



National Farmers' Federation

**Submission to the
Senate Standing Committee for Rural &
Regional Affairs & Transport**

**Inquiry into water management in the
Coorong and Lower Lakes**

11 September 2008



Member Organisations



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Introduction

The NFF welcomes the opportunity to provide a submission to this important inquiry (the "Inquiry"), which seeks to ascertain the volume of water that could be delivered to the Coorong and Lower Lakes (hereafter referred to as the "Lower Lakes") and options for sourcing and delivering this water. This forms the first part of this inquiry with submissions due 11 September 2008.

The Terms of Reference also provide for an inquiry into the long-term sustainable management of the Murray-Darling Basin, due for report by 4 December 2008. The NFF will provide a separate submission for the second part of this inquiry.

NFF submits that there is little fresh water that currently available for the Lower Lakes. To do so will significantly affect of the other environments of the Basin, on the operation and confidence in the water markets, and there will undoubtedly be significant social and economic impacts around the Basin. NFF also contends that there is no sufficient justification to acquire water compulsorily. Acceleration of the infrastructure package will help to ensure that productive viable irrigation sector is maintained.

Along with this inquiry, the Emergency Water (Murray-Darling Basin Rescue) Bill 2008 has been referred to this Senate Committee for report at the same time as the inquiry. NFF contends that this Bill is unjustified and any short term reactively developed interim Basin Plan will result in unconscionable perverse outcomes. NFF also contends that there are good reasons in each state for the different water entitlement, allocation and sharing regimes and that a one size fits all approach will have adverse consequences for the Basin.

National Farmers' Federation

The National Farmers' Federation (NFF) was established in 1979 and is the peak national body representing farmers, and more broadly agriculture across Australia.

The NFF's membership comprises of all Australia's major agricultural commodities. Operating under a federated structure, individual farmers join their respective state farm organisation and/or national commodity council. These organisations collectively form the NFF.

Each of these state farm organisations and commodity council's deal with state-based 'grass roots' issues or commodity specific issues, respectively, while the NFF represents the agreed imperatives of all at the national and international level.

Deliverability of Water

It is now well accepted that the best estimates are that water delivered from the Northern Basin will lose around 80% to Menindee Lakes, and a further 50% between Menindee Lakes and the Lower Lakes. In simple terms, approximately 90% of the water will be lost. This

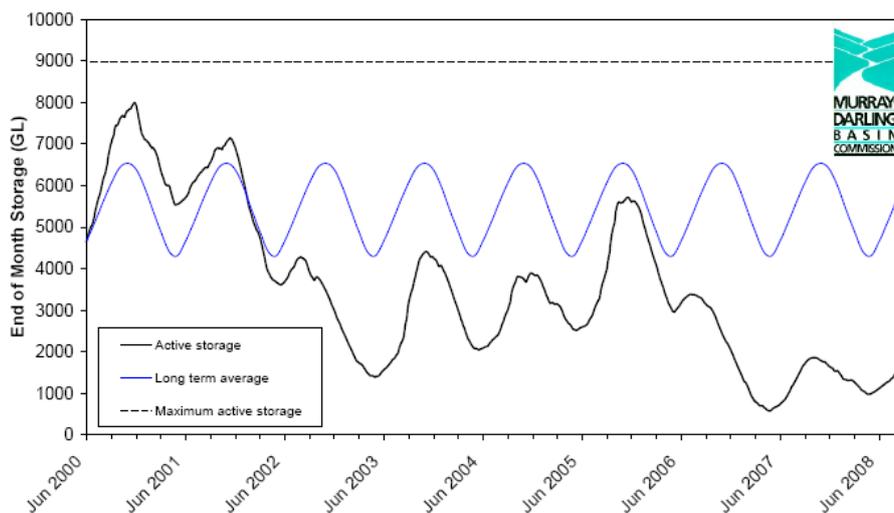
makes delivering water from the northern Basin inefficient and consequently an expensive and short-term option, unless the water can be piggyback on other freshes in the system (e.g. following tropical rains over summer). The latter, however, may not be in time to assist the critical situation facing the Lower Lakes.

Water sourced from the Southern Basin, while having improved deliverability, will disproportionately impact water markets, irrigated agriculture, other environmental assets and communities (see later discussion on markets).

Water Sharing

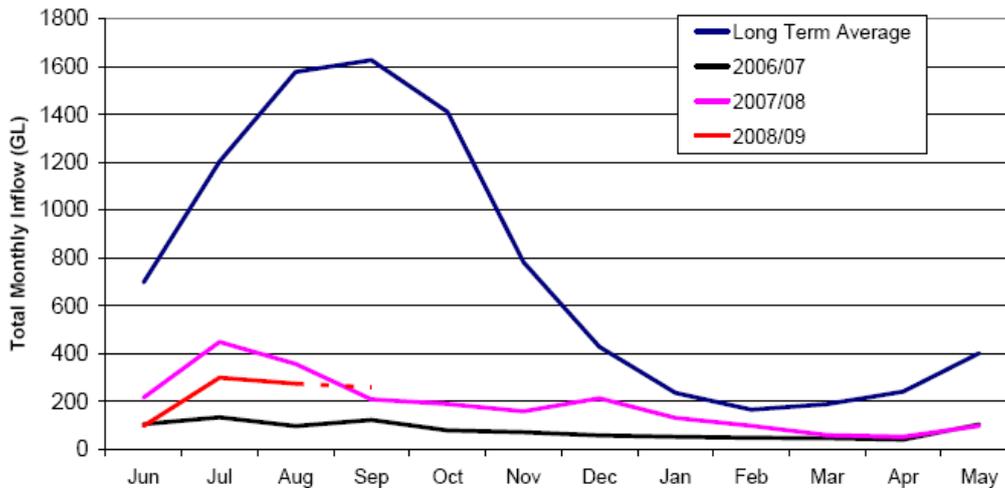
NFF submits that there is little that can be done to provide freshwater from throughout the Basin to assist the Lower Lakes. After seven years of prolonged and severe drought, water storages are at historic lows (Figure 1) and inflows remain at historic lows for the Murray (see Figure 2 below). The latter has resulted in a significant reduction in water availability for irrigators and other water dependent uses (including environmental) across the Basin. Fundamentally, the issues facing the Lower Lakes are a reflection of the dire situation throughout the Basin.

Figure 1 MDBC active storage June 2000 to August 2008¹



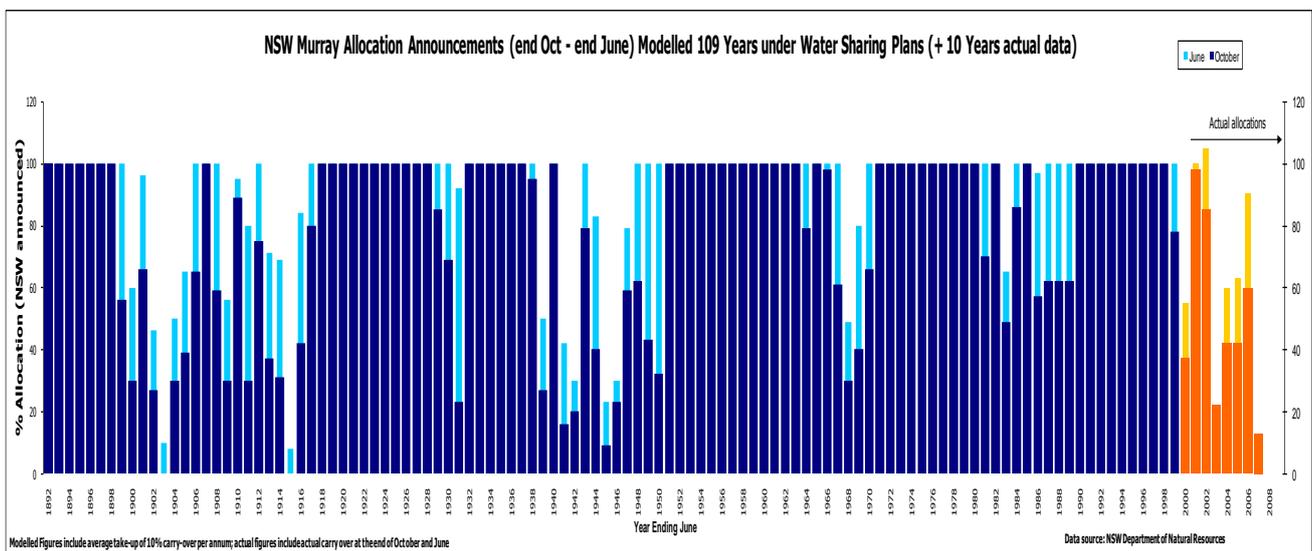
¹ Source: MDBC Drought Update 15

Figure 2 Murray system monthly inflows (excluding Darling inflows and Snowy releases)²



For the irrigation sector, and due to the different allocation regimes in each state, the NSW Murray general security entitlements were the first to show the effects of low inflows, particularly over the past 15 years (Figure 3). For the current irrigation season, the effects are being seen across all irrigation sectors. Because the NSW Murray and Murrumbidgee Valleys have a small percentage of high security entitlements to general security entitlements (around 10% of valley total entitlements), these valleys are able to issue a high percentage of allocation to high security irrigators compared to those same entitlement holders in Victoria and South Australia.

