental water holder. It fails to identify and evaluate the range of strategies available to meet the needs of additional water for the environment including investment in water savings, improvements in river management, and ‘works and measures’ to deliver environmental objectives. This is inconsistent with a triple bottom line approach.

The Guide fails to establish a transparent and workable decision-making framework to evaluate all strategies (policies, programs, and projects) to deliver objectives and a longer-term vision. This framework would require ecosystem and socio-economic modelling that is able to deal with trade-offs and the optimisation of outcomes for both the environment and communities.

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<sup>3</sup> Science is used here to define the statistical, ecological, economic, or hydrological fields of study used in the Guide.

## **Understanding the region and the role we play**

### **The Murrumbidgee Irrigation Area (MIA)**

Established in 1912 following the commissioning of Burrinjuck Dam in the Snowy Mountains, the MIA was conceived by the government of the day as a purpose-built scheme, designed to feed and provide employment opportunities for a growing nation. Although some things have changed over time including a growing awareness of and responsibility for our natural environment, the original vision for the MIA is as important today as it was 100 years ago.

The MIA was constructed as a gravitational irrigation system near the Murrumbidgee River at Yanco. Further expansion occurred in the 1970s with the completion of the Snowy Mountains Scheme and construction of Blowering Dam. Today, the MIA is home to over 50,000 people with the majority of jobs tied inextricably to water supplied by Murrumbidgee Irrigation (MI) to farms and industry. The MIA is one of the most diverse and productive regions in Australia, contributing over \$3 billion annually to the Australian economy.

### **Murrumbidgee Irrigation (MI)**

In 1999 the MIA (and Districts) was formally separated from NSW Government ownership and MI now operates as an unlisted public company (limited by permanent shares) owned by the irrigators we supply. MI is one of five privately owned irrigation companies in NSW.

Our core business is water management. We provide irrigation water and drainage services to the MIA. The Company manages \$500 million of infrastructure assets, has an annual turnover of around \$50 million and services over \$2.5 billion in water entitlements.

We have a proven track record in the water delivery and drainage business. Since taking over from the NSW Government, MI has achieved a 43 per cent real reduction in the costs associated with providing water to our customers.

The MIA covers an area of 660,000 ha of which an average of 120,000 ha is irrigated. The company employs 180 staff, with offices in the towns of Griffith and Leeton.

MI operates over 3,500 km of supply channels, and 2,160 km of drainage channels. The integrated supply and drainage system gives us the strategic advantage of being able to re-use a majority of water within the area. Our Integrated Horticulture Supply (IHS) program is currently refurbishing 230 km of open channels with a piped, pressurised system for improved water use efficiency.

## The Terms of Reference

### **1. The direct and indirect impact on regional communities including agricultural industries, local business activity and community wellbeing**

#### **Cuts will have a dramatic impact on the MIA**

The Guide has recommended range of reductions in water use for the Murrumbidgee Valley that are so high that if implemented, will have a devastating effect on communities in our region, and across the Basin. These cuts are based on the premise that the environment must take priority and the Guide does not give sufficient regard to the impacts on people and communities.

Most water use in the Murrumbidgee Valley takes place below Narrandera in the South-West region of the Valley. This encompasses the Murrumbidgee Irrigation Area, the Coleambally Irrigation Area, and river pumpers from Narrandera to Balranald. This area has a vibrant economy based largely on irrigation production, processing of that production, services to agriculture, retail services, and other economic and social service industries.

If we examine for example, the lower end of the sustainable diversion limit (SDL) scale, the permanent reduction in water use of 665,000 ML in the Murrumbidgee Valley after allowing for the 'credit' of 64,000 ML would likely require a reduction of approximately 270,000 ML from the MIA. In addition to estimated reductions of 100,000 ML already delivered by MIA farmers (largely ignored by the MDBA in the Guide) this means that average annual farm use would need to fall to about 370,000 ML from its average annual historical use of about 750,000 ML. In other words, on-farm use of water in the MIA will need to decline by about 50 per cent in order to deliver the MDBA minimum target of a 32 per cent permanent reduction.

A reduction in average annual on-farm water use of approximately 370,000 ML would reduce GVIAP by almost \$300 million per year and direct on-farm employment by 2,500 full time equivalent (FTE) jobs.<sup>4</sup> The corresponding reduction in the direct value of on-farm productive assets is estimated at \$1 billion. The estimated indirect impacts on urban communities would mean total FTE job losses of 4,500,<sup>5</sup> and the loss of 12,500 people from the region.<sup>6</sup> The reductions in urban assets (including house values, business, and community assets) would likely be much higher than \$1 billion.

