

AUTHORED BY THE
ROBINVALE TABLE
GRAPE GROWERS
ADVOCACY GROUP

*Response to the ACCC Murray-Darling Basin water markets
inquiry*

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Introduction

Firstly, we would like to acknowledge all Past, Present and Future Australian Family Farmers. Their continued efforts in the foundation and continuing support of our communities and economy with very little recognition and value is immense! Their persistence in providing the world with its 'Clean & Green' products, while often facing legislated barriers to their businesses, should be commended. These selfless farmers are the building blocks of our country and Australia would be a much poorer place without them!

Thank you to the ACCC for undertaking this inquiry into the Murray-Darling Basin Water markets. We had the opportunity to listen to Mick Keogh speak when the forum was in Mildura and were impressed that he had the guts to listen to a very emotional crowd, giving everyone the time to speak and also having a genuine interest and the persistence to understand the issues at hand and most importantly the issues from the attendee's point of views.

It would be easy to get caught up in the passion and raw feeling's which were shown at each of the forums, but we implore the ACCC to act on first hand stories and good grower/irrigator knowledge of how issues around Water Trading are affecting Farms, Communities and economies. The frustration and helplessness born from the complications around water trading is also a key contributing factor in the rise in the rates of suicide and mental illness in these rural communities. This is the unseen effect of the increased pressure surrounding water and the chaos which the water trading market degenerated to.

This is why, together with a small group of growers we are making this formal submission, but remember we are

This formal submission was prepared by a group of full time farmers, not professional political activists or professionally employed staff paid to live and breathe water issues to get the best outcome for our employers. This is a firsthand look at the issue from a group of Family run Farmers/Irrigators. We urge a bit of caution when being presented with the elaborate submissions made based of 'scientific fact'. From experience, most of these facts are chased to favour a particular view and are so far removed from the issues. When legislations and Laws based on these facts fail communities, there is nobody found to be accountable for the mismanagement caused by their advice or studies. The main casualties being non corporate Family Farmers and the communities they support.

Carry Over impacts.

I would like to draw attention to the below government website showing water allocation by owner.

We are VIC Murray Irrigators so I've focused on the VIC Murray figures.

<https://waterregister.vic.gov.au/water-availability-and-use/available-water-by-owner-type>

Segmented Unused Water

Water System Source: Murray

Financial Year: 2019 - 2020

Created: 08-11-2019 02:52 pm

	Environment (ML)	Private (ML)	Water Corporations (ML)	Total (ML)
Available Water				
Net carryover at July 1	349,616	189,663	40,017	579,295
Seasonal allocation	199,036	369,146	32,000	600,182
Trade by buyers	249,765	312,164	2,150	564,079
Return flows	196,858	0	335	197,193
Quarantined in spillable accounts	0	0	0	0
				-
Water usage	-226,161	-136,873	-4,703	367,737
				-
Trade by sellers	-442,038	-234,571	-7,099	683,708
Write-off due to spill	0	0	0	0
Adjustments	0	-4,169	-921	-5,090
Evaporation	0	0	0	0
Write off 30 June	0	0	0	0
Available balance	327,075	495,360	61,779	884,215

There is a huge imbalance of water holding power here; The environmental water holder legally through carry over rules hold a majority of water in its account, 995GL vs Private 870GL and Water Corporations at 74GL. This ties up storage space for real irrigators and holding a disproportionate amount of water causing a shortage in the market.

The commonwealth is accumulating and hording as much water as it can, as reported via the ABC the article below.

<https://www.facebook.com/ABCMilduraSwanHill/posts/10164295117135206/>

Carry over water was supposed to give farmers security in dry years but the commonwealth water holder has used this feature to secure its own water holding, amplifying the shortage in the market.

This 'stored' environmental water is then released in excessive drought years without any consent for critical human needs or future crops creating great anger within communities along the river.

It is our view that all carry over should be abolished or at least limited to 30% of a water holding licence. If carryover is allowed, the commonwealth should be excluded from the scheme. On a dry

year like we have encountered in 2019, environmental water would be hedged through the allocation system creating a better balance of power in drought years.

Another very questionable element in carry over rules is how water can be 'parked' against a low security holding account. This essentially takes an entitlement from most parts of the system, effectively returning it to storage or sinking it to the bottom of Hume. This renders this entitlement unable to 'Spill' under any circumstances.

The Commonwealth water holdings are seen as an environmental water, but how this holding impacts the water trading market are very clear. It is the largest water holder, larger than any corporate entity or Farm group, with the deepest pockets and legislation which enables them to purchase more permanent water. The water is held at a greater cost than any irrigator can afford, having a direct impact on the prices we are seeing today.

Brokers

We disagree with Water brokers pitching to investors with the sole goal to make money from water trading. Have a look at the below link;

<https://www.ruralcowater.com.au/for-investors/>

Acquisition and disposal; Portfolio diversification advice; Allocation trading strategy; Forward Allocation Agreements; Carryover Agreements

<https://www.duxtonwater.com.au/>

Australia's only ASX listed vehicle providing investors with direct access to water

Duxton Water 'only pure water business on ASX' and 'yet to find a counterpart globally'

Duxton Water Limited ("Duxton Water" or "the Company") is Australia's only listed vehicle providing investors with a direct exposure to the Australian water market.

These guys aren't even trying to hide it! They are directly pitching to outside investors with the sole purpose of making money. It's 100% legal, but is it right for our rivers, farmers and environment to offer our water to investors creating a new demand driving up prices that farmers need to compete with?

Forward allocations are another problem that are completely legal at the moment. Currently listed on ruralcowater.com.au, you can buy forward water allocations before they are even available right out to 05 August 2023! Another Scheme available to make water scarce for farmers with the end result of driving up prices.

Forward allocations, together with carryover are both key water hording elements. If water can't be used in a season, let it run out for environmental flows or if storage allows hold some back and give a good opening allocation the following season. Both these scenarios put more pressure on the amount of tradable water in the market at any one time.

Rural Co Water, Waterfind and the likes do provide irrigators with an excellent easy to read newsletter summarising key issues and trade potential for southern basin. But, this information has quite often been delivered with a narrow band on scope. In a lot of cases, only showing a more dramatic state of where seasonal outlooks sit. Irrigators assume this is broad and accurate information. But key information with regards to what water is fully available in the whole system at one time within a season is hard to find, if not impossible. Leaving the vast majority of information digested by growers, directed to them by the water trading companies. The weekly emails are backed up by phone calls from brokers (in many cases cold calls), further pressuring irrigators to buy. In many cases irrigators have indicated for these calls to stop, which does not stop the calls from continuing. This is a blatant sales driven strategy, formulated with the sole intention to make sales. All of the above factors drive the price of water up within a season, as opposed to providing a good balanced view of what is available and how best to purchase the water by irrigators. It is essential that this information was available in a simple easy to find single government website, creating transparency and independence. This information should not be used by Water trading businesses to whip the market into a frenzy, which has been very easy for them all to do in the last few years.

Since the Millennium Drought through to now, the way water is marketed to irrigators has changed dramatically. There is no denying the fact that the ability to trade water in and out of districts can be beneficial to many Irrigators/ Farmers along the system. But in spite of this fact, the water trade market, together with an ever changing set of water trading policies, have only caused confusion and in some cases chaos within the market. From a grower/irrigators prospective, it seems very systematic. We essentially have gone from a time where all our information regarding the coming seasonal outlook on storage levels and pending allocations were coming directly from our local water authority, which came from Resource Manager, Northern Victoria. This used to be a good, balanced view of the situation, giving irrigators all the information needed to make their own decisions regarding their own water requirements against what they thought allocations were going to be. The first notable change was an increase in cold call phone calls from water broking firms, and emails direct to irrigators, continually pushing broking services them, on a weekly or monthly basis.

Irrigators have expected a seasonal outlook update, usually April of any given year. In our case here in Robinvale, this information has come in the form of an email from Lower Murray Water, our local Water Authority. But, in 2016 this changed. Irrigators in the district still received a seasonal outlook, but it was not from Lower Murray Water, instead it was in the form of a Waterfind Newsletter or something similar from water traders. These marketing newsletters gave a narrow band of information within them, but still looked like a comprehensive enough outlook to the irrigator. The correspondence irrigators started to receive, to allow them to prepare for the coming irrigation season had slowed down (or stopped) from our local Authority and dramatically ramped up from Water Broking Firms. Pointing toward the possibility of collusion between authority and brokers, as the timing of these change looks to be too coincidental. The case study's below, directly reflect the confusion and hysteria which some of this information caused, and the direct loses that irrigators suffered because of the misinformation which is out there.