Figure 3 NSW Murray water availability (modelled and actual)



What the drought has effectively shown is that different individuals have different understandings about the way in which each state allocates water. Because of the variable nature of the NSW general security entitlement, irrigators in that state have been alerted to the information provided to them by state government departments. Over the past decade

² NSW Department of Water & Energy Critical Water Planning for the Murray Valley, Issue 17, 15 September 2008

have a good knowledge base about inflows, dam storage conditions, catchment conditions that may impede to assist run off, snow melts, Snowy scheme contributions, the major inflow months and so on. Irrigators in Victoria were similarly placed.

Few irrigators in South Australia had knowledge of interstate water sharing arrangements or how each state’s water allocation built. Preparing farm businesses for lower water allocations was rarely a consideration. They were used to receiving 100% of allocation all the time.

Like South Australia’s irrigators, it is important that the community and the Senate Committee understand the “normal” water management arrangements for “regulated water”³ in the Murray in order to understand how water is allocated and the governance arrangements around this. In general terms, the Murray-Darling Basin Commission (in conjunction with the state jurisdictions) ascertain the water available to each of Victoria & NSW under the water sharing rules in the Agreement, and the water each of these states contributes to South Australia and transmission and evaporation losses. This volume is not a water entitlement as these are allocated under state legislation.

Once this is agreed, the volume of water to each state is allocated under State water sharing legislation and water sharing plans to the various uses according that state’s hierarchy, including to water access entitlements (or property rights). Generally, water is provided first to environment, basic landholder rights, town water supplies (including industrial and recreation), high security entitlements, and last of all general or low security entitlements. Irrigation Infrastructure Operators (notably irrigation corporations) may also announce an allocation of water to irrigators connected the bulk water entitlement. In addition, where IIOs can maximise their delivery system transmission losses, water can be made available as increased allocations.

The state allocation regimes have perhaps caused some confusion in the eyes of the public, particularly where one state may have “appeared” to allocate more water than other states. The following table shows the situation more clearly (also see Attachment C – which although a little dated, gives a good overview of the state differences).

Table 1 Current entitlements, water shares and allocations in the Murray Valley⁴⁵

Entitlement type	Allocation	Volume	Allocation Over all irrigation licences
Victorian high security (1292 GL)	0%	0 ML	0%
South Australian high security (718 GL)	6%	34 ML	4.7%
NSW High Security (198 GL)	25%	45 ML	2.4%
NSW General Security (1671 GL)	0%	0 ML	

As can be seen, due to the lower volume of NSW high security entitlements compared to South Australia and Victoria, those licence holders are receiving more allocation. If the small volume is applied to all entitlements, then the volume is significantly lower than South Australian irrigators are receiving. The other pertinent point is that South Australia

³ Regulated water is generally that water which is stored in dams and released according to rules for use.

⁴ Data Sources: DEWHA submission to Coorong Inquiry and 2006-07 MDBC Water Audit Monitoring report.

⁵ Note that 15 September 2008, additional resources were made available to the states and allocations increased for South Australia to 11%, Victorian High Security 6% and NSW High Security to 50%.

has allocated more water to its irrigators than appears available. The position of the NFF is that once the water is allocated to each state, how this water is sharing amongst its water users then becomes a decision for that Government, according to its particular sharing arrangements.

Contingency Planning

Over the past few years, COAG through the First Ministers', have overseen contingency planning on the Southern Basin - and this was largely about managing the Murray River; however the Goulburn and Murrumbidgee have been included when this was required.

Contingency planning primarily provides water for transmission & evaporation losses, critical human needs⁶, the environment in strategic cases, and when surplus to these requirements, other consumptive uses. This contingency planning has generally set aside the normal Murray-Darling Basin Agreement (the "Agreement") sharing rules to try to ensure that all critical human needs throughout the states were provided for.

In 2007-08, the decision on contingency planning by COAG⁷ agreed to set aside 750 GL purely for transmission losses for the Murray, from Hume Dam to the South Australian border and 50 GL for evaporation. In addition, a further 363 GL were set aside for losses inside South Australia. Critical human needs required 75 GL for the NSW Murray, 53 GL for Victorian Murray, with 201 GL for South Australia. These volumes did not provide water for towns that were not directly on the Murray River.

In order to conserve water, tributaries outflows ceased and wetlands were disconnected from the river. These actions created issues for the supply of stock and domestic water to many towns and farms. Water for farms within irrigation corporations, trusts and so on was insufficient to cover the delivery of the water. Therefore, carry over water could not be delivered.

During contingency planning, towns were required to implement restrictions. Due to state differences, it was agreed that although there were different meanings for each water level, the states agreed to implement the measures that were consistent, i.e. if Wodonga imposed Level 2, this would mean the same restrictions as a level 3 in Albury.

Figure 4 below shows the intent of the system management. As flows were to improve, contingency planning would cease until business as usual occurred. However, as history shows, this did not occur. Figure 5 shows the actual pathway of the change in contingency arrangements up until August 2007. Total Murray inflows for 2007-08 were 2220 GL⁸, meaning that contingency arrangements remained in the dark yellow zone and around the light green vertical line on Figure 5. For 2008-09, this type of information has not been released.

⁶ Each state manages its own critical human needs, which in some instances have provided limited water for critical industrial uses where these would have a significant economic and social impact on communities. Of note is NSW providing water for a piggery at Corowa and Pulp Mill at Albury.

⁷ Source: Murray-Darling Basin (MDB) Dry Inflow Overview Report to First Ministers, May 2007

⁸ 10 July 2008, MDBC media release Murray Darling Basin drought is getting worse

Figure 4 Murray System Contingency Decision Paths

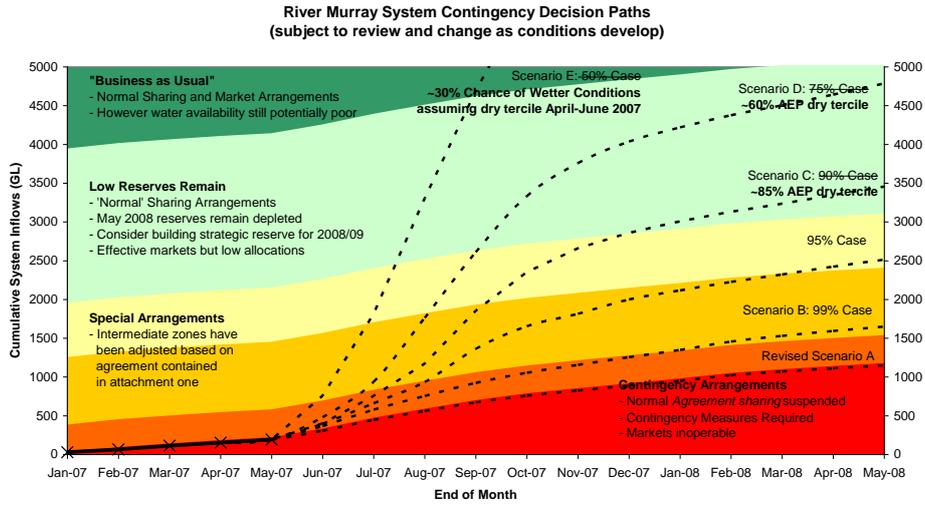
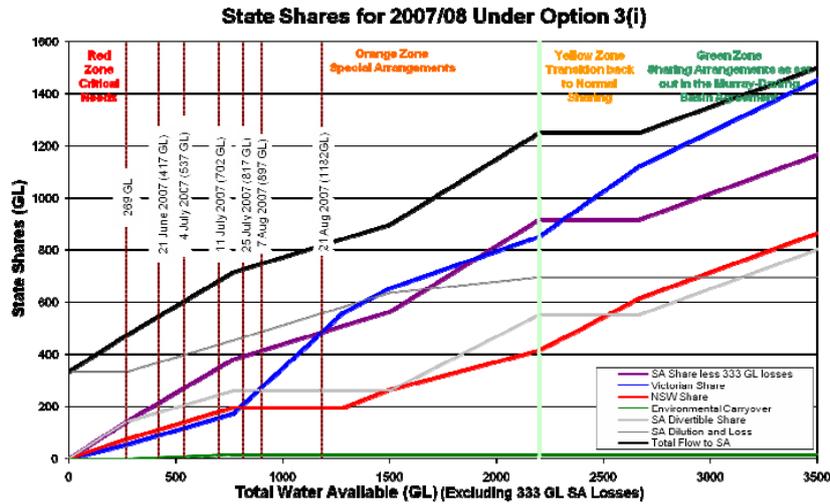


Figure 5 State Shares for 2007/08 under Option 3(i)



Ministers agreed in November 2007 to share all Murray inflows equally between the three states (with the exception of repayment of water imbalances that arose from the previous contingency regime).