These are losses that the MIA region cannot afford. Towns such as Leeton, Griffith and Coleambally will be disproportionately affected, and the social hardship is likely to be devastating.

These estimates are in line with the data provided to the MDBA by ABARE, Marsden Jacobs and Associates and Judith Stubbs and Associates. Further modelling, consistent with taking a triple bottom line approach to the Basin Plan needs to be conducted.

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<sup>4</sup> The GVIAP estimate reflects the average GVIAP per ML in the Murrumbidgee Valley in 2008-09 (ABS Catalogue 4610.0.55.008, "Experimental Estimates of the Gross Value of Irrigated Agricultural Production, 2000-01 to 2008-09). The estimate of 2,500 job losses reflects an estimate that GVAP of about \$120,000 was required to support 1 FTE job on-farm from data in the ABS Agriculture Census, 2006.

<sup>5</sup> Typically indirect estimates are of the order of 2 times direct impacts. For instance the ABS estimates a multiplier of 1.828 for agriculture generally (ABS Census, 2006, NSW).

<sup>6</sup> The population losses are estimated using the ratio of population to employment losses used in "Griffith Case Study, Exploring the Relationship between Community Well Being and Production in the Murray-Darling Basin, Judith Stubbs and Associates, 2010".



## Shareholder case studies

### ***Commins Enterprises***

Despite its diversity, Commins Enterprises is heavily reliant on irrigation water and the family are extremely concerned with the scale of the water cuts proposed by the MDBA.

One of the owners of the business, Tim Commins said that having just come through a natural drought they were now facing one created by the government.

“While the drought had a huge impact on us and we took a 60 per cent loss on our income, we did try and focus our attention on what we could do differently,” Mr Commins said.

“We have spent millions of dollars on improving our efficiency and every decision we make with the farming side of our business is about maximising our returns per megalitre.

“We have also diversified our business to lessen susceptibility to drought, poor commodity prices and previous government water cut-backs, but we were gobsmacked when we saw cuts of up to 43 per cent proposed for our region.

“These cuts will affect every community, business and family in the MIA and we’ve already stopped investment because of the uncertainty this process has created.”

Commins Enterprises is a dynamic and diverse farming and manufacturing company, owned and operated by Roger and Tim Commins and their wives Leeann and Annette. Their children have recently completed university studies and have returned to the area to take an active role in the family company. They also employ 24 full-time staff.

The business comprises broadacre irrigation farms, plantation timber and stainless steel storage tank manufacturing. They are also involved in joint ventures in horticulture and liquid fertiliser production.

Commins Enterprises has a strong research and development program that is aimed at continually improving its operations, including plans to develop a farm-scale ethanol plant and grow industrial hemp.

“If this MDBA plan is approved we will have to scale back our business, cut jobs and spend less money in the local area,” Mr Commins said.

“Common sense has to prevail if we are going to get some balance in these reforms and we must consider the social, environmental and economic aspects of this plan equally.”

Source: Tim Commins

### ***Vito Mancini***

Vito Mancini is a 29-year-old, third generation farmer whose family have lived and worked in the MIA for the past 40 years. He is concerned that the proposed water cuts will have a dramatic impact on his business.

“My family is aiming to produce more than 60 per cent of Australia’s red blood oranges and we are continually trying to diversify our business to remain competitive,” Mr Mancini said.

“The MIA has the water, the climatic conditions and the right infrastructure to support our enterprise and we try to support local businesses where we can.

“The Basin Plan and the proposed water cuts come on top of ongoing pricing pressure from the supermarkets, cheap imports and a pretty tough drought.

“I can’t run my business without a proper business plan, so I don’t think it is too much to ask for the MDBA to do the same.

“Unfortunately, from what I’ve seen so far the MDBA’s plan is going to make life very difficult for us and our employees.”

Mr Mancini owns and manages 20 hectares of blood oranges at Lake Wyangan. He originally purchased undeveloped land with minimal water and has built it into a successful business. He also manages his parents’ 30 hectare farm that grows Navel and Valencia oranges. He says that the family have grown oranges for the past 40 years but they have diversified by growing new varieties including high-intensive fruits such as blood oranges. The family business has 26 employees.