The Water trading system and subsequent market and become a law unto its own. With irrigators left without true transparency on the volume of water is available for sale at any one given time. Whether there is a shortage or an abundance of water available. These figure can be easily manipulated by sellers of water, to create a perceived shortage in the market, driving the market up in a very short period of time. There is very little transparency within a water trade transaction. In some cases, brokers are buying and parking water in account from a previous season and selling in a season like this one, when prices are high. In some cases, parked water purchased in a previous season at \$26/mg/l is being sold for upwards of \$950/mg/l in Zone 7, Murray. And there is no way of knowing this how often cases similar to this are happening. And documents from brokers are not transparent enough to reflect the actual cost and allocation year of origin of the water being sold. This is advantages to the sellers and brokers, but is absolutely to the detriment of irrigators. This lack of knowledge and transparency and all too easily created and environment of uncertainty and a perception of an under supply of water. Brokers, and Authority's equally have the power to easily create a frenzy in the market. Between a lake of proper seasonal outlooks, poor allocations leave the brokers with the ability to ramp up the sales tactics, to play irrigators off against each other, which forces water to the highest bidders.

With the constant changes in water reform, carry over laws and trading rules, we are here to call out each of our local Authority's, in having an utter lack of duty of care towards it customers. It should be in each local water authority's interest that any water traded into the area, is retained and pumped in the district. But, as is illustrated in the case study's below, irrigators have lost water, due to technicalities and oversights of rules, where the local authority could have acted or advised its growers better as to an impending loses. It questions whether the Local authority is truly there on behalf of its irrigators, or doses it show a level of incompetence within specific departments of the Authority's?

Grower Case studies

Below are 4 Case study, giving a snap shot of how irrigators have interacted with the market, rule changes and with the information which is presented to them.

Case study #1

Family owned & Operated Table Grape Business based in Robinvale, Victoria & Merbein, Victoria
Land holding – 100acres (40ha), across 5 properties, all producing Fresh Table Grapes only

The enterprise is owned and operated by 2 brothers, 56 & 39 years old respectfully. They are third generation Table Grape growers. Running the farms and business together with their wives', 2 older sons (30 and 25 years old) and their families are also engaged in the business. It's a strong Family business who have strong links to the local community. It has run successfully for decades and has laid foundations for each of their families to continue farming into the future.

All their properties have AUL's and permanent water entitlements. Each year they continually try to be aware of all the carryover rules/regulations or changes and always try to carryover some additional volume of water from season to season, to try and be well prepared for any seasonal conditions they face. It has become a necessity for each business to function, as well as plan and safe guard the investment in their permanently planted crop, into the future.

In 2017, an additional 40 acre/16ha (table Grape Farm) was purchased in Merbein Victoria. It was purchased with an AUL, but no permanent water entitlement. As is increasingly common in the area we were not offered water with the sale of the property. This water was retained by the retiring farmer as an asset. Which subsequently puts another 100mg/l's of water onto the water trade market and with the sole intention of its owner seeking the highest possible return from. This left the enterprise with no permanent water entitlement on the property whatsoever. Which then forces the business onto the open water trade market to lease water in each irrigation season to grow their crop. This has left the business vulnerably to fluctuating water markets, and inconsistent rules and regulations surrounding water. Leaving them open to losing water due to rule changes and technicalities. They looked into possibly acquiring a parcel of permanent water for this property. Following discussions with their bank, accountant & within their business group it was determined that it would be too expensive to purchase a permanent right. And there were no guarantees to receive a full allocation on that right, which in hand would mean we would need to purchase/lease it for a second time during the same season. This will prove to be a very expensive exercise.

In June 2018, the enterprise was preparing for the 2018/19 irrigation season. They decided to purchase/lease 60megs of temporary water at \$165.00 for the coming season for their Merbein property. With advice taken to try and secure the lowest price available for water, with the intention of carrying the water over into the next season to start to prepare for the next seasons water requirements. The transaction was signed off on June 1st with the water broker and transferred into their account on June 26th. The enterprise entered the 2019/2020 irrigation season, with the intention (from best advice) that the farm would start with a positive water balance of the 60mg/l (which they purchased only a month prior). Following the first irrigations on the Merbein property (in July/August 2019), they received a letter in the post, stating that they had a negative account balance. They immediately made phone calls to LMW in Mildura and their water broker to find out why their account balance was in the negative. From this point the enterprise was informed that they had lost all of the water which was carried over, the whole 60megs gone. The reason being that water can be used on a property with an AUL, but cannot be carried over against a

property without a permanent water entitlement. This was new information to them. The decision was made with best information to them at the time. They believe there was multiple opportunities through the process where the broker or the Water Authority could have notified the business to warn the grower of the impending losses. A simple phone call, text message, anything to warn/inform the purchaser that the water will disappear on July 1st unless they used the water or transferred it to another ABA, for future use. They had the ability to transfer it into their other ABA accounts in Robinvale in June, where it could be transferred back to the Merbein property in July. This case highlights the continuing complication and changes to rule surrounding water trading which small farmers have to deal with. But it also highlights the lack of care taken from Water Authorities and brokers to properly educate and advise their clients around the constant rule changes.

Initial water purchase	60mg/l @ \$165 = \$9,900-00
Replacement water cost after losses	60mg/l @ \$605 = \$36,300-00
Net losses to grower in 2019/2020	-\$26,400-00

In the 2018/19 season irrigators were able to have a negative ABA account which allowed the enterprise to transfer 65 megs from their Robinvale properties on 12th March 2019 and then purchase/lease the water on 3rd May 2019, when funds allowed them to do so. Since then the rule has changed, so that all irrigators need to have accounts where their water right is positively in balance. This relatively new change to the Water Act has put further pressure on an already competitive water market.

In conclusion, irrigators need to be updated on frequent rule changes. But water Authority's need to be more proactive, to ensure that there is a good understanding for the rules, by their customers. They have been seen to be passive in the way they convey rule changes to growers. Authorities could help identify when an irrigator is going to lose water, through a breach of a rule, so water isn't lost. At the very least, this should highlight the fact that a District water authority should show a better duty of care when delivering information to its customers.

Case Study # 2

Family owned & Operated Table Grape Business based in Robinvale, Victoria & Merbein, Victoria

Land holding – 100acres (40ha), across 5 properties, all producing Fresh Table Grapes only

This refers to another major case of [water loss](#) in 2016 known as the dam spillage year.

Towards the end of each watering season (May/June), as a business group, they assess their water requirements, together as a family and talk through necessary financial and business decisions that needed to be made in planning for the next season. One of these very important decisions is whether to carryover water? They draw on the best available knowledge to them, including with accountants, water brokers and other growers for general advice. Lower Murray Water are usually the best source of information, and would normally send emails with all the relevant information regarding to the current water situation, dam levels & seasonal outlooks. The decision was made by them to lease water in at the fair prices, while funds allowed them to do so. Temporary water was purchased for \$248/mgl on 1st June 2016, with 85m/l purchased on one property and 76m/l on another property. At this stage there were very strong indications from authorities that the season would start off dry and that the outlook was for dry to below average inflows into the catchments.

In September of 2016 there was an above average amount of spring rain. Although grateful for the rainfall, the enterprise was informed that the carryover they had purchased in June of 2016 would be lost due to Dam Spillage. Dam levels rose from 42.7% on 15th September and 100% on the 3rd of October. This caused them, as a business to lose a total of 154m/l from two properties. Plus, a further 137mg/l were lost on a pump syndicate they are a part of. Unforeseen rainfall caused dam levels to rise and spill. But changes in the way Seasonal Outlooks are given and the amount of conflicting advice/data there is out there, puts farmers like these in a confusing predicament when planning water requirement for coming seasons. Water was needed to be purchased again in the same season to replace the water lost. The only consolation was the price being \$26mmg/l on the 1st June 2017, obviously with dams being full.

One interesting message I had noticed on the Victorian Water Register Allocation Account Statement, was that a low spill risk declaration was made on the 10th September 2015 (statement issued on 2nd of July 2016)

The following year, the low spill risk declaration message was noted as being made on the 10th February 2017 (statement issued on 5th of July 2017), strange that no message was noted between September 2015 and February 2017, possibly a declaration of a spill could have been made during those dates! As the spill was September 2016.

This wasn't the only situation of Dam spillage causing loss of water, which growers needed to replace with repurchased water. In 2013 the business lost 200mg/l @\$60 per mg/l, costing them \$12,000 after a dam spill in September/October 2013.