The main point to note in the above sections is that use of limited water by other users or commodities cannot possibly have contributed to the current situation in the Lower Lakes.

Cap

The 1993-94 cap was implemented to restrict diversions to the level of development that applied in 1993-94. The cap was not and did not aim to prevent development itself:

“The Cap should restrain diversions, not development. With the Cap in place, new developments should be allowed, provided that the water for them is obtained by improving water use efficiency or by purchasing water from existing developments.”⁹

This misinformation unfortunately continues today.

Crops in the Basin

Often there is a catchphrase that only “if we ban cotton and rice, will the current situation improve” or alternatively, “in a future scenario of climate change and less water, we must get rid of thirsty crops like cotton and rice”. It is interesting to note that best practice management may include using more water not less, e.g. for almonds, maximum production is attained by using around 18 ML/ha – this is at around 6 ML/ha more than rice.

It is unfortunate that many Australia’s are unwilling to accept that most of Australian agriculture is at world’s best management – and this includes irrigated agriculture and the management of crops like rice and cotton.

In terms of water management, both these crops are grown on the lower security entitlements, meaning that when there is no water, these crops are not grown. While farm incomes can decline markedly, these farmers do not have to spend considerable capital expenditure on replacing vines and trees.

The current rice and cotton crops are extremely small. Any rice produced in 2007-08 was produced largely using groundwater, while cotton was produced from large unregulated events in the Northern Basin. These crops are grown by extracting water using the water entitlements legally issued to them under state legislation.

With the improvement in cereal prices, and with winter crops being the first available income, many farmers will use limited water to ensure that these crops are successfully harvested.

The driver for on farm decisions on what crops are grown will largely depend on commodity prices (currently driven by low world stocks), the water available to produce those crops (in the ground or in storage, and likely allocations), and the other relative economic considerations like labour availability, input supplies and capital and operating cash flow. The crop itself is not the driver, but its contribution to the income of the property, relative to its costs of production. In today’s annual water market prices, sale of this water to another user will also be a consideration as the most profitable use of the asset.

⁹ Source: MDBC Website. Factsheet on the Cap.

If cotton and rice were banned, it is wrong to assume that this water would be left in the river for the environment or for other users. The owner has an obligation to his farm business and his financiers to maximise profit. Therefore, the water entitlement will be used to produce another crop. It is likely, given the relative profitability of rice and cotton (and determined by its popularity in production volumes) that this water will be used for less profitable commodities.

Again, if particular crops were banned, this would create flow on effects for other agricultural products. As an example, if one rice or cotton grower were to convert his water use to say carrots, the volume of water would be sufficient to flood the market creating very low returns. Not only would that individual business suffer, but also would the significant number of other carrot producers throughout Australia. The key message here is that a diversity of crops is needed to provide sufficient for the domestic markets' needs and to allow Australia to export this surplus, adding to Australia's economic prosperity.

Cotton and rice should not be blamed for the current situation facing the Lower Lakes.

Water Reform & Water Markets

Historically, Governments allowed irrigation to flourish to underpin regional development. Then water licences were handed out to irrigators, without payment. Today, there are very few of these original licences remaining with the original recipients. With the sale of each property (either to family or new owners), the price of the land included the water licence. With the separation of land and water and the implementation of the National Water Initiative, water licences became water entitlements. This was done to ensure that Governments could no longer write off a farmer's asset without compensation and to provide the security required by farmers to underpin business viability. It is no longer good enough to accuse farmers of receiving free licences and selling them for large profits.

Since 1993-94, with the advent of the first COAG water reform process there is bilateral support for the implementation of water trade, and the removal of all barriers to trade that exist in the water market. Governments focus now on water trading to maximise the economic return to each state and the nation.

Irrigators have received this very clear bipartisan message from Governments, i.e. that water reforms are irrevocably focussed on water markets and water trade. Water trade will determine where water is used in Australia.

The one thing that will influence the water market is unpredictable intervention by Governments. A good example of this occurred in late 2006 when the NSW Government suspended the water held in individual water accounts in the Murray and Murrumbidgee Valleys, as water accounting had revealed significant shortfalls of water and an inability to meet the previously notified water allocations to high and general security irrigators. The effect was an undermining of the confidence in the water market – and because sales were in the process of occurring, the effect was felt across the entire Southern Basin.

The only acceptable intervention by Governments is when there is demonstrated market failure. In the example above, carry over water was still individually held and should be the highest property right in a dam – as this is water unused from the previous season (although there is no legislation or government policy underpinning this strong view of the irrigation sector). In reality, the NSW Government should have reduced the previously announced allocations for both high and general security entitlements, and ensured that those who required water (i.e. high security irrigators to save permanent plantings) could acquire this water from the water market. Yes, the price of water will go up and those irrigators will have paid a lot for small volumes of water – but that is a normal commercial result of a scarcity of a product.

What could define market failure – when there is insufficient water to allow the market to operate, including the water available to deliver to the end user? As a result, market failure policy is now being included in the COAG water reform agenda and Basin Plan by the inclusion of protocols for critical human needs.

Annual Water Trade

The state of the present annual water market is a reflection of the extreme scarcity of deliverable water in the Basin today. As water becomes scarcer, the price escalates and can increase to exceed the price of a permanent water entitlement. Such prices have become a norm over the last few years, particularly during the late spring or summer period. Figure 6 below shows the variability in one market – the Murray Irrigation Water Exchange.