Mr Mancini completed a Bachelor of IT several years ago, but returned to the family farm because he believes the region has much to offer in terms of food production.

“My father has always had a view that Australia isn’t interested in a productive and healthy agricultural sector. He told me from an early age to go get a city job because life is guaranteed but the land is in my blood and I decided to come back to farming after my studies,” he said.

“After the MDBA’s latest assault on our rural industries I can’t help but think my father has been right all along.”

Source: Vito Mancini

## **Cuts will affect our ability to run an efficient irrigation system**

The Murray-Darling Basin Plan is without doubt the most significant challenge in the history of our irrigation scheme.

Prior to the release of the Guide, MI developed a new corporate plan based on having less water available to our business and the region. At that time, we were working on the assumption that the MDBA would deliver a balanced Basin Plan. Our corporate plan is based on the premise that MI needs to grow and diversify its business and in doing this, create opportunities for customers in an environment of reduced water availability. Areas of diversification may include investment in the energy and carbon sectors in addition to water markets, products and services. We believed that by pursuing this path without losing sight of our core business (water delivery), we would not only survive a future with less water but give the business the best chance to thrive under this scenario.

Unfortunately, the Guide did not deliver a balanced recommendation, in fact far from it. Reductions of between 3,000 and 4,000 GL across the Basin and cuts of 32-43 per cent in the Murrumbidgee Valley go well beyond a 'normal' planning base and will not allow for diversification in the face of change. Reductions of this scale will turn our successful business model on its head and put essential services at risk.

If the recommendations of the MDBA were to be accepted by the Australian Government, large irrigation infrastructure businesses like ours (and many other similar, smaller businesses) will be faced with some difficult decisions. We have reduced costs by 43 per cent in real terms since privatisation of the business in 1999. Further productivity gains are possible, but we are at a point where cost reductions are unable to keep pace with the changes to our operating environment.

In real terms, reductions of the magnitude proposed by the MDBA will result in the forced closure of large tracts of the MIA, put a successful business model at risk and the businesses of many of our customers. It will also have far-reaching effects on our local communities. Despite a laudable commitment to buy-back from willing sellers only (in addition to investment in infrastructure), it is inevitable that the Guide recommendations would also result in higher water access costs for those left behind. Notwithstanding our ability to maintain downward pressure on costs over the past decade, this is not sustainable under the scenarios outlined in the Guide.

MI remains committed to working with the Australian Government to find a solution. We understand and support the improved health of the Basin environment but not at any cost. While government will ultimately make a decision on a Basin Plan it must understand the full implications of such a decision and the trade-offs required to achieve balance.

Additional detail is included in our confidential submission.

## ***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***

MI has worked with our customers and shareholders to deliver a number of significant off and on-farm savings projects in the MIA. This consultative work continues as we try to identify rationalisation opportunities that might include the sale of water entitlements and/or the decommissioning of inefficient channels, pipelines and other infrastructure.

The off-farm savings from infrastructure upgrades and improved operational efficiency have been used (in order of priority) to ensure there is sufficient conveyance water to meet service requirements, to underpin minimum requirements for high security customers, and to enhance seasonal allocations for general security customers.

The on-farm savings have been used to either increase productive capacity – thereby growing more crop without requiring additional water (entitlement) – or sold to assist in paying for the upgraded infrastructure. The efficiency savings already made by irrigators to increase production without increasing water use have not been factored into the basin plan by the MDBA.

### **On-farm water efficiency measures**

Over the last 10 years MI has provided assistance to our customers via MIA EnviroWise. This program has delivered a range of on-farm water efficiency measures including:

- Whole farm Planning and water use efficiency training
- Irrigation efficiency systems including drip irrigation
- Drainage recycling and land forming works.

MI manages the program which has been jointly funded by landholders (\$103 million 'in-kind') and the NSW and Australian Governments (combined contribution of \$18.3 million).

### **Off-farm water efficiency projects (current or complete)**

In April 2010, Senator Wong announced Commonwealth funding of up to \$50 million for MI to replace part of our ageing concrete-lined channel supply system with a modern, integrated water delivery system. This represented only a part of the overall funding of \$272 million that was requested in the first round of the Private Irrigation Infrastructure Operators Program (PIIOP). We have sought advice on the taxation implications of the funding agreement and are now confident that the Commonwealth will deliver a workable solution to this issue.