16/9/13 spill write off 52.93%

1/10/13 spill write off 31.75%

15/10/13 spill write off 58.32%

15/11/13 spill write off 41.09%

Subsequently, the tactic of "Parking Water" crept in, where water can be transferred from high security water accounts into Low or General security water accounts for carryover. Effectively, taking it from usable water in the Sunraysia district, sending it back all the way to Dartmouth, to the bottom of a dam storage, with no risk of spill.

Case Study # 3

Family owned & Operated Table Grape Business based in Robinvale, Victoria & Trentham Cliff, New South Wales.

Land Holding - 65acres (27ha), across 2 properties in Victoria& 80 acres (32ha.) in NSW. All producing Fresh Table Grapes only, All with AUL's & Permanent water entitlements.

The business is family operated run together with his wife, 3 kids. His parents are still actively involved in the business and have been involved in the industry for the last 60 years.

At the beginning of the 2016 season they looked to plan ahead to carryover water into the new season. Given the seasonal aspect to the businesses cash flow, it was advantages for them to purchase water at this time. The information which formed the decision to purchase carryover water was gained predominantly from their Water broker and Lower Murray Water. The seasonal outlooks provided looked to be dire, with the information placing an emphasis on mainly dry to average inflows. This data weighed heavy on growers decision to purchase 55 mg/l's of Temporary water at \$180/mg/l.

What followed was a wet spring break, with above average inflows leading to a spill, where the business (as well as many others) lost all water which was carried over. It is his belief that better information regarding seasonal outlooks be provided to irrigator like himself, and that the information is balanced. Not favouring a particular scenario, as information from brokers and Authorities in this season were heavily favouring mainly dryer conditions. The enterprise believes that this was the major contributing factor which pressured him into buying carry over water for that season.

The grower believes that carryover water is a vital tool to his horticultural industry, which allows him to plan ahead for future seasons. The enterprise firmly believes that temporary water should be more affordable, and that a seasonal asset which is place in storage should never be lost to a spill!

Initial water purchase	55mg/l @ \$180 = \$9,900-00
Replacement water cost after loses	No need as full allocation was given
Net loses to grower in 2016/2017	-\$9,900

Case Study # 4

Family owned & Operated Table Grape Business based in Robinvale.

Land Holding - 96acres (39ha), across 4 properties in Victoria. All producing Fresh Table Grapes only, all with AUL's & with Permanent water entitlements to cover 65% of the land holding.

Here is an alternative example of an irrigator needing to seek out and sift through conflicting information to make a decision on whether or not to buy water.

Within the season of 2015/2016, there was a necessity in the business to purchase water to top up a short fall of water, which was used to finish off the season. In April of 2016, they received an email, at the time from Waterfind, which among other Market information, which had a snap shot of the seasonal outlook for the area, together with the outlook on what the coming seasons allocation were going to be. It was noted, at the time that there was a lot of information not included in Waterfinds outlook, which would typically be included in a Seasonal Outlook usually provided by Lower Murray Water. The outlook provided on the Waterfind Newsletter did not read well for the coming season, showing that the chances of full allocation were in the lower percentile, and all thing were pointed towards a year of low allocations. Talking to other growers at the time, the common thought was along the lines that the coming season was going to be dry based on the information given. At the time, the business sought to view the full seasonal outlook, issued by Resource Manager Northern Victoria website (<https://nvrn.net.au/outlooks/current-outlook>). The outlook did not look as dramatic to the grower, as it gave the full view of how each seasonal scenario could pan out. It was determined by the grower, not to buy Water to carry over in to the next season. He would take a chance on the fact that there is usually a high chance of inflows into the Murray system September/October, which would improve allocations for the year. This decision was made, while as a district, many irrigators were under the impression that the chances of low allocations were

high, and it was necessary to buy temporary water to carry over. Mainly due to the narrow, targeted information which was being circulated.

The irrigation season began, with low allocations to start with. Then with a good spring break in the catchment area, came an increase to allocations to 100%, then a subsequent risk of spill, and a loss of carry over. With widespread losses incurred by irrigators in the district, by growers who carried over water from the previous season. It is noted by grower that the 2015/2016 season was the season where his business saw a clear shift in the way information was handled. It went from a time where Lower Murray Water would send full outlooks to growers, usually at the start of the 4th financial qtr., to 2016 being the 1st season where a full seasonal outlook link was not sent to irrigators by LMW. Brokers handled and distributed the information which irrigators viewed at its first point, which was crucial. This formed an assumption amongst irrigators in the district that the information given at the time totally accurate. But, it information provided proved to be manipulated to the point that it was seen to be worse than what it could have been.

Politicians not needing to declare water ownership

The fact that water as an asset could be held by the very people who are in charge of the governance of Water and the River system, brings to the water trade issue the element of what are the true interests of these water holders. It is criminal that a sitting government can make rules around the security of water and a water system, whilst allowing parliamentarians or their beneficiaries, the ability to gain from the rules they legislate. Everything needs to go through parliament, gets scrutinized and impacts evaluated. How can we have any trust in the scrutineering of these bill's when the people making the rules could be potentially making huge investment gains either directly or indirectly through family or part company ownership. We need at minimum for politicians to make their water interests known publicly, before we can be sure they are acting in anyone's best interest besides themselves.

Constraints to the system and the impacts on water trade with the expansion of farming within the district

When we look back on how the water market has changed in the last 10-20 years, you cannot purely look at the way the market system & brokers operates, without stepping back and having a good look at the way water is used, where it is used, and how much more is being used in one area, compared to 20 years ago. Below is detailed overview of this, highlighting the explosion of growth in horticulture in our region (Zone 7, Murray). It also gives an overview of our observations on storages and seasonal river flows. We have also included information around the management of environmental flows, where there is evidence these flows are not managed correctly or as effective for the environment as they should be. Some of these issues may look to be out of the scope of the inquiry we are responding to, but we beg to differ. All these issues are key drivers in the enormous increase which has been heaped on the system, especially in one area (Zone 7, Murray). Which has in turn created a hive of activity in the market, in this area.

After the 'Millennium drought' we've had Catchment and river flood events in Jan 2011, & Nov 2016. With Dams over flowing, irrigators carry over water lost, etc. The Dartmouth Dam is supposed to take 7 years to fill with average rainfall, and yet it overflowed (Dartmouth carryover spillage) in 2011 & 2016 with heavy rain within 6 months.

Irrigation development in the Mallee has doubled in the last 21 years (1997-2018) compared to the first 110 years (1887-1997).

1887-1997= 40,000 heactares

1997-2018= another 41,000 hectares,

81,000 in total.

2018 onwards = ?

Figures from Mallee CMA_

<https://mk0malleecmacomvmcpd.kinstacdn.com/wp-content/uploads/2019/07/2018-Mallee-Horticulture-Crop-Report-Final.pdf>

Key findings from the report

Table 2 shows the proportion permanent plantings, seasonal crops and vacant areas across the Mallee catchment from 1997 to 2018.

Table 2: Planting trends in the Mallee catchment from 1997 to 2018

Mallee catchment	1997	2003	2006	2009	2012	2015	2018
% Permanent	69%	70%	71%	71%	68%	67%	68%
% Seasonal	28%	24%	19%	9%	15%	16%	16%
% Vacant, not irrigated	3%	6%	10%	20%	17%	17%	15%
Total irrigable area (hectares)	40,325	51,350	59,450	72,255	75,280	76,245	81,150

Irrigation development - new and retired areas

The irrigable area in the Mallee catchment increased by 40,825 hectares; a 101% increase from 40,325 hectares in 1997 to 81,150 hectares in 2018. The net increase of 40,825 hectares was the balance of 42,715 hectares expansion and 1,890 hectares retired from irrigation.

Expansion was predominantly in the private diverter river reaches where 39,940 hectares of expansion occurred, while retirement predominantly occurred in the irrigation districts where 1,205 hectares were retired from irrigation between 1997 and 2018.

From 1997 to 2018, the largest growth in irrigable area occurred in the Boundary Bend and Wemen river reaches with expansion of 16,550 hectares and 10,550 hectares respectively.

Irrigation methods

In 2018, drippers were the dominant irrigation method in all of the study areas except for the Robinvale irrigation district where lowlevel sprinklers were dominant and in the Murrayville GMA where pivots were the dominant method.

Drip irrigation was the dominant irrigation method from 2006 to 2018 across the Mallee catchment. Prior to this, overhead sprinklers were dominant in 2003 and furrow/flood irrigation in 1997.