Figure 6 Murray Irrigation All Season Yearly Comparison

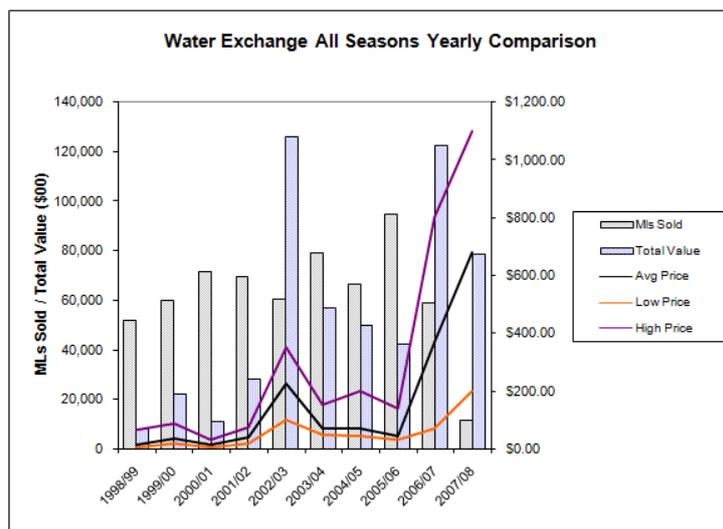


Figure 7 Murray Irrigation Water Exchange Daily Sales 2007-08

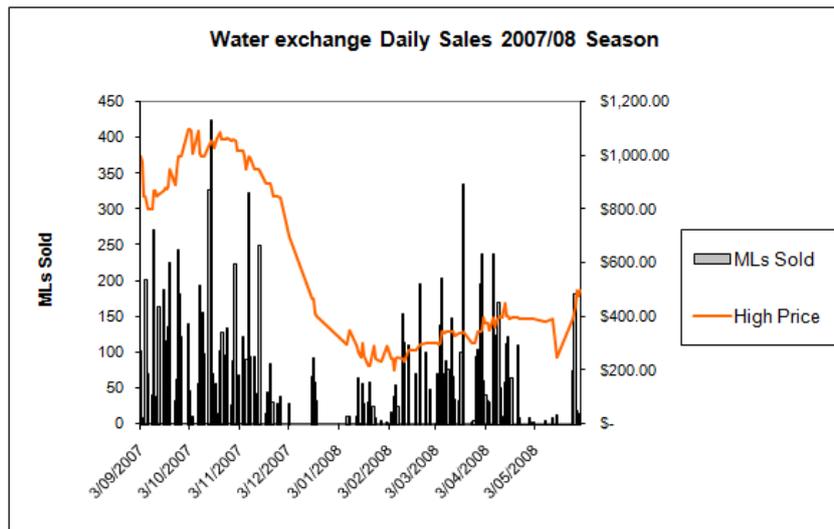
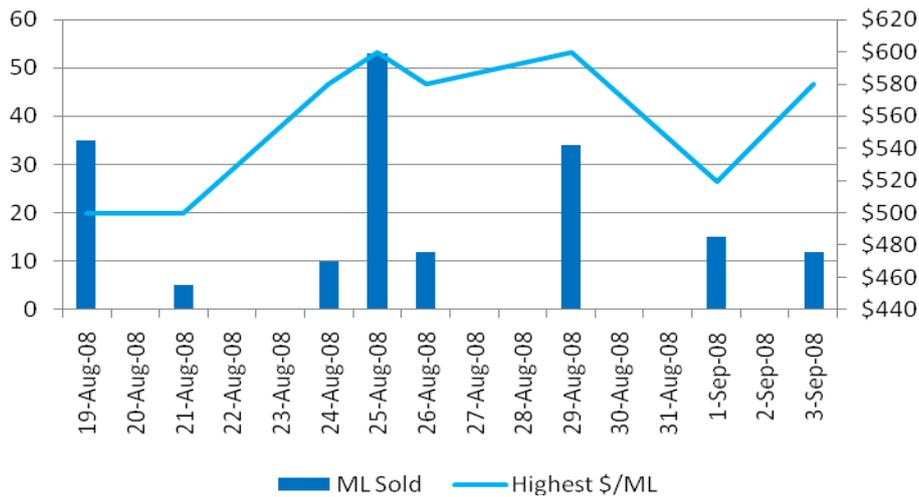


Figure 8 Murray Irrigation Daily Sales 2008-09



This water exchange has been in existence for over a decade, and in its early years was the only publicly available information source for water trades – and consequently those buying and selling water looked to, and continue to look, the Murray Irrigation Water Exchange to set the benchmark for water trades. Anecdotally, water traded on this Exchange for \$36/ML in May 2006 and water last year reached \$1200/ML. Currently water is trading for around the \$500-600/ML.

The above figures show the highly variable nature of annual water trading because of water scarcity – both within and between years – as the drought has progressed.

Any water that is available (allocated, carried over or purchased) will be required to save permanent plantings this season. At recent prices, broad acre irrigation farmers are not participants in the market. Water available to broad acre farmers, such as carry over water, may be retained for stock and domestic supplies, to finish winter crops (as these are sunk

costs and the first available income) and any small surplus will be sold as it is likely to be insufficient to produce a summer irrigated crop.

There has to be an understanding of the effect/impact of Government entering the annual water trading market to acquire water for the Lower Lakes. That annual water market provided water to keep permanent plantings alive across the Southern Basin. Unless there are Biblical rains in the next month, this annual trade will continue to provide the critical function of keeping permanent plantings alive.

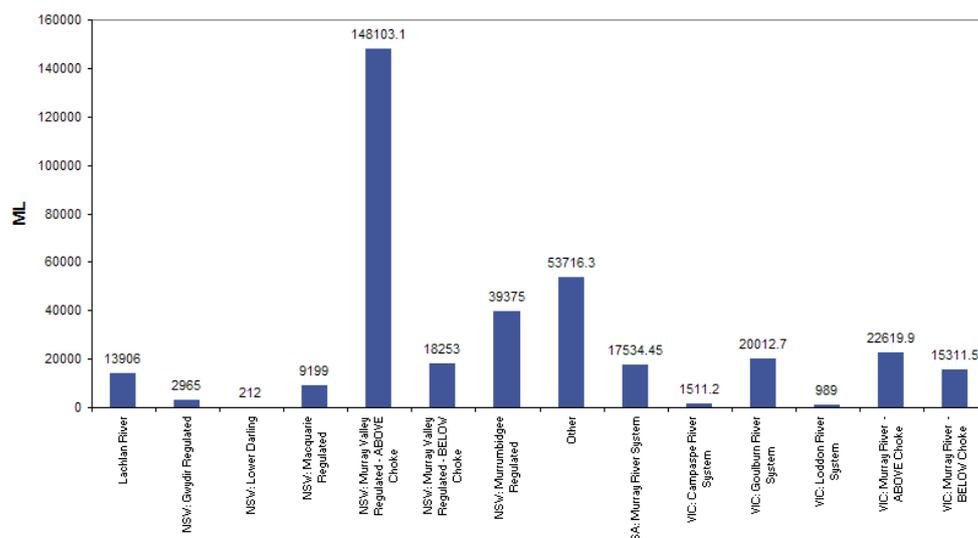
NFF supports the decision by the Federal Government not to enter the water market in this instance.

NFF also notes that some irrigators last year and this year have called for the Federal Government to assist them so that they can purchase water on the very expensive annual market. Again, NFF supports the Federal Government in not doing so. One of the tenets of the water and other reform agenda is to avoid any arbitrage in the market, and to ensure competitive neutrality. If the Federal Government were to assist some irrigators, then it would need to assist all irrigators to participate in the market.

Water for the Future Acquisition

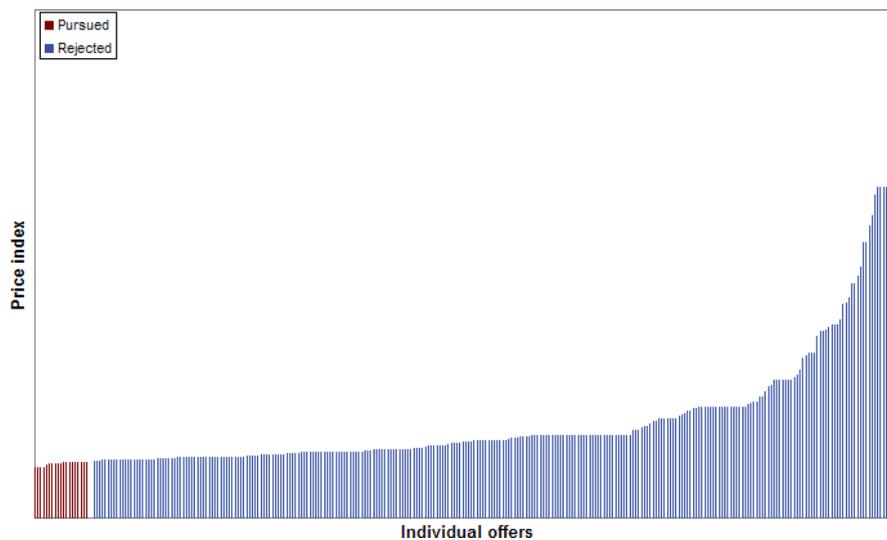
The terms of reference for this Inquiry seek to investigate alternative ways to source and acquire water¹⁰. The NFF would observe that in the recent \$50 million Federal Government water tender, 363.7 GL of water (Figure 9) was offered across the Basin. There could have been significantly more water acquired for little more cost per megalitre (Figure 9). These graphs clearly demonstrate that there is no requirement for Government to acquire irrigation entitlements compulsorily.

Figure 9 Federal Government Water Tender Offers Received



¹⁰ NFF assumes this means permanent entitlement acquisition. The previous discussion provided the views of NFF on entry into the annual market.

Figure 10 Price Index NSW Murray & Murrumbidgee Catchments



One roadblock to acquiring water is the need to recognise and consider the social and economic impact to rural communities while maintaining a vibrant irrigation sector. The danger at this point in time, are that the current pool of sellers are “stressed” sellers, i.e. due to the drought, they have no option but to sell water to either opt out of agriculture or selling a portion to repay their financiers. Many in the latter category are doing so in the hope that they can re-acquire this water latter, and to purchase water annually in the meantime.

The second roadblock is Commonwealth Government procurement policies which limit the acquisition of water to the market price of the day. As an analogy, if a corporate entity is attempting to acquire the stocks in an ASX listed company, the acquiring entity would be offering existing shareholders a premium above the market – the entity would not acquire the shares by offering the market price. Investors would rightly hold out in the hope of receiving a higher return. Government could acquire sufficient water for the environment, but must accept paying a higher price and a lower total quantity than first desired.

Water for the Future Infrastructure Investment

The acquisitions currently being processed, and future acquisitions, do not consider the recovery of water from system efficiency investment – both on and off farm. On farm efficiency investment has been little tried, but will be a large pool of available water that could be returned to the environment.

The issue for on farm investment by Governments is that this pool involves a significant number of smaller volumes of water – hence the difficulty in implementing and higher transactions costs. However, the solution is available. Irrigators are more willing to deal with their local industry or commodity organisation – and this was the focus for the Ricegrowers’ Association of Australia Inc initiative.