We were disappointed that we did not receive funding for the full program of works and we have been liaising closely with the Department of Sustainability, Environment, Water, Population and Communities to submit a strong second round application. As part of this process, we have invited all of our customers to identify on-farm activities that can be linked directly to off-farm infrastructure modernisation projects.

Other off-farm projects include:

- Integrated Horticultural Supply (IHS). The IHS program has replaced ageing infrastructure with current industry best practice piped delivery systems to improve the efficiency of water deliveries to farm outlets. To date 44 km of pipelines have been constructed
- Barren Box (refer separate case study)
- Mirrool Creek Rehabilitation Project. Mirrool Creek is a natural ephemeral creek system running through the MIA that provides drainage and supply services through a channelised section of the creek. The rehabilitation project will deliver improved ecological outcomes and a more efficient supply and drainage system via the revegetation of the natural creek system and the re-construction of channelised section of the creek. It is estimated that the project will deliver savings in the order of 6,000 ML via confining supply and drainage flows within the channelised section, while allowing natural flood events to inundate the surrounding creek system and wetland
- SCADA implementation for the main canal systems. Supervisory Control and Data Acquisition (SCADA) provides real-time control and monitoring, as well as accurate and automatic data transfer from sites across the MIA system to improve efficiency in business operations
- Escape flow management. This project involved increased monitoring and automation of major escape flows resulting in less water escape flows to the drainage system and hence improved overall system operating efficiency
- Drainage capture and re-use. This project involved identifying strategic sites within the drainage system for the capture and re-distribution of drainage water to the supply system. Implementing this project reduces end of system flows that are lost to the system
- In-system storages. Two in-system storages have been constructed at strategic locations that improve the operating efficiency of the system via the capture and re-use of operational mismatch within the supply system.

### **Our proposed off-farm water efficiency projects**

The Wah Wah stock and domestic project will supply stock and domestic water to landholdings located to the west of Barren Box Storage and Wetland, covering an area of approximately 300,000 hectares. The aim of the project is to replace the existing open channel system with a current generation pressurised and piped stock and domestic system (including pump stations, water storages and new supply points). It is expected this project will save 10,000ML of water annually. This project will form part of our Round 2 submission under the PIIO.

Irrigation water supply infrastructure in the Lake Wyangan catchment needs urgent refurbishment, replacement or decommissioning. This project involves planning, design and implementation of a new water supply to the Lake Wyangan catchment that will provide for the planned transition of the southern section of the catchment to urban development. This will also allow other areas with higher agronomic potential to be irrigated in the future. The project has multiple activities and objectives and it is expected to save 6,000 ML of water annually. This project has been approved by the Commonwealth under Round 1 of the PIIO program and awaits final sign-off.

The key objective of our system rationalisation program is to reduce the geographic footprint of irrigation infrastructure in the MIA, while still providing the level of flexibility and service levels required to improve on-farm efficiencies from changes to farm layouts, cropping regimes and customer preferences for increased flow rates. This project will form part of our Round 2 submission under the PIOP.

A component of our pipeline program is to gradually phase in a piped raw water delivery system to replace the inefficient open channel infrastructure (concrete and earth) which has serviced much of the original gazetted horticultural zones of the MIA. Pipelines will comprise of a mix of gravity, low head, and high pressure systems, determined by the outcomes of stakeholder engagement.

### **Our thoughts on a way forward**

Leaving aside the deficiencies of the Guide and based on the recent commitment by the Australian Government to deliver wins for the environment, economy and communities without compromising any of these objectives, there are a range of solutions available to assist in achieving this goal.

#### *1. We can combine buy-back and infrastructure programs*

While we believe government buy-backs together with infrastructure investment for water savings is the best way to recover water for the environment, the current approach is making service and asset planning impossible. We still need to manage infrastructure covering more than 660,000 ha despite the potential loss of significant amounts of water entitlements from the district through government buy-back schemes.

Our challenge is to facilitate a more orderly reconfiguration of the Murrumbidgee Irrigation system without threatening the viability of our customers. A joint program of investment in new-age infrastructure and rationalisation of redundant infrastructure is critical, if we are to improve and maintain existing levels of service in an operating environment with less water.