The use of pressurised systems (drip, low level and overhead irrigation) increased from 61% of the irrigated area in 1997 to 97% in 2018. Gravity systems (furrow and flood) decreased from 39% of the irrigated area in 1997 to 3% in 2018.

Salinity impact zones (*does not apply to the Murrayville GMA*)

In 1997, the irrigable area in the Mallee catchment (excluding the Murrayville GMA) was predominantly (29%) in the high salinity impact zone, HIZ. However, from 2003 to 2018 it was predominantly in the lowest river salinity impact zone, L1, as most expansion in this period occurred in L1 and areas retired from irrigation were mostly in HIZ.

From 1997 to 2018, the irrigable area in HIZ decreased by 840 ha; a 7% decrease from 11,435 ha to 10,595 ha, while the area in LIZ (i.e. L1, L2, L3 and L4) increased by 39,875 ha; a 120% increase from 28,305 ha to 68,180 ha.

By 2018, the irrigable area in the Mallee catchment of 78,775 ha was 51% (40,470 ha) in L1, 20% (15,500 ha) in L2, 3% (2,480 ha) in L3, 12% (9,730 ha) in L4 and 13% (10,595 ha) in the high impact zone, HIZ.

Study area

The report covers twelve study areas in the Mallee catchment: five pumped irrigation districts, six river reaches of private diverters and the Murrayville Groundwater Management Area (GMA) as shown in Map 1. All references to the 'Mallee catchment' in this report refer to the twelve study areas (i.e. includes the Murrayville GMA).

Pumped irrigation districts

1. Nyah irrigation district
2. Robinvale irrigation district
3. Red Cliffs irrigation district
4. Mildura irrigation district
5. Merbein irrigation district

River reaches (private diverters)

6. Nyah river reach - Woorinen South to the Wakool River junction
7. Boundary Bend river reach - Wakool River junction to the Euston weir
8. Wemen river reach - Euston weir to Liparoo
9. Colignan river reach - Colignan to Yatpool
10. Mildura river reach - Mildura to Lock 10
11. Lock 10 to SA river reach - Lock 10 to the South Australian border

Murrayville Groundwater Management Area (GMA)

12. Murrayville GMA



Map 1: Map of the twelve study areas in the Mallee catchment

1. Mallee catchment summary

In summary for irrigated horticulture in the Mallee catchment from 1997 to 2018

Crop types 2018

In 2018, dominant plantings in the Mallee catchment were:

1. almonds; 24,485 ha (30% of the irrigable area);
2. table grapes; 8,965 ha (11% of the irrigable area);
3. wine grapes; 8,050 ha (10% of the irrigable area);
4. field crops; 5,685 ha (7% of the irrigable area);
5. citrus; 4,135 ha (5% of the irrigable area);
6. olives; 3,815 ha (5% of the irrigable area);
7. potatoes; 3,410 ha (4% of the irrigable area);
8. dried grapes; 3,145 ha (4% of the irrigable area); and
9. vegetables other than carrots and potatoes¹, 2,685 ha (3% of the irrigable area).

Crop types 1997 to 2018

Almond trees were the dominant crop from 2009 to 2018, whereas wine grape plantings were dominant from 1997 to 2006.

The main changes to plantings from 1997 to 2018 were:

- almond trees increased by 22,740 ha; from 1,745 ha to 24,485 ha;
- table grape plantings increased by 4,810 ha; from 4,155 ha to 8,965 ha;
- olive trees increased by 3,655 ha; from 160 ha to 3,815 ha;
- dried grape plantings decreased by 3,195 ha; from 6,340 ha to 3,145 ha; and
- wine grapes decreased by 1,915 ha; from 9,965 ha to 8,050 ha.

Development of permanent plantings (new or redeveloped in the previous three years)

Development activity with respect to permanent plantings continued to increase from 1997 to 2009; 21% of plantings were new or redeveloped² in 1997 and 31% in 2009. Development fell to 9% in 2012 and 10% in 2015, but by 2018, activity was again on the increase with at least 17% (9,295 ha) of new plantings, predominantly:

1. almonds (4,100 ha);
2. table grapes (2,200 ha);
3. citrus (640 ha);
4. olives (620 ha);
5. dried grapes (610 ha);
6. wine grapes (320 ha); and
7. pistachios (200 ha).

¹ Carrots and potatoes are significant crops in the Mallee catchment and are reported on separately to 'other' vegetables

² New or redeveloped within the previous three years

In summary for irrigated horticulture in the Mallee catchment

Planting trends - permanent plantings, seasonal crops and vacant areas

In 2018, the Mallee catchment had an irrigable area of 81,150 ha comprising:

- 68% (55,470 ha) permanent plantings;
- 16% (13,320 ha) seasonal crops; and
- 15% (12,360 ha) vacant, not irrigated areas.

From 1997 to 2018:

- permanent plantings decreased from 69% to 68% of the irrigable area;
- seasonal crops decreased from 28% to 16% of the irrigable area; and
- vacant, not irrigated areas increased from 3% to 15% of the irrigable area.

Private diverters accounted for 79% of permanent plantings and 73% of seasonal crops in 2018.

Irrigation development - new and retired areas

The irrigable area in the Mallee catchment increased by 40,825 ha, a 101% increase from 40,325 ha in 1997 to 81,150 ha in 2018. The net increase of 40,825 ha was the balance of 42,715 ha expansion and 1,890 ha retired from irrigation.

Expansion was predominantly in the private diverter river reaches (39,940 ha) while retirement predominantly occurred in the irrigation districts (1,205 ha).

Irrigation methods

Drip irrigation was the dominant irrigation method in the Mallee catchment from 2006 to 2018. Prior to 2006, overhead sprinklers were dominant in 2003 and furrow irrigation was dominant in 1997.

In 2018, the irrigable area of 81,150 ha comprised:

- 58% (47,105 ha) drip irrigation;
- 10% (8,495 ha) lowlevel irrigation;
- 13% (10,930 ha) overhead sprinklers and pivots;
- 3% (2,260 ha) furrow irrigation; and
- 15% (12,360 ha) vacant, not irrigated.

From 1997 to 2018 (Figure 2):

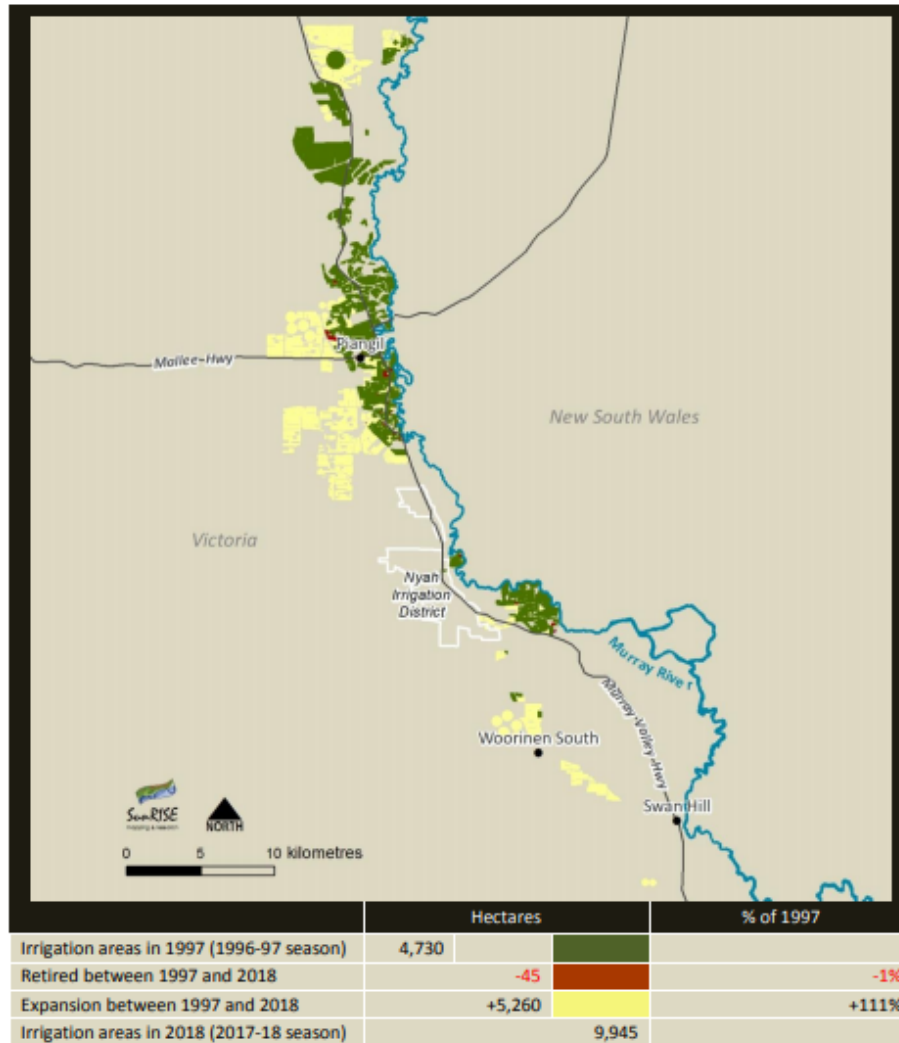
- drip irrigation increased by 43,140 ha; a 1,088% increase from 3,965 ha to 47,105 ha;
- lowlevel irrigation increased by 2,590 ha; a 44% increase from 5,905 ha to 8,495 ha;
- overhead irrigation decreased by 3,105 ha; a 22% decrease from 14,035 ha to 10,930 ha; and
- furrow irrigation decreased by 12,970 ha, an 85% decrease from 15,230 ha to 2,260 ha.