The RGA has implemented the only industry lead water recovery program to date with the RGA On Farm Water Efficiency Investment under the Living Murray Initiative. The major stumbling block with this initiative is that Governments are treating the project as water acquisitions, instead of an integrated package of on farm water efficiency investments. Consequently, Governments are treating this project as expensive water (round 2 averaged ~\$2500/ML) and yet have agreed to pay significantly more for other projects. In fact, from publicly available information, NFF estimates that the projects approved to date under the Infrastructure investment program have averaged over \$4,000/ML (Table 2).

Table 2 Water for the Future Infrastructure Projects – Estimated Water Being Recovered¹¹

Name of Project	Total Cost	Est. maximum savings	\$/ML
Menindee Lakes	\$497,761,000 ¹²	183.00 GL/YR	\$2,720/ML
Wimmera Mallee Pipeline	\$300,250,000 ¹³	83.00 GL/YR	\$3,617/ML
Warren Nyngan pipeline	\$12,000,000 ¹⁴	2.00 GL/YR	\$6,000/ML
Upper Spencer Gulf desal	\$320,000,000 ¹⁵	22.00 GL/YR	\$14,545/ML
Delta Electricity recycling	\$4,000,000 ¹⁶	3.60 GL/YR	\$1,111/ML
Oberon Council water reuse	\$1,000,000	0.36 GL/YR	\$2,778/ML
Food Bowl	\$1,000,000,000	112.50 GL/YR	\$8,889/ML
Tasmanian irrigation ¹⁷	\$262,400,000	160.00 GL/YR	\$1,640/ML
Harvey Water (WA) piping project	\$72,000,000	40.00 GL/YR	\$1,800/ML
Totals	\$2,469,400,000	606 GL/YR	\$4,072/ML
Uncommitted funds	\$3,761,900,000	~924 GL/YR	\$4,072/ML

Environmental Water Across the Southern Murray Darling Basin

There are a number of environmental entitlements (including planned and formal) across the Southern Murray Darling Basin. An analysis of existing programs shows over 2100 GL at full entitlement. With a number of programs underway or forecast (e.g. Water for the Future, Living Murray, Water for Rivers and other state based projects) NFF estimates that a further 3400 GL of water will become available to the environment. It should be noted that this estimation has required some assumptions, and these are outlined in the footnotes. Table 3 below and on the following pages shows this environmental water – the shaded rows relate to implemented projects.

¹¹ Based on total costs and estimated water savings from publicly available information; state priority projects included in unallocated funds

¹² Estimate maximum cost = \$97M capital works; up to \$400M Broken Hill; \$0.761 feasibility study

¹³ Estimated cost = \$300M for works; \$250K feasibility study

¹⁴ Actual total cost unknown – cost shown if Federal Government commitment

¹⁵ BHP Billiton/SA Govt project to reduce demands on Murray & provide water for Upper Spencer Gulf & Eyre Peninsula, as well as BHP Olympic Dam mine. Cost of desal plant ~\$300M. Some confusion over funding (SA Govt \$160M plus or instead of Federal Govt \$160M). Reduce Murray River water demands by 22 GL/yr

¹⁶ Unable to ascertain total cost and total water savings. Total reuse is 10 GL/yr with Fish River demands reduced by 3.6 GL/yr.

¹⁷ Includes Midlands Water Scheme (\$100M; 50 GL), Shannon Catchment Project (\$53M; 21 GL), Mersey-Forth Water district (\$32.4M; 19 GL) & NE Tasmania storages (\$77 M; 70 GL)

Table 3 Existing and Projected Environmental Entitlements across the Southern Basin

Allocation name	Year approved	Volume and main conditions	Main purpose	Key Reference(s)
Barmah-Millewa Forest EWA	1993	100 GL/yr shared by NSW and Victoria (provision to carryover up to 700 GL; can be withheld for up to 4 years)	Wetland watering	RMW operating rules referred to in DLWC (2002)
Barmah-Millewa Overdraw	2001	50 GL/yr during wetter years (around 80% of years) shared by NSW and Victoria	Wetland watering	RMW operating rules referred to in DLWC (2002)
Lower Darling River ECA	2002	30 GL/yr (Menindee Lakes must be >480 GL, and have been >640 GL since the last time it was <480 GL)	Flush blue-green algae when at high alert levels	DLWC (2002)
NSW Murray Wetlands EWA	2000	30 GL/yr	Wetland watering	DLWC (2002) NSW Murray Lower Darling Water Sharing Plan (2004)
Moira Lakes Savings	2000	2.027 GL/yr (for use in NSW Murray wetlands)	Wetland watering	DLWC (2002) NSW Murray Lower Darling Water Sharing Plan (2004)
NSW Murray Additional Environmental Allowance	2004	5.4 GL/yr (whenever the high security allocation is equal or less than 97%)	Environmental flows in the Murray	NSW Murray Lower Darling Water Sharing Plan (2004)
Murrumbidgee ECA	1998	25 GL/yr (additional volume of 25 GL/yr when allocations are <80%, increasing up to 200 GL for allocations 80% - 100%)	Water quality needs, algal bloom suppression, fish breeding, and forest and wetland watering	DLWC (2000a)
RiverBank	2006	~100 GL/yr (\$44M Federal; \$100M NSW: 2006/07 \$15M 2007/08 \$35M 2008/09 \$37M 2009/10 \$29M 2010/11 \$28M)	Restore wetlands in the Murrumbidgee (Lowbidgee), Lachlan (Great Cumbungi Swamp), Macquarie (Macquarie Marshes) & Gwydir (Gwydir Wetlands) and Narran Lakes systems. Completion date 2011).	DECC Riverbank Business Plan (2007)
Darling River Water Savings Project	2007	~63 - 187 GL/yr (savings estimated in Part 1 Report)	TBA	NWC (2007)
Victorian Murray Wetlands EWA	1987	27.6 GL/yr (2,600 ML/yr allocated to Hird and Johnsons Swamps)	Wetland watering and salinity control	DSE (2002)

Allocation name	Year approved	Volume and main conditions	Main purpose	Key Reference(s)
Gunbower Forest EWA	1997/98	25 GL (one in three years) and 40 GL (one in twelve years)	Top up and extend small to medium sized floods, and cause low-level flooding after two years of being dry	MWEC (1997)
Goulburn River EWA	1995	80 GL in November in wet years (around 70% of years). Additional 25 GL when inflows to Lake Eildon have been high and the storage is relatively full	Spring flush	DCNR (1995), DSE (2002)
Food Bowl Stage 1	2007	~ 75 GL/yr	75 GL/yr for Melbourne; 75 GL/yr for irrigators; 75 GL/yr for stressed rivers. Completion date 2012.	Modernising Victoria's Food Bowl Irrigation Modernisation Information Paper (2007)
Food Bowl Stage 2	2008	~ 112.5 GL/yr	112.5 GL/yr Murray River environmental flows; 112.5 GL/yr for irrigators. Completion date unknown.	COAG Murray-Darling Basin Reform MOU (2008)
Wimmera & Glenelg Rivers	2003/04	41.24 GL/yr	Environmental flow objectives	Victoria State of Water Report (2006)
Lodden River	2005/06	2 GL/yr	Boort District Wetlands; and provide water to Little Lake Boort	Victoria State of Water Report (2006)
SA Additional Dilution Flows	1987	3,000 ML/d or 1095 GL (when storage volumes in the Menindee Lakes exceed nominated trigger points, at the same time the combined storage volume of Hume and Dartmouth Reservoirs also exceed nominated triggers)	Reducing the salinity of water to South Australia (there may be incidental environmental benefits)	RMW operating rules referred to in DLWC (2002)
SA Murray Wetlands EWA	2002	200 GL/yr	Permanent wetland watering	RMCWMB (2002)
Water for Rivers	2003	212 GL/yr (Snowy ANF below Jindabyne Dam) 70 GL/yr (Murray) (100 GL recovered; 33.33 GL for Murray)	Restore 21% ANF flows to the Snowy River below Jindabyne Dam Restore flows to the Murray River Completion date 2012.	Snowy Outcomes Implementation Deed (2003)
The Living Murray Initiative	2004	~ 500 GL/yr (133 GL/yr recovered; 375.7 GL/yr to be implemented; 20.7 GL/yr in development; 64 GL/yr	Restore environmental flows to six icon sites in the Murray River. Completion date June 2009.	The Living Murray Business Plan (2004)

Allocation name	Year approved	Volume and main conditions	Main purpose	Key Reference(s)
		under investigation)		
Water for the Future	2008	~1500 GL/yr (35 GL acquired in 2008)	\$3.1 b to purchase water to restore environmental flows in the Basin. Completion date 2018.	DEWHA (2008)
Water for the Future	2008	~924 GL/yr ¹⁸	\$5.8 b infrastructure investment. See also Food Bowl Stage 2. Completion date 2018.	DEWHA (2008)

Table 4 Summary of Environmental Water

	Recovered Water (GL)	To Be Recovered (GL)
NSW	342.427	287.000
Vic	290.840	75.000
SA	200.000	0.000
MDBC	1228.000	367.000
Federal	35.000	2501.500
WFR ¹⁹	33.330	182.000
Total	2129.597	3412.500

It should also be noted that the transmission and ordered water in the Murray is also managed for environmental outcomes – and has been done so for over a decade. As an example, the water is “pulsed” down the river in order to prevent bank slumping, to promote vegetation growth and for other environmental outcomes. Aside from formal water entitlements, the remainder of water in the river are also part of the water provided to the environment. Even transmission (seepage) losses provide environmental values by replenishing the groundwater system.