In November 2009, we developed a submission to the Commonwealth's Private Irrigation Infrastructure Operator's Program. From a funding bid of some \$270 million we received only partial funding of \$50 million for the reconfiguration of the Lake Wyangan system and generation of water savings. This was committed by the Commonwealth in April 2010 but to date has not been received because of associated taxation issues. We have worked closely with the Commonwealth and remain confident that these issues will be resolved in the near future.

If we are to adequately prepare for a future with less water, in a way that does not result in a cost base that is unaffordable for those remaining in business, then a single program combining elements of both government programs must become reality.

#### *2. We can look at opportunities outside the current program scope*

MI has runs on the board when it comes to delivering outcomes for the environment without compromising other values. Returning 20,000 ML of water savings to the Snowy system through the redevelopment of Barren Box Swamp is one large-scale example. Perhaps less well known are opportunities for the Commonwealth to become a purchaser of water products outside those currently available in the market (permanent entitlement and annual trade).

*RiverReach* is one such product that we have developed with funding from the Water Smart Australia project. *RiverReach* products are contracts that enable entitlement owners to sell or term-lease water based on agreed conditions. In other words, forward sale products that allow irrigators (or other entitlement holders) to retain their licensed entitlement but forward sell their annual allocation against that entitlement for an agreed period. We estimate that this type of product could deliver as much as 250,000 ML<sup>7</sup> across the southern connected system of the Basin.

Other potential products in this veneer include buy and lease-back, options and futures. The Commonwealth should also be active in the temporary water market as both a buyer and seller.

### 3. *We can explore works and measures to improve environmental outcomes*

Options include:

- Irrigation of wetlands at critical times
- Infrastructure to manage floods
- Carp mitigation strategies
- Better land management practices
- Fish ladders
- On-route storages
- Managed 'cease-to-flows'.

There is nothing innovative in the proposed Basin Plan, unless shutting down communities is considered innovative. By their own acknowledgement at public meetings, the MDBA has not considered smart solutions to achieve environmental objectives with less water, they have simply relied on creating massive river flows to provide "overbank events" irrespective of the actual requirements for the target sites.

In the Murrumbidgee Valley, there is good evidence that all outcomes can be achieved with significantly less water. MI is collating data which supports this position for the two target assets, the mid-Murrumbidgee wetlands and the Lowbidgee floodplain.

#### **A recent historical perspective of water recovery in the Murrumbidgee Valley**

The MDB cap for the Murrumbidgee Valley is 2,358 GL on average per year (see Figure 1). Of this 150 GL was accounted by environmental flows to the Lowbidgee and 2,208 GL in user diversions. User diversions were comprised of 150 GL for Lowbidgee users, 42 GL by unregulated users, and 2,016 GL by regulated river users (including towns, industries, riparian rights holders, stock and domestic supplies, and water access entitlements (mainly irrigators)).

Since water recovery began in earnest in 2002, regulated river users in the Murrumbidgee Valley have returned 322 GL to various environmental water holders. This is approximately 16 per cent of total average annual use by regulated river users under the MDB cap (322/2016).

Of the 322 GL recovered for the environment about 114 GL has been achieved through direct water savings (approximately 35 per cent). These recoveries have no impact on the level of diversions for farm use, and no social and economic impacts aside from the sale of an 'efficiency dividend'. Water usage is able to continue at historical levels.

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<sup>7</sup> Estimate based on first hand discussions with large private and government irrigation businesses as part of the 'RiverReach' project under the Water Smart Australia program, 2009

Water sales from farm entitlements has accounted for 127 GL of environmental water recovery (approximately 40 per cent of total water recovered). In this case, the impact on the financial position of the selling entitlement holder is probably zero (having exchanged the water asset for a financial asset), however regional production has fallen by an estimated \$100 million per year on average, and indirect losses to the region are estimated at \$200 million per year. These effects have been masked by the experience of the worst drought in the region's history during the same period.

The 'other' water recovery was accounted for by uncompensated transfers from users to the environment, with the increases in environmental flows negotiated under the Water Sharing Plan for the Murrumbidgee Regulated River. These reductions meant that farmers did not receive a financial benefit for the cost of losing the water. The lost farm production is estimated at \$64 million per year and indirect impacts a further \$60 million.

These examples illustrate the advantage of investment in savings and direct environmental benefits for socio-economic outcomes, relative to water purchase and uncompensated acquisitions.

It also demonstrates that under the right circumstances, there is a strong constituency among the MIA area to participate in programs aimed at returning water to the environment. However, that support and participation will not survive proposals that are too high in cost and inequitable.