3.2.5 Nyah river reach - irrigation development

Map 13 shows irrigation development, from 1997 to 2018, in the Nyah river reach with respect to new development (expansion) and areas retired²⁹ from irrigation.

- The irrigable area increased by 5,215 ha; a 110% increase from 4,730 ha in 1997 to 9,945 ha in 2018.
- The net increase of 5,215 ha comprised 45 ha retired from irrigation and 5,260 ha of expansion.

Map 13: Nyah river reach - irrigation development from 1997 to 2018



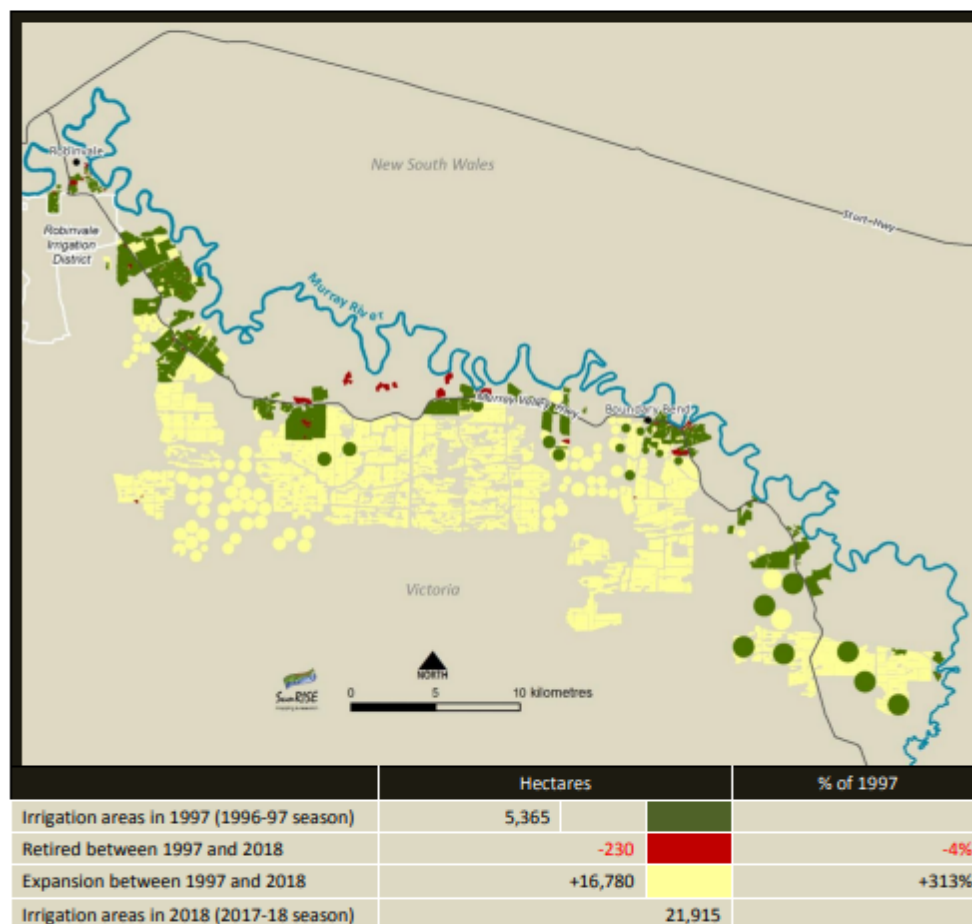
²⁹ Retired areas were previously irrigated but have undergone a change in land use that precludes use for irrigation e.g. urban development, housing, sheds, dams and land set aside for conservation purposes.

3.3.5 Boundary Bend river reach - irrigation development

Map 15 shows irrigation development from 1997 to 2018 in the Boundary Bend river reach with respect to new development (expansion) and areas retired³¹ from irrigation.

- The irrigable area increased by 16,550 ha, a 308% increase from 5,365 ha in 1997 to 21,915 ha in 2018.
- The net increase of 16,550 ha comprised 230 ha retired from irrigation and 16,780 ha of expansion.

Map 15: Boundary Bend river reach - irrigation development from 1997 to 2018



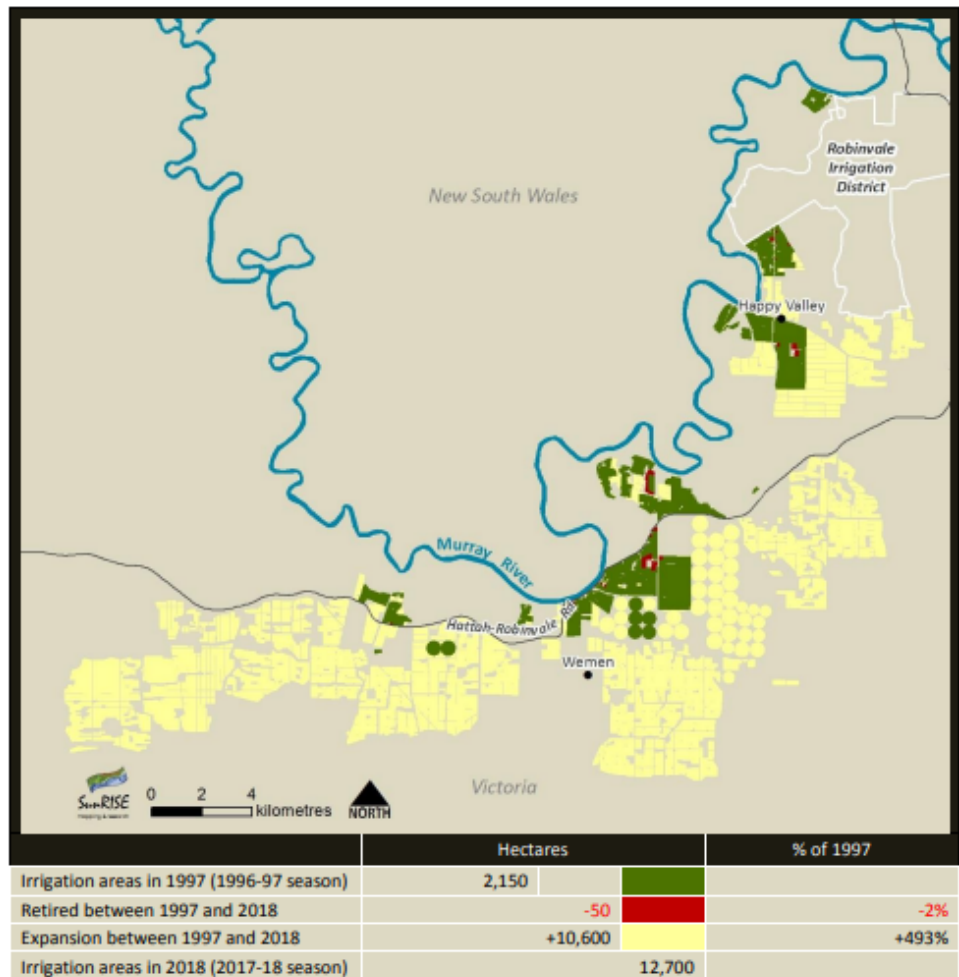
³¹ Retired areas were previously irrigated but have undergone a change in land use that precludes use for irrigation e.g. urban development, housing, sheds, dams and land set aside for conservation purposes.

3.4.5 Wemen river reach - irrigation development

Map 17 shows irrigation development from 1997 to 2018 in the Wemen river reach with respect to new development (expansion) and areas retired³⁴ from irrigation.