Rest of Basin Impacts

The Inquiry terms of reference ignores the substantial issues being faced across the Basin. If all deliverable water was transferred to the Lower Lakes, there will be major consequences for the environment across the Basin (aquatic systems as well as the flora and fauna dependent on that water), human drinking needs, and stock and domestic supplies – let alone any other uses for water such as recreation, industrial and irrigation.

The high focus of politicians, the media and the larger community on the Lower Lakes also ignores the major environmental, social and economic issues (current and emerging)

¹⁸ This amounts has been determined by determining the average cost of water (\$/ML) for approved projects (less those not delivering water or unable to ascertain the cost/ML) under the program and extrapolated to the unspent program funds of \$3.762 billion. See table on following page for more information.

¹⁹ 100 GL actually recovered; this amount is the volume recovered for the Murray River only.

throughout the Basin as a result of the prolonged drought. Recent media (The Australian 30 August 2008) reports to outbreak of acid sulphate soils. The MDBC have issued a media release advising of the investigation of this issue in wetlands throughout the Basin.

There is simply insufficient water to resolve all the environmental problems in the Basin, and insufficient water to remit what is notional required for the Lower Lakes now and what would be required over the coming year to deal with the significant evaporation losses of the Lakes.

Emergency Water Bill 2008

As a general comment, there is some confusion over how the Bill will interact within and between some sections of the Bill, most notably Sections 9-12, i.e. are sections 9-12 stand alone provisions as well as part of an interim Basin Plan.

As outlined earlier in this submission water is already being managed in the Southern Murray-Darling Basin, for critical human needs. This means the provision of water for transmission losses, critical human needs, followed by consumptive use for irrigation (high security followed by low security). There is little that drafting and implementing an ad hoc poorly constructed (due to a 30 day timeframe) Interim Basin Plan will resolve.

NFF supports provisions regarding the Authority CEO (as required under the Murray-Darling Basin Water Reform IGA) and for the ACCC inquiry into Managed Investment Schemes, although the latter has been investigated a number of times, mostly by Federal Government Treasury.

Fundamentally, there is bipartisan and industry support for the National Water Initiative. State water legislation and water sharing plans underpin and describe water property rights (including the rules for water sharing and allocation). Water Sharing Plans, as part of the Water Act transition process, cannot be less consistent than the Basin Plan when developed in 2011. The Bill enables the Minister to make unilateral decision on a range of water sharing matters, and hence will undermine water property rights. NFF has particular concerns in the following areas:

- i) The Bill provides that the Minister may decide that an Interim Basin Plan is required. NFF are concerned about the short time from of 30 days, and that the detail of the Basin Plan under the Water Act 2007 not being required. This will lead to less than optimal outcomes for the entire Basin, and could deliver perverse outcomes, particularly if not backed by modelling and good information.
- ii) Whenever changes are made to the rules that determine water allocations, there is attenuation and undermining of the property rights. The sections of the Bill of concern are:
 - Section 9 (water sharing regimes, allocation arrangements, storage management, water accounting rules, trading arrangements and the allocation

of water for essential system maintenance, conveyance & environmental purposes);

- Section 10 (water sharing regime);
- Section 11 (International agreements); and
- Section 12 (matters to be regarded when making a determination, particularly (f) importance to the economy and communities of maintaining permanent plantings). The latter also disregards the importance of other agricultural uses of water and will affect damage the credibility of the water market.

iii) The Trade provision (section 15, i.e. removing all barriers to trade) is unnecessary as it duplicates the provisions in the NWI and the recent IGA. These latter documents provide for a structured water reform process and relevant time frames for implementation. Adjustment of this agreed process for environmental outcomes is unjustifiable. In some states, environmental entitlements can be purchased and retained with Irrigation Infrastructure Operators (IIO) water access entitlements – thus providing a mechanism for the Federal Government in its acquisition program. Once the agreed reforms are implemented, the Government can then transfer environmental entitlements out of the IIO. Where these provisions are not able to be undertaken within a state, special arrangements should be agreed to enable this to occur.

iv) The constitutional corporations provisions (Section 17) will affect tens of thousands of farmers across the basin, including the irrigation corporations, their members and all farmers (including dryland farmers) outside operating under company structures. The provision will impede the implementation of water efficient infrastructure (both on and off farm), and have perverse outcome for efforts for biodiversity outcomes, carbon sequestration, plantation objectives and other policy areas.

NFF seriously questions why the Bill would include the planting crops and trees as a means of impeding the flow of water from the Basin (S17(1)(g)). Is this an attempt to potentially determine what crops farmers may or may not plant? Consequently, NFF finds this provision offensive.

v) Acquisition of property via just terms acquisition again is unnecessary. NFF draws attention to previous comments regarding the acquisitions possible under the \$50 million tender that were not accepted. Furthermore, how reliability for all entitlement holders is maintained or improved, will largely depend on the treatment of water purchased from willing sellers or acquired through infrastructure investment (i.e. cap management).

vi) NFF seeks clarification about how a States' failure to comply will be accounted for, e.g. whole of state, catchment basis, individual entitlement basis. How will this be assessed and implemented? NFF objects strongly if individual irrigators will be adversely affected by the actions of the state. NFF also notes that this provision may duplicate state legislation.

NFF does not support the development of consistent rules for water sharing and allocation across the Basin. It ignores the development in each state of irrigation systems that reflect the nature of irrigated agriculture in those states, e.g. dairy and horticulture in Victoria requires a very secure entitlement, sharing and allocation system – one that is ideally reflected in the high security entitlements system in that State, including the provision of most of next year’s water prior to this year’s sales water being allocated. The NSW Murray on the other hand has developed a higher longer term use system utilising general security entitlements that reflects the annual planting focus of the valley. Similarly, South Australia has a secure entitlement and allocation system to underpin the high value permanent plantings horticulture focus of the irrigated agriculture.

The Senate Committee sought to inquire as to whether Managed Investment Schemes (MIS) ought to be banned to allow water to stay in the river. MIS is related to the provisions of Australia’s tax system. For an agricultural business utilising these provisions, water entitlements are purchased from other irrigators in order to utilise this water. If MIS operations are not allowed to utilise their water entitlements, this water would be sold. Those new owners would use the water to maximise the economic returns – whether this is the Government for the environment, or other irrigators for agricultural production. It is naive to believe the water would be left in the river and it ignores the COAG focus on the water market to maximise returns from water.

Conclusion

NFF has provided comment on the Inquiry Terms of Reference (Part 1) and the provisions of the Emergency Water Bill.

NFF submits that there is little freshwater available at present to assist the Lower Lakes. To do so will significantly affect the rest of the Basin. The high public focus on the iconic Lower Lakes and Coorong disregards other environmental assets throughout the Basin that are also suffering due to the prolonged and significant drought.

Reactionary efforts via the proposed Emergency Water Bill will further exacerbate the current situation. This Bill, if passed, will lead to significant perverse and unintended consequences, particularly through the fast tracked interim Basin Plan and for agriculture. NFF cannot support this Bill.

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Attachment A: Regulation and distribution of River Murray Waters²⁰

The Regulated Murray

Regulation of the Murray has guaranteed a reliable supply of water, which has contributed greatly to the development and prosperity of the region. Since the completion of Hume Dam in 1936, a flow has been maintained along the river despite several severe droughts. The natural Murray would almost certainly have ceased to flow in 1939, 1945, 1968 and 1983. The continuous flow has also greatly reduced the extremes in salinity levels which occurred under natural conditions. There have also been large flood mitigation benefits to human activities on the floodplain, and recreational opportunities have been enhanced by storages and by increased summer flows.

To date the community has generally considered that the benefits of river regulation outweighed the costs. However community values change, and we now have more knowledge about the impact of our actions on the health of the riverine system. The way the Murray is regulated may need to be adjusted to take account of these changes.

Natural Flow Pattern

In its natural state, the Murray was quite different from the present day regulated river. During severe droughts it was sometimes reduced to a chain of waterholes. The river was too unreliable in this state to enable intense settlement.

