Submission No 44

INQUIRY INTO WATER AUGMENTATION

Organisation: Southern Riverina Irrigators

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Inquiry into the Augmentation of Water Supply for Rural and Regional NSW
General Purpose Standing Committee No. 5

Dear Committee Members,

This submission is being made by Southern Riverina Irrigators (SRI). We represent 1200 landholders in southern NSW. We are a peak lobbying organisation providing advocacy for our membership; providing a bond so that our members have a combined and stronger voice.

Membership is comprised of five landholder associations:

- Berriquin Irrigators Council Inc
- Deniboota Landholder Association
- Denimein Landholder Association
- Wakool Landholder Association Inc
- West Berriquin Irrigators Council Inc

They are all irrigators, farming within the footprint of Murray Irrigation Limited in the southern Riverina of NSW and are custodians of some 1600 landholdings covering an area of 748,000 hectares.

Our members are efficient, productive and good at their job of providing food and fibre, but they need water to do it; affordable productive water. The irrigation industry in the NSW Murray is responsible for contributing over $600 million to the gross irrigated agricultural production of the State (ABS).

With good policy, reduced red-tape and increased investment (private and public) to deliver services and value-add industries, this figure can be increased. Our region's rice mill, abattoirs, prospective ethanol plant are value added industries that help regions by giving employment opportunities for individuals, aid in community wellbeing and help the Australian economy. With innovation and developing technologies farmers would have opportunities to utilise more of their by products such as crop stubbles and would also lead to more value adding businesses.

This is consistent with the NSW Department of Primary Industries' (DPI) strategic goal to grow agricultural productivity in the state.

Water sharing plans and water market

Since the millennium drought and the implementation of the Murray Darling Basin Plan the accessibility and affordability of productive water has been severely impacted. An investigation into the appropriateness of the current Water Sharing Plans (WSP's) and rule changes in NSW, given that the Commonwealth Water Holder now has a much greater percentage of water entitlements in the state, needs to be undertaken. This investigation needs to determine the impacts of WSP's on carryover, the temporary water market and its impact on availability of productive water for the state.

As a result of the changes in water entitlement holdings, the temporary water market is no longer a place for food producers to exchange water for productive use; it is now a commodity market.

The temporary water market is proving very expensive for users of irrigation water. Speculators have made and can make huge profits at the expense of water users by buying large amounts of temporary water and selling it, for a profit when the price goes up as it becomes less available.

By withholding large quantities water from the water market large institutions and others who have knowledge of all aspects of the temporary water market can invest and make large profits from their investments.

As a result we need a transparent water market and trading system. The reporting and management of this market needs to be thoroughly investigated and a new and fairer system devised. There are many food and fibre producers relying on accurate and transparent information for crop and business planning so that productivity can be maximised with this limited resource.

Carryover

The last time that carryover rules were changed was in 2004. Since 2004 much has changed including water ownership. Now that water is no longer attached to property anyone can own water and hence carry it over from one season to the next. This includes the Commonwealth Environmental Water, who now has a much larger amount of water which can be carried over. This occupies space in the dam which was once productive water.

A thorough investigation of the carryover rules needs to take place to ensure that farmers have access to productive water as early in the season as possible. This allows for workable business and crop planning and should not be used to distort the temporary market. There needs to be transparency in who owns carryover in the dams, in addition investigations need to be made into who should be allowed to carryover water from one year to the next. Carryover is an extremely important tool for food and fibre producers. Given that anyone can own water we need to fully understand how it impacts early allocations and the temporary water market, especially in NSW Murray Valley where entitlement holders can carryover 50%.

The 2004 rule change occurred prior to the Basin Plan. The Basin Plan has dramatically changed the distribution of water entitlement holders in NSW, thus the carryover rule puts food and fibre producers at a severe disadvantage when the dams spills. This rule needs a complete makeover to bring about fairer rules for irrigators and productivity in NSW.

Demand and supply

To ensure that the state of NSW can meet the supplies for economic, social and environmental needs well into the end of this century; NSW needs to fully understand the supply and demands that will be required of this resource.