- The irrigable area increased by 10,550 ha, a 491% increase from 2,150 ha in 1997 to 12,700 ha in 2018.
- The net increase of 10,550 ha comprised 50 ha retired from irrigation and 10,600 ha of expansion.

Map 17: Wemen river reach - irrigation development from 1997 to 2018



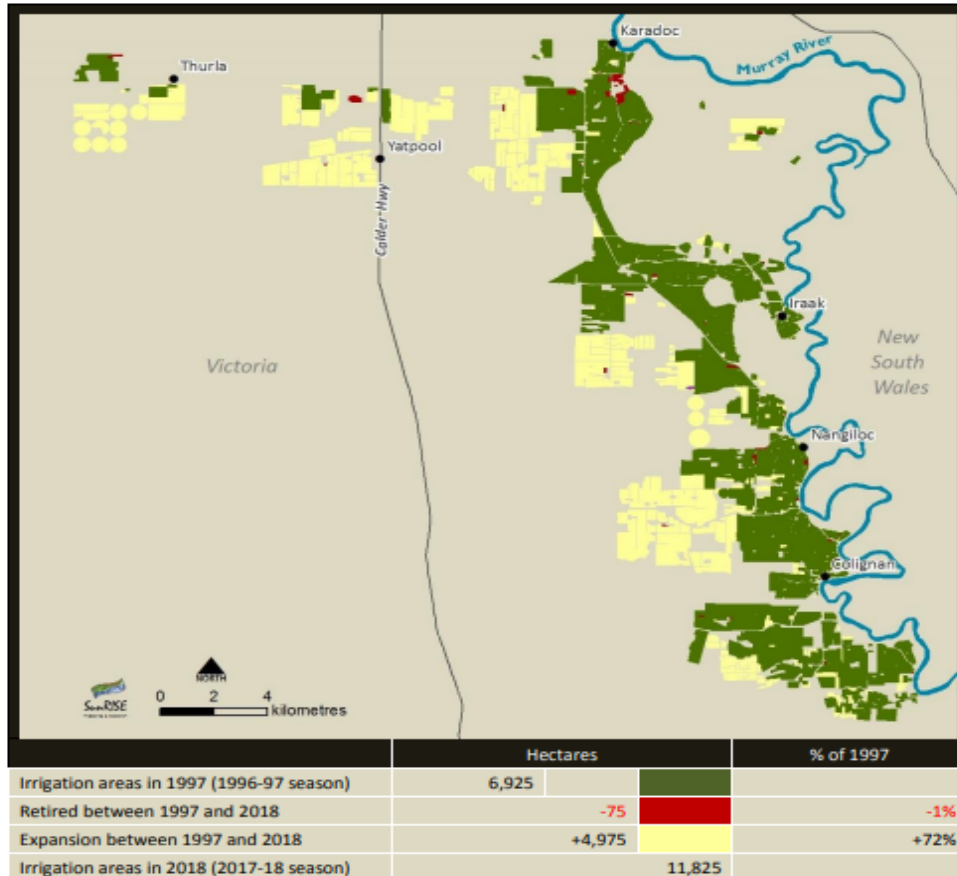
³⁴ Retired areas were previously irrigated but have undergone a change in land use that precludes use for irrigation e.g. urban development, housing, sheds, dams and land set aside for conservation purposes.

3.5.5 Colignan river reach - irrigation development

Map 19 shows irrigation development from 1997 to 2018 in the Colignan river reach with respect to new development (expansion) and areas retired³⁶ from irrigation.

- The irrigable area increased by 4,900 ha, a 71% increase from 6,925 ha in 1997 to 11,825 ha in 2018.
- The net increase of 4,900 ha comprised 75 ha retired from irrigation and 4,975 ha of expansion.

Map 19: Colignan river reach - irrigation development from 1997 to 2018



³⁶ Retired areas were previously irrigated but have undergone a change in land use that precludes use for irrigation e.g. urban development, housing, sheds, dams and land set aside for conservation purposes.

The key messages from the information above are as follows

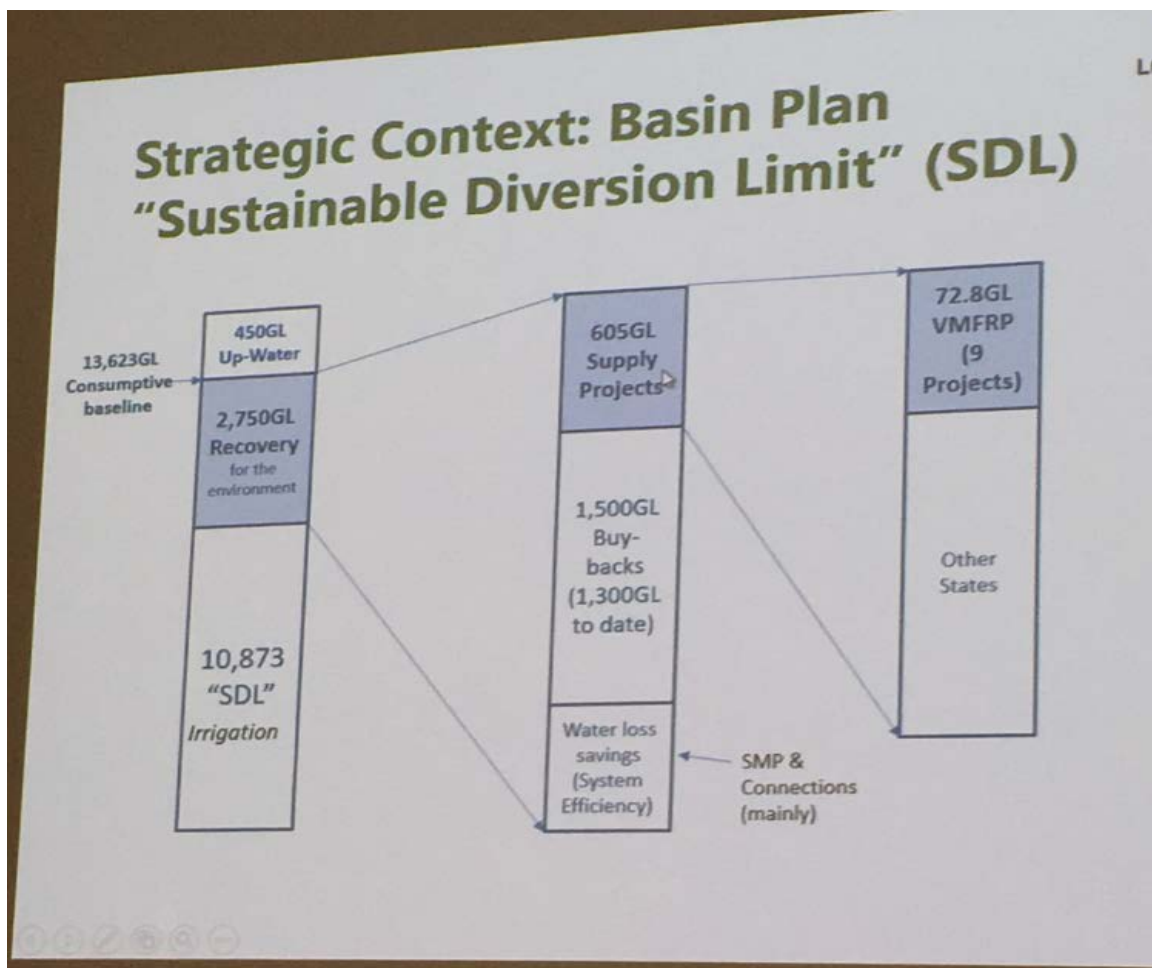
From 1997 to 2018 there has been

- A 101% increase in irrigation development in the Mallee Catchment area
- Going from 40325ha in 1997 to 81150ha in 2018
- With permanent planting accounting for 68% of the total irrigated area
- No water storage infrastructure developments since completion of Dartmouth dam in 1979.

This is a powerful example of the increased pressure put on the water trade market in this area, let alone the whole river system!

Differing state rules and environmental flows

- -AUL licenses halted in Victoria in 2019, but plantings will continue until those growers/developers use up their AUL.
- NSW and SA still continue to give out AUL.
- The unbundling of water, has given the opportunity for rapid irrigation development and expansion in the Mallee catchment area.
- Previous unused (sleeping water licences) has been bought up, traded, and used mostly in the Mallee area.
- In the same time, the MDBA plan has been implemented with 25% of irrigation water, given to the environment. (Mostly previously unused water)



Constrains in the River System (Murray)

- The average river flow past Euston/Robinvale is 6-7,000 mega litres per day.
- It is estimated with current and upcoming plantations, 14-15,000ML per day will be needed in this area in peak watering periods. (October -January)
- The maximum amount to flow through the Barmah Choke is 10,000ML per day.
- This means the river will be getting sucked dry in between Swan Hill, Euston/Robinvale and Mildura.
- Faster flow is causing erosion on the river banks in certain areas.