River Murray Waters Agreement

It was recognised at the turn of the century that a cooperative arrangement was needed between the States to manage the Murray for the benefit of all, in a way that individual States could not achieve alone. In 1914, after many years of negotiation an agreement was developed between the Commonwealth, New South Wales, Victoria and South Australia to share the waters of the Murray. The River Murray Commission was set up in 1917 to administer the agreement. The main provisions of the first agreement (the River Murray Waters Agreement) were:

- the construction of major storages at Hume and Lake Victoria,
- the construction of numerous smaller weirs and locks along the Murray and the lower Murrumbidgee,
- sharing of the resources of the Murray above Albury equally between New South Wales and Victoria,
- subject to an obligation to provide South Australia with a specified minimum quantity of water.

These early arrangements served to secure flow in the Murray and to facilitate navigation by river boats.

The Agreement has been amended at various times as community needs changed. In 1988 the River Murray Commission was replaced by the Murray-Darling Basin Commission, which has a wider role in land, water and environmental management in addition to its traditional water management role. The River Murray Waters Agreement was replaced by the Murray-Darling Basin Agreement. However, control of Murray flows continues to be a major responsibility of the Commission. It presently controls four major storages, sixteen weirs, five barrages and numerous small regulators in the Barmah /Millewa forest.

Distribution of Water

²⁰http://www.mdbc.gov.au/rmw/river_murray_system/dartmouth_reservoir/hume_and_dartmouth_dams_operations_review/backgrounder_2:regulation_and_distribution_of_river_murray_waters

Water is diverted from the River Murray all year round, though demand is small in winter. During winter and spring, as much water is stored as possible. Irrigation diversions normally increase progressively from August to November, but in spring they can often be met largely from natural flows. From December to May, inflows to the river usually recede and the demand for water is largely met by controlled releases from storages. Summer releases also enhance navigation and recreation on the river.

Today, river regulation is a sophisticated exercise which involves planning many months in advance. (It takes about a month to get water from Hume Dam to the South Australian border.) Commission staff use computer models to estimate release requirements which are adjusted daily. Allowance must be made for river transmission losses, tributary inflows and forecast diversions, along the way. Releases are made according to detailed policies which cover needs for diversion, control of river salinity levels, specified environmental requirements and so on. To assist in the planning and management of the Murray, the Commission uses a number of computer simulation models which assess the merits of various management alternatives in terms of both water quantity and quality. These models are needed to deal with the intricacies of water sharing arrangements and system operations.

The Murray-Darling Basin Agreement requires a "reserve" of water to be held in storage at the end of each season to safeguard against future droughts. Water resources are therefore assessed very carefully at the start of each season, and as the season progresses. Each State must plan its usage in accordance with these assessments. If it is forecast that sufficient reserves cannot be achieved at the end of the season while supplying South Australia's full entitlement, a "period of special accounting" will be declared. This enables maximum usage by the two upper States whilst preserving South Australia's share of water resources during periods of drought.

Management of salinity levels is an important part of river regulation. South Australia's entitlement includes a proportion of flow for dilution purposes. Salinity control is assisted by the operation of eight schemes (evaporation basins, groundwater interception schemes etc) in the mid and lower River. Also, Menindee Lakes and Lake Victoria are operated in "harmony", which permits the supply of additional dilution flows to reduce downstream salinity levels as far as possible.

Major Storages

The Commission is responsible for four main storages. Dartmouth, on the Mitta Mitta in north-east Victoria, is mainly a reserve storage to supplement Hume Reservoir in dry seasons. Hume, located about 16 km upstream of Albury on the Murray, is the main operating storage of the Murray System. The Menindee Lakes storage is owned by New South Wales and located on the Darling about 200km north of its junction with the Murray. Consisting of four interconnected lakes on and adjacent to the Darling River, it supplies water to the Murray system by agreement with the MDBC. It is important as a source of supply to South Australia in most years, but is more subject to severe drought than the Murray storages. Lake Victoria, an "off river" storage located in New South Wales near its border with South Australia, serves as a mid-river balancing storage which is used to supply water to South Australia with only short delay.

The Snowy Mountains Scheme

The Snowy Mountains Hydro-electric Scheme uses the reliable waters of the Snowy Mountains to produce hydro-electricity and to boost irrigation supplies in the Murray and Murrumbidgee valleys. The Snowy-Murray portion of the Scheme provides on average about 5% of the flows to the Murray system, but its importance is highlighted in dry periods, when its contribution can rise to about 33% when inflow from other sources is low. The Scheme increases the security of water resources along the Murray. Under the Snowy Mountains Agreement and resolutions of the Snowy Mountains Council, the MDBC has a minimum guaranteed quantity of water (1062 gigalitres per year) which can be called on if required in dry periods.

Barrages, Weirs and Locks

Five barrages have been constructed across the channels leading from Lake Alexandrina to the Murray Mouth to prevent seawater entering lakes Alexandrina and Albert during periods of low river flow. There are 14 weirs and locks between Yarrawonga, some 230 river km below Hume, to Blanchetown in SA, only 274 km from the Murray Mouth. Ten of these are below the Darling junction. They were originally constructed to provide year-round pools for commercial cargo boats and for irrigation diversion by pumping or gravity. Today the commercial cargo trade has disappeared, but the weirs serve their original irrigation function and are increasingly important for recreational boating.

Euston and Yarrawonga Weirs create pools of sufficient capacity between maximum and minimum operating levels to "fine tune" the regulation of river flows along the great distance between Hume and South Australia.

Attachment B: Whose water is it?²¹

Who owns the water in the Murray-Darling Basin Commission storages on the River Murray and lower Darling and how does it get divided up?

The two upriver States - Victoria and New South Wales - share equally the water flowing into the Hume, Dartmouth and Menindee Lakes storages but must provide a defined allocation to South Australia, of which a substantial proportion is reserved for environmental flows in the lower Murray. In times of severe drought each of the three States gets a third of what is available. The two upriver States also control the water in their tributaries to the Murray, although the level of extraction is now constrained by the Cap on further increases in water diversions. In addition, there are a number other factors that must be considered. These include the requirement to supply South Australia with minimum monthly flows (which may be reduced in times of drought) and to carry over water for future years in order to reduce the impact of prolonged dry periods.

Working within these principles, each State makes its own decisions as to how its share of the water will be used, most critically - how much water should be distributed and how much should be held in reserve for the future? At any given time it is normal for the three States to have varying amounts held in reserve in the storages. New South Wales generally holds lower volumes in reserve than Victoria because it has predominantly annual crops. Victoria has more permanent pasture and horticulture which require higher security of supply. It should also be noted that water use planning by the States extends well beyond the current season to take account of the possibility of prolonged drought in future years.

An additional dimension to the system is that it is sometimes possible to supply South Australia's requirement from water stored in the Menindee Lakes and Lake Victoria. The water in the Menindee Lakes comes from the Darling River system, fed by the summer rains of southern Queensland and central northern New South Wales. When this occurs, as was the case the late 1990's and 2000, it reduces the demand on the Dartmouth and Hume storages which are then in a better position to supply irrigators on both sides of the Murray upstream of the junction with the Darling at Wentworth.

The water is shared between New South Wales, Victoria and South Australia according to an agreement first developed in 1914. Details of the agreement have been changed since then but the principles upon which it is based remain the same. To administer the Murray-Darling Basin Agreement the State governments in the Basin (including Queensland and the ACT) and the Commonwealth established the Murray-Darling Basin Commission.

The Commission implements the terms of the Murray-Darling Basin Agreement according to rules defined by the partner governments. The water sharing arrangements are administered by the Commission's water business unit, River Murray Water, which delivers bulk water to the three States as required and manages the system's major assets such as the storages.

²¹ Source: http://www.mdbc.gov.au/nrm/water_issues/water_sharing

Attachment C: What Affects the Reliability of Your Water Allocation²²

As an irrigator, the most important things to affect your water allocation are rainfall, the amount of water in storages such as the Hume Dam, and your State's allocation policies.

In a natural system, the variability in rainfall would mean that in some seasons the river would be practically dry, and in some there would be flooding. However for most of the time the quantity of water in the river would vary somewhere between these extremes. In short, water supply in a natural system is not reliable because it depends totally on how much rain falls.

For irrigators, the reliability²³ of your water supply is crucial.

The Murray is a regulated system where storages like Hume Dam and other structures like locks and weirs have been built to increase the reliability of water supply. While these structures have increased the reliability of supply, they have not been able to compensate totally for the natural variability of rainfall.