The Murray Darling Basin Plan was introduced as a political response to the Millennium Drought. It has resulted in millions of megalitres of productive water flowing out to sea. Part of the outcomes of the Basin Plan is to help solve the ecological problems in the Coorong and Lower Lakes in South Australia.

Prior to agricultural and infrastructure developments in the South East of South Australia rainfall runoff and drainage would help deliver water to the Coorong. The development of SE SA resulted in

drains been constructed, the first of which was constructed in 1863 in the lower SE. This diverts water that would have naturally drained into the Coorong out to sea. In addition a series of weirs and barrages have been constructed converting the Lower Lakes from a once estuarine system to a freshwater one.

A large amount of the water recovered for ecological targets in the Basin Plan has come from NSW and is costing the state and Australia billions of dollars in lost productivity annually. The state of NSW can ill afford to send millions of megalitres out to sea based on a political response to a problem which cannot be solved with freshwater alone.

The state of NSW must protect its people and its resources. Water is a precious resource and every drop will be needed to ensure that we have an adequate supply for consumption and agricultural production demands in the years to come. The MDBP was a federal decision. All three states signed up to the agreement, however it has become quite clear that the volumes of water required to meet the objectives of the basin plan are unrealistic. In addition the removal of productive water from the communities in NSW is having a greater impact than first anticipated.

For the good of NSW and its future NSW needs to encourage SA take a look at the causes and effects of their own decisions in regards to the Coorong, Lower Lakes and Murray Mouth (CLLMM) and help implement solutions which will benefit the whole nation.

Recommendation June 2013 Report

According to the Australian Bureau of Statistics, of the 123,091 agricultural businesses in Australia 32% of them are in the state of NSW. They have also predicted that Australia's population is to double to 46 million by 2075 and NSW will see a 35% increase in population from 7.3 million to 9.9 million. The food and fibre requirements in the next 50 years and beyond are only going to increase. Through innovation and research farmers are becoming more productive with less water.

There are simple solutions to the problems which have arisen in the CLLMM; simple modernising of infrastructure and rule changes to drainage in the SE can make a big difference to ecological outcomes that the Basin Plan is trying to achieve. Pouring fresh water down the system will not fix the problem.

Standing Committee on State Development - Adequacy of water storages in New South Wales final report states:

> Comment - The Committee notes with concern the high volume of water directed away from productive purposes in New South Wales in order to maintain the lower lakes of the Murray River in South Australia as fresh water lakes. The Committee believes that the impact on upstream users in New South Wales is detrimental and could be reduced by implementing alternative management options for the lower lakes, such as moving barrages upstream of the lakes and maintaining the lakes as estuarine. The Committee notes that New South Wales has begun to address this issue in its submission on the Murray Darling Basin Plan but believes further action is required to enable change to the management of the lower lakes with the concurrence of the Commonwealth and South Australian Governments.
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> Recommendation 13 - That the NSW Government make representations to the Commonwealth and South Australian Governments to initiate a review of the current

> management of the lower lakes of the Murray Darling Basin. This review should focus on returning the lakes to an estuarine system by building barrages upstream rather than at the mouth, thereby reducing the volume of water currently required and improving the productive and environmental outcomes for New South Wales.

This review is still needed.

Augmentation water storages

From the start the Basin Plan has been a political solution to the Millennium Drought and is having a major impact on NSW storage systems. This is contradictory to the original planning and development of these systems. NSW storages were developed to overcome the water shortages which occurred during periods of low rainfall.

The Murray Darling Commission with the rules that existed prior to the MDBP provided an adequate framework for ensuring that there were adequate resources for the environment during drought. The MDBP does not account for the management plan which was already in place. This was a well-designed water storage plan that resulted in General Security entitlements not receiving allocations in low rainfall years. This system resulted in the Murray River not running dry during the Millennium Drought. The political reaction to the drought was unnecessary and as a result the state of NSW is paying a high price, especially in the region of NSW Murray.

Across Australia large volumes are evaporated from water storages each year. The use of Managed Aquifer Recharge (MAR) would provide the state with the opportunity to reduce the amount of water lost from evaporation each year and put it to better use, socially, economically and environmentally.