- A way around this, the river operators have earlier releases of water early in the irrigation season. (16,000 ml/day past Euston weir). This is causing flood in some areas. Resulting in lost Victorian allocation water to environmental flooding. Or is this actually recorded as “unregulated” usage for environmental water as it should be?

Water is then banked up in this area for use in the peak time.

For the Mallee Catchment area, there will now be restrictions put on irrigators in peak periods and extreme heat periods. (Eg: possibility of LMW pumps running at 80% capacity on certain days between November-January). This will also apply to private diverters (eg. irrigators asked not to pump straight from the river on certain days if the river is low).

- any water that flows past here, goes into Lake Victoria for South Australian allocation.
- When the lake is empty, any excess water going into the lake is taken as SA allocation. No loss to Vic allocation water.
- But, when Lake Victoria is full, any excess water that overflows from the lake is FREE water for SA or NSW, but lost Victorian allocated water.
- already this season there has been an internal spill in Lake Victoria. 59,000ML of Victorian irrigators water has spilled over into NSW share of the Lake.
- ***This equates to approximately \$60m worth of water on current temporary water prices.***

Mismanagement

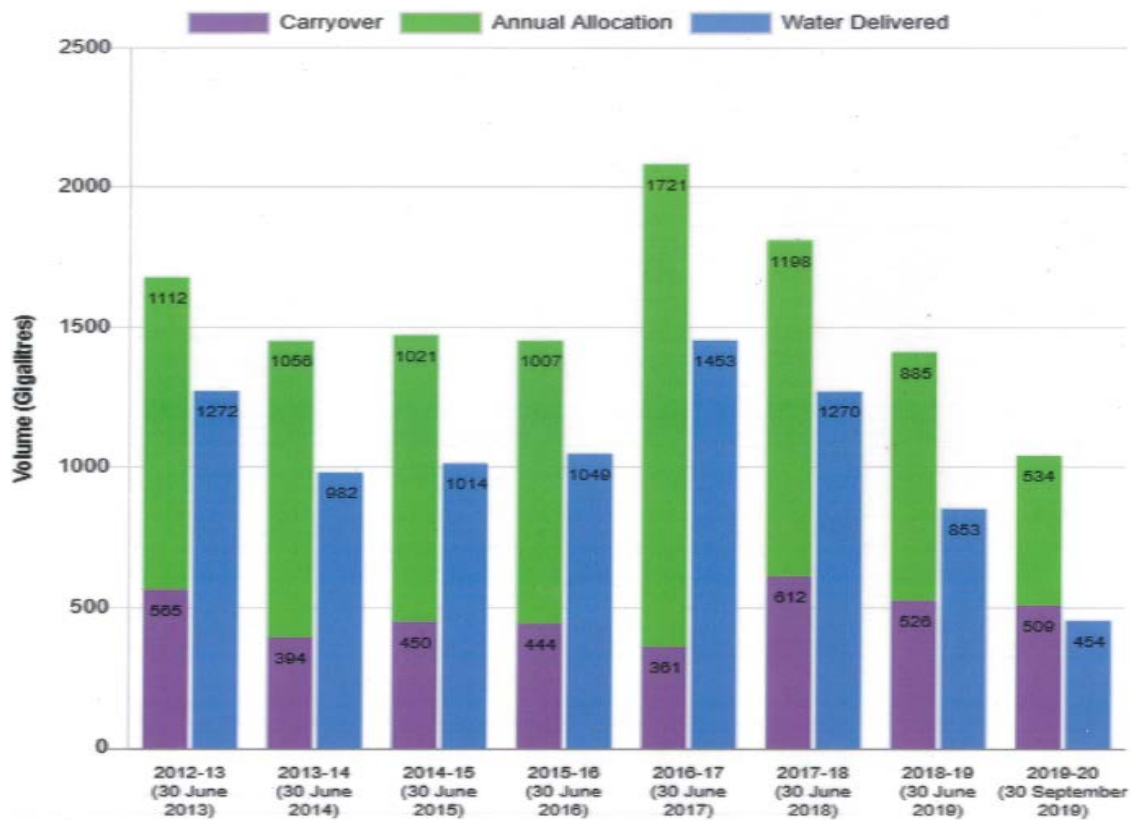
- Between October 1st, 2016 until the 11th December 2016, in the flood period, we have calculated that 5,188,118 ML (5,188 GL) flowed past Euston weir. riverdata.mdba.gov.au
- An average of around 72,000ML per day. (Every day flows of over 40,000ML /day with a peak on 14th November at 113,302ML /day, in that time period).
- Given that a ‘normal high river flow’ through Euston weir is around 15,000ML per day and allow for Evaporation losses, etc, that means that there would be between 3,800-4,000GL unaccounted for and excess water.
- That water obviously flooded into creeks, lakes, etc, and ultimately out to sea.

Was any of that water accounted for as Environmental water allocation?

If so how much?

The Commonwealth Environmental water holders were able to carry over 361 GL into the 2016-17 season when all irrigators lost all of their carryover water in October that year. This is also a key driver in the water trade market, as there is a double standard on the same asset being a Water entitlement, dependant on the owner of the entitlement (Environmental Water Holder or Irrigator)

Commonwealth Environmental Water Availability and Use



In the Mallee Catchment area, at 81,000 hectares at the end of 2018, using on average 10ML per hectare, that's 800,000ML of water used per year. So 5 years' worth of water flowed past in just 2 and a half months that was unaccounted for.

Currently, as it stands the Victorian environmental holders have more water for the season in the Murray system, more so than Victorian Irrigators.

<https://waterregister.vic.gov.au/water-availability-and-use/available-water-by-owner-type>

Future Planning

Tim Flannery on Landline in 2007:

PROFESSOR TIM FLANNERY: We're already seeing the initial impacts and they include a decline in the winter rainfall zone across southern Australia, which is clearly an impact of climate change, but also a decrease in run-off. Although we're getting say a 20 per cent decrease in rainfall in some areas of Australia, that's translating to a 60 per cent decrease in the run-off into the dams and rivers. That's because the soil is warmer because of global warming and the plants are under more stress and therefore using more moisture. So even the rain that falls isn't actually going to fill our dams and our river systems, and that's a real worry for the people in the bush. If that trend continues then I think we're going to have serious problems, particularly for irrigation.

Flannery again in 2007:

Over the past 50 years southern Australia has lost about 20 per cent of its rainfall, and one cause is almost certainly global warming. Similar losses have been experienced in eastern Australia, and although the science is less certain it is probable that global warming is behind these losses too. But by far the most dangerous trend is the decline in the flow of Australian rivers: it has fallen by around 70 per cent in recent decades, so dams no longer fill even when it does rain ...

Here is Flannery "clarifying" his comments last year - by confirming them:

As the soil warms up more of the rain that falls evaporates and less goes into the dams and the point that I was trying to make was that even the rain that was falling then previously that was able to fill the dams in future wouldn't do that.

There is contradiction around the discussion of Climate change, which is contributing to a total refusal from Governments to safeguard future water security for the Murray Darling System. On one hand, the climate change discussion revolves data pointing towards longer periods of dry years and heavier periods of rain in wet years. But, governments refuse to invest in storages to capitalize on the later part of the data. With every drought that breaks, water storages return to full (in most cases spill). This fact is lost on policy makers. **If they were truly looking at what it would take to secure Australia's water security leading into an unknown climate, not increasing water storages, by proportion of water usage will lead to system and market failure!**

- During the Millennium drought irrigators were faced with water restrictions on allocation after 10 years of drought
- Now here we are in the same situation after just 3 years of drought?
- We now have double the consumption compared to 20 years ago.
- At the same time, 25% of that water in the river taken out for environmental purposes and now being used to flood areas that got natural flood from the river in 2011 & 2016.

Going by the water Act, Commonwealth Environmental Water can only be traded out or sold when they have excess water with risk of spill, meaning a loss of carryover, or for critical human needs. In a case of extreme low allocations there is provision for them to go onto the water market and buy temp water in. Which means again more competition on the market against Irrigators.

Is this correct, and would this also apply to the state Environmental water holders? Are they also able to future buy / trade water?