THE RIVER MURRAY SYSTEM

The River Murray system is a vital source of water for farmers, communities, industry and the environment in NSW, Victoria and SA. At the same time, we all recognise that the river cannot provide an endless supply of water.

With such a high degree of reliance on this system, the amount of water available is limited and varies from season to season. It is essential that we share the water in a way that sustains the health of the river, thus ensuring the livelihoods and lifestyles of those who rely on it.

Achieving This Balance Can Be Difficult

To do this, rules for sharing available water fairly between the States have been worked out by the Murray-Darling Basin Commission through the relevant partner Governments – the Commonwealth, NSW, Victoria and SA.

These rules are set out in the Murray-Darling Basin Agreement. The rules of the Agreement can change if the partner Governments agree. The first agreement was reached in 1915 and the present one dates from 1992.

While these rules are important, the most important thing affecting the reliability of your allocation as an irrigator is the variability of rainfall from year to year and trends over longer periods.

Another related factor affecting reliability of water supply, and your allocation, is the fact that the amount of rain that falls varies from region to region as well as from season to season. This variability and each State's allocation policies, are the main reason why water reliability is not the same across the States that share the Murray.

WATER AVAILABILITY TO THE STATES OVER THE LAST 100 YEARS

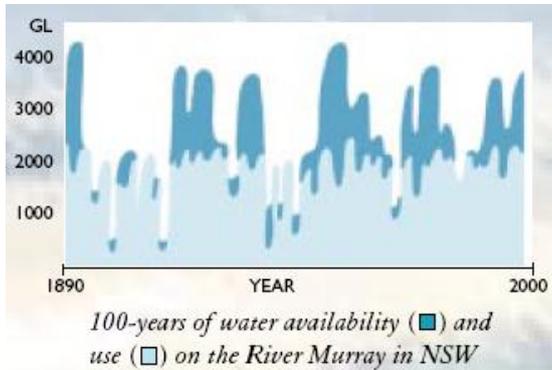
The last hundred years have seen many changes in the Murray with major dams, locks and weirs having been built and irrigation having grown enormously. These changes have resulted in the river being highly regulated so that supply is much more reliable than it would have been without them.

²² Source: 1999, MDBC.

²³ Reliability of water available is a measure of how often a certain amount of water supply can be expected.

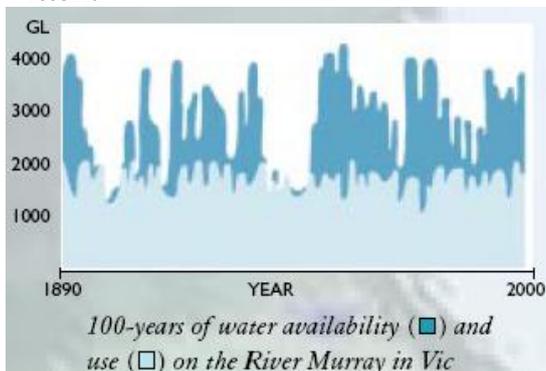
If we assumed that these structures and present rules for water sharing between the States had been in place for the last 100 years, how much water would have been available with current levels of development? A computer model has been used to find out, using each State's existing water allocation policies.

NSW



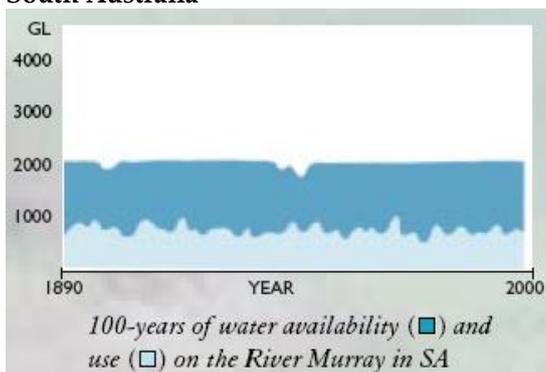
For NSW this model shows that for 5 years in 10, water use for the Murray would have been more than 2000 GL a year while for 1 year in 10 it would have been less than 1300 GL a year, and 1 year in 25 it would have been less than 500 GL a year. It also shows that the last 10 years have been wetter than the average of the last hundred years so that 25% more water has been available in this time. The 100 year average use in NSW would have been approximately 1870 GL.

Victoria



For Victoria it shows that with its more conservative approach in the way it uses its share, in only 1 year in 20 would water use for the Murray have gone above 2000 GL a year. This approach also means that, unlike NSW, water use would not have fallen below 1000 GL a year due to lack of water. If the 1939-46 drought, one of the most severe this century, were repeated, Victoria would be able to supply 100% water right to its Murray customers in all but one year. The 100 year average use in Vic would have been approximately 1600 GL.

South Australia



For SA it shows that the full share would have been available in 9 out of 10 years and that SA diversions would have been well within SA's entitlement flow provision. It also shows a very high reliability of supply to irrigation and urban water users in SA, reflecting the highly conservative approach to use of River Murray water in that State. The 100 year average use in SA would have been approximately 660 GL.

RAINFALL VARIABILITY ISN'T THE ONLY THING AFFECTING YOUR ALLOCATION

There are two other things that affect, to a lesser extent, your water allocation:

- the Cap on diversions; and
- how the States decide to share the total volume of water available each year between all users, including irrigators, towns, stock and domestic users and the environment and reserves for next year.

Reliability Under The Cap

The Cap is not a fixed limit on the amount of water the States can divert for use each year. Rather, it sets a limit to the long term, average diversion of water from the Murray-Darling River system that each State can make. Under this averaging system the States can allocate differing amounts of water each year, as long as they do not go over an average specified amount over a period of years.

The specified amount is calculated based on rainfall actually received and the amount of water held in storage.

State Allocations

While the Cap sets a long term limit on diversions, it is up to each State to decide how this water is shared among users such as irrigators, towns, stock and domestic users and the environment each year. In general, if the season is dry, this will have a bigger effect on how much water you are allocated than the Cap. In dry times, pretty much all the water available in the system will be allocated to users.

The limit to diversions under the Cap actually comes into play in wetter years. As there is more water in the system during these times, the States may choose to keep more water in storage for use in dry years in the future and as a way of not going over the Cap in the long term.

STATE APPROACHES TO WATER ALLOCATION - A SUMMARY

The most important aspects of each State's management of water allocations are as follows:

NSW

- Shares River Murray water equally with Victoria
- Maximises water use in each year and carries a minimum of water reserves for the next year
- Adopts a more opportunistic approach to water management, reflecting the high proportion of annual crops grown compared with Victoria
- Use of River Murray water is, on average, higher than Victoria but much lower in times of drought

VICTORIA

- Shares River Murray water equally with NSW
- Keeps significant volumes of water in reserve at the end of each irrigation season to protect the needs of enterprises that depend on the Murray should there be a prolonged drought
- Reflects the higher proportion of permanent crops grown compared with NSW
- Adopts a more conservative approach to water management meaning that water use is, on average, lower than in NSW but is more reliable in times of drought.

For Victoria and NSW it is worth noting that while they share equally in the water available from the Murray system, they manage this share differently between the different diverters. Each State also manages its own tributary flow into the Murray e.g. the Murrumbidgee River in NSW and the Goulburn River in Victoria.

SOUTH AUSTRALIA

- Receives an agreed amount of water from the River Murray each year as a legal entitlement
- Has a very conservative approach to water management because of the type of irrigation enterprises and the need to meet urban water requirements throughout the State
- Has a very high reliability of supply

THE CAP AT A GLANCE

Several years ago the five Governments that made up the Murray-Darling Basin Commission (the Federal Government, Queensland, NSW, Victoria and SA) agreed to establish a Cap on further diversions† from the Murray-Darling Basin. This Cap has been operating since 1 July 1997 and applies to all surface water whether it is used by irrigators, for stock or domestic purposes, and by townspeople.

The major reason for the Cap being introduced is that over time the amount of water taken from the Murray-Darling Basin for a variety of uses, including irrigation, had grown substantially. The States agreed that further increases in diversions through new development would not be sustainable and would have seriously reduced reliability to all existing water users, including irrigators.

River health was also, and remains, an important issue. As more water was extracted, the rivers were showing signs of stress so that there was no certainty that the current riverine environment would be able to survive in the long term without some action. Reducing water quality would have also threatened the reliability of water to existing irrigators.

The amount of Murray water shared between NSW, Victoria and SA each year under the Cap is based on:

- management rules and infrastructure (number of irrigation licences, dams, weirs and channels) that existed in 1993/94;
- fixed allocation for SA
- how much water is held in storages
- expected inflow and losses, which depend on weather conditions and releases from the Snowy Mountains Scheme.

This means that the prevailing weather condition and conditions in the river are crucial to how much water individuals are allocated in any year. It also means that the amount allocated to users will vary from year to year depending on these conditions.