**Figure 1**

Murrumbidgee cap and major components (average GL per year)	Start	Changes to water use			Current
		Savings	Sales	Other	
MDB Cap on diversions	2,358				2,036
1 Lowbidgee environment flows	150	n/a	n/a	n/a	150
2 Total users share of MDB cap	2,208	114	127	81	1,886
i. User share of Lowbidgee flows	150	na	na	na	150
ii. Unregulated share of MDB cap	42	na	na	na	42
iii. Regulated share of MDB cap	2,016	114	127	81	1,694

Source: MI and NSW Office of Water sales records, and Water for Rivers personal communication



## Off-farm water efficiency project case study

### Barren Box Storage and Wetland

As a result of the outcomes of the Snowy Inquiry in 1998 to increase environmental flows to the Snowy River and Murray River – Murrumbidgee Irrigation explored options for water savings projects. The aim of these projects, which continue today through our modernisation program, is to ensure the sustainability of the MIA with a focus on redeveloping the irrigation infrastructure to cope with a future with less water.

The Barren Box project was one of the water savings projects identified and modelling determined that 20,000 megalitres (ML) of water could be saved and returned to the rivers from reconfiguration of the site.

The reconfiguration and structural works at Barren Box and Bray's Dam focused on improving the efficiency of two key aspects of the MIA's water supply, drainage and recycling system:

1. Reducing evaporation through smaller, more responsive storages
2. Improving the ability of the drainage system to capture and reuse excess system flows from Mirrool Creek upstream of Barren Box.

Located 30 km north-west of Griffith, NSW and covering 3,200 ha, Barren Box Storage and Wetland (BBSW) is large, shallow intermittent wetland on Mirrool Creek. In its natural state it consisted of Black Box woodland and lignum shrub land and only contained water for short periods of time after excess rainfall. The reconfiguration project is one of the largest water infrastructure projects in regional Australia specifically focused on the environment.

The major outcomes for the project included:

- Reduced water evaporation and forced releases to the lower Mirrool Creek floodway, saving on average 20,000 megalitres annually which has been returned to the Snowy River without impacting on any irrigator's entitlements
- Significant benefits for the environment through the restoration of more natural flow regimes to the site and return of flows to the upper reaches of the Snowy River, as well as reducing drainage to the lower Mirrool Creek environment which was causing degradation to the ecosystem
- Improved management and efficiency of the water storage and reduction in downstream flooding
- Improved water quality for downstream users (Wah Wah Irrigators)
- Preservation and enhancement of local sites of indigenous cultural significance
- The generation of considerable social and economic benefits for the local community by ensuring the continuation of sustainable irrigation in the MIA.

The project involved:

- Constructing an 'active' storage cell, volume of 24,500 ML (40 per cent)
- Constructing an 'intermediate' storage cell, volume 4,500 ML (10 per cent)
- Preserving 50 per cent of the site to a natural ephemeral wetland - 44,000ML (50 per cent)
- Widening the Wah Wah main channel
- Constructing a 2,000 ML en-route storage adjacent to Bray's Dam on Mirrool Creek, which will deliver significant water savings in its own right.

### **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 direct measures of water market operations and infrastructure spending to deliver a sustainable Murray-Darling Basin environment could be complemented by other initiatives including:

#### *1. Research and development (R&D)*

The key role of water use efficiency suggests that there may be significant benefits from investment in R&D to improve water use efficiency on-farm, in-systems, and in delivery to environmental assets.

Firstly, R&D on-farm is mainly conducted through industry-based research centres, however the level of support is based on annual levels of production. It would seem perverse if the level of industry R&D were to decline at the very time that we, as a nation, need it most.

Secondly, there seems to be little R&D directed at improving water use delivery within river systems. This function is left to the agencies that are providing water delivery services or that manage river operations (on behalf of the environment and users). Usually they have few resources to devote to R&D. Many opportunities for improvements through works and measures may be lost because there is not sufficient investment in this area.

Thirdly, given the current knowledge constraints associated with the Basin Plan, R&D directly focussed on the environmental issues of the Basin Plan would likely yield major benefits. One of the benefits could include determining the response of basin environmental assets to additional water and identifying least cost ways to deliver targeted environmental responses.

Finally, governments have historically avoided the funding of on-going monitoring through R&D programs. The guide to the Basin Plan identifies significant deficiencies in the data, which in our view is a direct function of withdrawal of investment in monitoring over time. Long term programs are required, not short term project-based research.