Managed aquifer recharge is an intentional recharge of water to suitable aquifers for subsequent recovery or to achieve environmental benefits.

According to the National Water Commission (Raising National Water Standards Program February 2009) Managed Aquifer Recharge (MAR) is a water supply management and technology that can deliver benefits to communities to overcome the challenges faced by climate change, growing populations, enhancing waterway health and creating greener cities[1].

There are a large number of benefits to MAR as it provides effective storage for recycled water and stormwater by reducing evaporative water loss and delivering transportation and energy savings. It can be used for urban and rural irrigation as well as industrial purposes.

Research done in the Namoi Valley NSW shows its viability and the need for further work -

> 'Conjunctive use of surface and groundwater through Managed Aquifer Recharge (MAR) is underway in Australia, principally to reuse urban waste water. The opportunity for MAR in farming landscapes has received less attention and the extent this might occur using water from large flood events or dam releases has not been examined. This paper addresses that gap by drawing on the expertise of a multi-disciplinary team to provide an overview of the potential benefits and challenges to implementing MAR using water from large floods; examine the social acceptability of MAR amongst groundwater licence holders in a major

[1] http://archive.nwc.gov.au/__data/assets/pdf_file/0005/18383/Factsheet_MAR_-_Full_version1.pdf)

Australian groundwater irrigation region (Namoi Valley); and identify future research needed to underpin a thorough assessment of MAR using large flood events.'[2]

MAR is widely used internationally, examples can be seen in Managed Aquifer Recharge: concept and examples (IWMI report Managed Aquifer Recharge: The Solution for Water Shortages in the Fergana Valley.[3]

Over the past year, the Southern Riverina Irrigators have been working with Golder Associates to better understand how they have developed catchment-scale groundwater replenishment schemes and MAR in North America, and now New Zealand and how this approach could help to address the water management problems facing Australian irrigated agriculture and Australia as a whole.

Golder's has a specialised Integrated Water Management Systems team that is taking a unique and proven approach to addressing water supply and environmental flows. This is through the proactive coupling of groundwater storage, highly efficient irrigation systems and smaller, capture-dams to systems which are designed to deliver more efficiency whilst helping to achieve environmental and economic outcomes.

The opportunities for storage in the Tallyawalka aquifer were unknown only 4 years ago. Nobody knew that an aquifer could be used to reduce the massive loss to evaporation at the Menindee Lakes. Of all the ways that we lose access to water, evaporation is the least worthy. Virtually no benefit to the nation is derived from evaporation of water in lakes that could instead be used to help our growing needs for consumptive uses.

The NSW government have been conducting an intense study of MAR on the Tallyawalka aquifer.

Research already conducted on the Tallyawalka aquifer 20 kilometres east of Menindee revealed an existing body of water of up to 190 - 200 gigalitres, with a minimum of 90 gigalitres available. This could be stored and maintained underground whilst avoiding the extreme levels of evaporation found in the lakes complex.

Naturally the Tallyawalka aquifer is recharged during flood events from the adjacent Darling River. Recharge is also likely to come from the Tallyawalka creek, which runs over the top of the Tallyawalka aquifer. It is noted that the Darling River has flooded every three or four years over the last 80 years. However, relying solely on natural recharge to offset groundwater extraction is not generally considered a sustainable approach when recharge events are infrequent and insufficient to offset abstraction.

Another set of tools for recharging the aquifer involves the direct pumping or injection of water into the aquifer, using specific designed bores and pumping under pressure. The Tallyawalka aquifer should require a minimum amount of pre- treatment using expensive techniques such as reverse osmosis.

The Australian weather patterns will continue with droughts and floods. We need to find ways to augment our storage supplies. To cover the drought times and take advantage of the flooding times.