IVT (Inter Valley Trading) Goulburn to Murray review.

This of course will cause temp water prices in the Murray system to continue to go through the roof as there will be less water available on the market place.

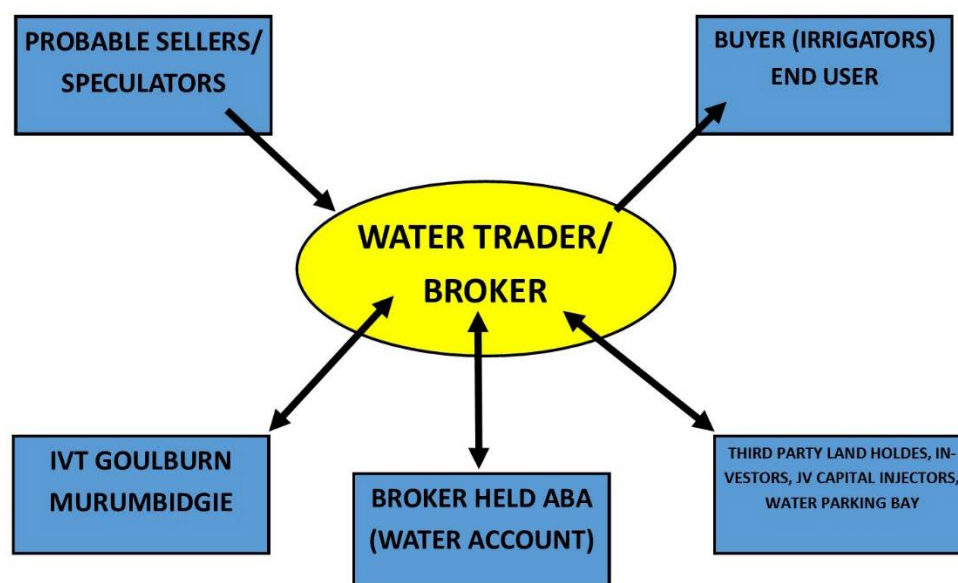
In the long run, it's quite possible to see temp water prices hitting over \$2000/ mg, which will make it not viable to continue and that's only if that water will be physically available.

This will cause farmers to close up their farms, leading to widespread devastation to horticultural industry's and the communities which they sustain.

When there is an announcement of water to be traded from the Goulburn system, it's too late for the average farmer. This is because large Corporate water traders buy up most of that cheaper water, and then hold the farmers to ransom as they know that family famers/irrigators (mainly with permanent plantings) need to use that water. These farmers/irrigators have no choice but to irrigate their plantings to keep them alive and cannot mothball patches. So these irrigators will eventually buy it off them at inflated prices.

Water traders have a 12-month period in which to manipulate the water market. This is exacerbated when there are low allocations.

The table below illustrates how water move through a trader/broker, and the mechanisms used to gain & hold tradable water.

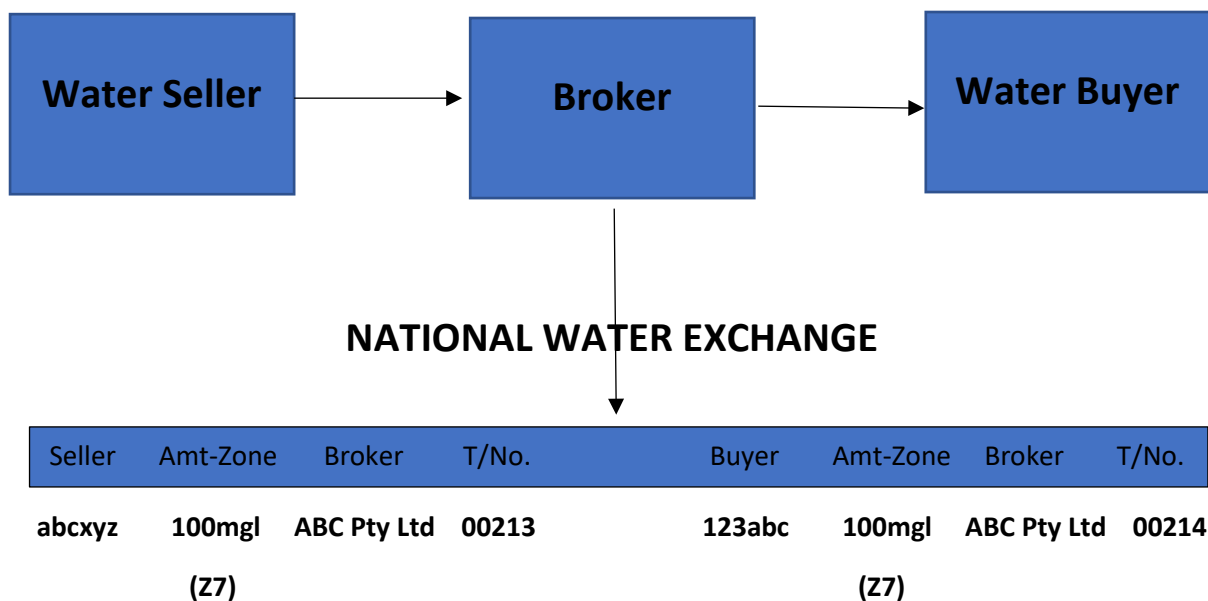


A possible solution

To create a National Water Exchange. This would be a central surveillance point, allowing real time access to live trade data allowing the appropriate authorities to identify specific trade activity that could lead to market manipulation/shortening or further predatory behaviour. The portal could be programmed to have a number of algorithms to identify what could be deemed as irregular trade activity.

NATIONAL WATER EXCHANGE

(live online portal)



Original MDBA plan, critical compromises made

If the Mallee Catchment basin area along the river is to continue into the future to be Victoria and Australia's food bowl capital, is it too much to ask for some river infrastructure upgrades?

In John Howard's speech to the press club in 2007 when announcing the new outlining "A Plan for Water Security", gave a 10-point plan.

Number 7 reads: "major engineering works at key sites in the Murray Darling Basin such as the Barmah choke and Menindee Lakes."

He also went on to say... "This is especially important in the Murray-Darling Basin where large-scale engineering works are required to improve water use efficiency and water trading options.

At the Barmah Choke, for example, there is an urgent need to alleviate channel capacity constraints to enable more effective delivery of irrigation and environmental water. Greater water mobility will enhance the operation of water trading markets."

Also...” Water acquired by efficiency measures or direct purchase can in our highly variable climate both provide greater security for water users in dry years and provide substantially greater environmental flows in other years.”

Looks like these parts got left out of the plan.

https://www.theaustralian.com.au/news/howards-full-speech-to-the-national-press-club/news-story/cfd6aa4761027929545602a96dc04254?fbclid=IwAR2_1F0gs9xxt54wvWR6mn-akxiQ0FySg0MHU2l0mtJDpy8w_p9ZPloZJKc

Summarising the strain on the system

- There has been too much strain put on our river systems caused by rapid growth, water corporations, and mismanagement.

In the last 20 years, we have seen;

- 100% growth in Agriculture in the Mallee Catchment basin area, so that’s double water consumption.
- implementation of the MDB plan
- the unbundling of water from the land. Water that wasn’t used can then be sold and used.
- 2750GL taken out of the system for environmental holders. That water was previously unused but is now being used.
- Water traders entering the market and manipulating the market price.
- 2 years of low inflows, right after the high inflows of 2016.

There is little wonder we are at the point we have reached with the mismanagement of governments, and inability to even consider building more storages.

Conclusion

The above document is a collaboration of thoughts, experiences, observations, and facts, directed from a group of Family Farmers, here in Robinvale, Victoria. We worked closely to ensure that the information provided in the document is a relevant response to the Murray-Darling Basin water market Inquiry issue paper. The information which we have compiled in this response is truly a reflection of what we feel are the most important contributing factors from where we sit within the Murray Darling Basin.

It is important to note, that the singular act of transacting Water is most probably the simplest part for all parties to deal with. It is all the surrounding factors which have contributed to the problem we are facing now. But, moving forward with a fair and sustainable Water Trading Market is critical to the future of Family Farming in this country.

Family based enterprises like ours, are the backbone of regional communities and drive the districts economy (let alone the nation). Without proper solutions to the current problems with Water Trading rules & Regulations, it is our fear that Family Farming Businesses (as a concept) will not survive too many more drought’s. **The time is now to fix it!**

Again we would like to thank the ACCC for conducting this inquiry. We hope that the findings lead to a more equitable, fair and sustainable water trading market for all irrigators.