#### *2. Improved Commonwealth and State Government co-ordination*

A large number of agencies associated with natural resource management activities have a major bearing on the state of the MDB environment. These include fisheries, agriculture, environmental protection, forestry and national parks and they are spread across state and federal jurisdictions. If an independent authority is to be able to tackle the MDB environment from a triple bottom line perspective then it must be able to tap into such agencies regularly to exchange information, assist in the formulation of projects, and coordinate implementation (including the management and use of environmental water).

The establishment an inter-governmental agency may be worth exploring as a means to improve coordination and resource allocation.

### 3. *Taxation*

It is extremely rare that taxation issues do not become very important with respect to implementing a program that is as far-reaching and large as the Basin Plan. The Australian Tax Office (ATO) should be involved early so that tax issues can be dealt with rapidly and transparently. There is also the possibility that tax incentives may be a better way to deliver some of the objectives of the infrastructure program rather than direct investment by governments. For example, tax incentives for delivery of specific environmental outcomes critical to Basin health may be more efficient than one-off projects.

## Conclusion

The proposed Basin Plan is neither innovative nor visionary. The plan will facilitate the displacement of communities on a scale rarely experienced in Australia and result in impacts beyond the boundaries of a Basin which produces one third of Australia's food supply.

Even under ideal circumstances such a program would be extremely ambitious and very risky. Unfortunately, most of the scientific community and even the MDBA, acknowledge that our understanding of environmental water management is embryonic. Our databases and models are inadequate and in some cases highly disputed and we are clearly over-reliant on so called water 'experts' (over 1,800 reports and \$47 million in consultant's fees on the Basin Plan alone is clear evidence of this).

Political expediency has brought the basin planning process to a point of near collapse but there is time to get this right. The Murray will not die tomorrow and it will not die in the next twenty years. Since the early 1990's the Armageddon theorists have called for urgent action to avoid imminent system collapse. Two decades on and the system remains no less resilient than it was back then. During the current floods we have seen remarkable recovery of areas and species once written off as "beyond salvage". What we need is a balanced plan based on common sense. We must take into account the needs of environmental assets as well as the needs of all farmers, workers, businesses, industries and towns.

Recent history reminds us that well-intentioned national programs have failed because of haste and inattention to detail. Sustained incremental improvements will ultimately be more beneficial than one-off fixes.

A poorly prepared plan will do more harm than good and it will impact all Australians.

## **Attachments**

## Attachment 1: Extract from the intergovernmental agreement under the National Water Initiative

### Integrated Management of Environmental Water

#### Outcome

78. The Parties agree that the outcome for integrated management of environmental water is to identify within water resource planning frameworks the *environmental and other public benefit outcomes* sought for water systems and to develop and implement management practices and institutional arrangements that will achieve those outcomes by:

- i) identifying the desired *environmental and other public benefit outcomes* with as much specificity as possible;
- ii) establishing and equipping accountable *environmental water managers* with the necessary authority and resources to provide sufficient water at the right times and places to achieve the *environmental and other public benefit outcomes*, including across State/Territory boundaries where relevant; and
- iii) optimising the cost effectiveness of measures to provide water for these outcomes.

#### Actions

79. Recognising the different types of surface water and groundwater systems, in particular the varying nature and intensity of resource use, and recognising the requirements to identify *environmental and other public benefit outcomes* in water plans, and describe the water management arrangements necessary to meet those outcomes (paragraph 35.ii) refers), the States and Territories agree to:

- i) establish effective and efficient management and institutional arrangements to ensure the achievement of the *environmental and other public benefit outcomes*, including: .....
- ii) where it is necessary to recover water to achieve modified *environmental and other public benefit outcomes*, to adopt the following principles for determining the most effective and efficient mix of water recovery measures:
  - a) consideration of all available options for water recovery, including:
    - investment in more efficient water infrastructure;
    - purchase of water on the market, by tender or other market based mechanisms;
    - investment in more efficient water management practices, including measurement;  
or
    - investment in behavioural change to reduce urban water consumption;
  - b) assessment of the socio-economic costs and benefits of the most prospective options, including on downstream users, and the implications for wider natural resource management outcomes (e.g. impacts on water quality or salinity); and
  - c) selection of measures primarily on the basis of cost-effectiveness, and with a view to managing socio-economic impacts.