Fees and charges

[2] https://www.csu.edu.au/__data/assets/pdf_file/0007/770767/AJEM-Managed-Aquifer-Recharge.pdf
[3] http://www.iwmi.cgiar.org/Publications/IWMI_Research_Reports/PDF/PUB151/RR151.pdf)

The Murray Valley has been greatly impacted by the Murray Darling Basin Plan as well as decisions made by NSW government concerning fees and charges which our water users pay the government. In NSW irrigators pay for the operation costs of the river, those in NSW Murray pay 5 times more than any other valley and some valleys do not contribute to MDB operation costs at all. In the state of SA every single water use in the entire states contributes to the MDB operation costs. SRI would like to see a full investigation and restructure of pricing policy for water use for the whole state.

The rivers are there for everyone to use and for everyone's future. It is only fair that this cost is evenly distributed. We would also like to see a transparent account for what the government pays to use private irrigation systems throughout the state.

All water users in the state should pay MDBA charges as the plan was developed to win the votes of urban residents.

Sustainable Diversion Limits Adjustment and Constraints Management Strategy

NSW government agencies have been charged with the task of implementing the Sustainable Diversion Limits Adjustment Mechanism and the Constraints Management Strategy (CMS) for the MDBP. These are both very complicated issues and unless you live and breathe land and water management every day you could never hope to get your head around them. Local knowledge is extremely important with these issues. Genuine consultation and the willingness of government agencies to listen and understand are needed.

The volumes of water being forced and intended to be forced through the system in the Murray Valley are resulting in third party impacts. These include river bank erosion and bank slumping, trees falling into the river and over bank flows onto private property. These issues are complicated and representatives from our organisation as well as others have been reporting these to NSW DPI for a number of years.

NSW DPI has undertaken consultation processes, which as far as we are concerned have failed. A predetermined outcome has been set and the consultation process has been a tick the box process wasting the taxpayers' money and the time of those consulted. Consultation usually involves taking ideas and suggestions from those with whom you are consulting and this has certainly not been the case with the CMS.

NSW DPI has been given the task of dealing with constraints from the federal government. There is no doubt that if local knowledge had have been incorporated in the design and drafting of the MDBP then the amount of water recovered would not have resulted in a volume which cannot be safely delivered.

NSW DPI has continued on the failings of the MDBA to provide meaningful consultation by handpicking consultants they want to work with. SRI strongly recommends that NSW government processes involving consultation on water policy be reviewed. They cannot be made in isolation in city offices. They need to involve representative from grassroots organisations who are in touch with the day to day management of water resources.

Through genuine consultation NSW DPI would have the ability to take proactive steps in ensure that the demands on our precious resource well into the future can be met. This would require actively listening and working with those at the coalface; those with the local knowledge.

It is essential that the NSW agencies responsible for the management and delivery of water in NSW do so in an efficient and effective manner.

The recent announcement by the NSW government to secure Broken Hill town water supply/Menindee Lakes system will result in a pipeline from the Murray River to Menindee Lakes/ Broken Hill. This will require 10GL from the Murray system. To protect the amount of water available for productive use, and hence to achieve the goal of increasing agricultural activity by 30% by 2020, the state must consider this in the planning of the project.

Any water savings from the Menindee Lakes Water Savings Project must be used to offset against Basin Plan recovery targets. The project must see the maximum amount of offsets to reduce the reliance of the MDBA on recovering entitlements from productive water users.

In conclusion

To meet the current and upcoming needs NSW needs to look into a variety of solutions. SRI along with Murray Valley Private Diverters and Murray Irrigation Limited has developed a set of solutions. See Ten Steps to a Sustainable and Balanced Basin Plan.[4]

These could be adopted to help ensure a sustainable water supply into the future.

The adoption of these simple steps would provide greater water security to not only NSW food producers but also those in Victoria and South Australia.

The Murray Darling Basin Plans implementation has been fraught with problems. Adaptive management principles have been needed; learning as we go along. Part of this is learning by mistakes. If something is not working it needs changing or adapting.

SRI requests the opportunity to address the Committee to support the evidence provided in this Submission.

Graeme Pyle
Chairman - Southern Riverina Irrigators

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[4] https://drive.google.com/file/d/0B9zId5KcW1iQLTRJX3hGTXROLUU/view