

[2] WATER ALLOCATION (CEO)

File Number: 17/04/01
Officer: Phil Pearce
Position Title: Chief Executive Officer

1. Summary

This report provides an overview of the importance of horticulture to the Mildura and wider region and the impact of continuing low water allocation to the region.

The content of the report has been drawn primarily from the following documents:

- Meeting the Crisis in the Murray Darling Basin, Horticulture Council Australia, 30 May 2007
- Survival of Northern Victoria Permanent Horticulture, Mildura Horticultural Group, 4 September 2007
- Government Drought Assistance Water Rate Relief, Mildura Rural City Council, 17 September 2007
- Estimates of the Economic Impact of Low Water Allocation on the Mildura Horticultural Region, Mildura Rural City Council, 6 February 2008.

2. Recommendation

THAT:

1. **Council continue to strongly advocate on behalf of the community on the water issues outlined in this report and other water related matters as they arise.**

3. Background

3.1 2008/09 Water Allocation Advice

The following is a copy of a Press Release issued by Goulburn Murray Water on 15 February 2008 providing initial advice on water allocation for 2008/09:

'Goulburn-Murray Water today released the outlook for seasonal allocations in the 2008/09 season. Dry conditions have continued through the 2007/08 season, with the inflows during spring well below average in most systems. All northern Victorian systems have seasonal allocations of less than 100% of high-reliability water shares. The Goulburn, Campaspe and Loddon systems allocations are higher than at the same time last year, but the Murray system has its lowest allocation ever.

The 2008/09 season is likely to commence with very low reserves in all storages as water allocated this season is delivered or held as carryover by customers. Storage inflows after March this year will be reserved for use during 2008/09, but significant winter and spring inflows are the key elements to overcoming a potential water shortage. Next season's irrigation allocations will rely almost entirely on the inflows between July and November.

The latest Bureau of Meteorology climate outlook provides a 50:50 chance of exceeding the median monthly rainfall during the next three months to April 2008, but this does not provide a reliable indicator for the critical inflow period.

Outlook for the Start of the 2008/09 Season

Average inflow conditions will not provide enough water to allocate water for irrigation on 1 July 2008. All systems will begin the 2008/09 season with zero seasonal allocations.

By 15 August 2008, average inflows are expected to allow non-zero allocations in the Murray, Goulburn, Campaspe and Loddon systems. The Broken system will remain at zero allocation.

The 15 August 2008 seasonal outlook is summarised in the table below.

Outlook for 15 August 2008 Seasonal Allocations (% of high-reliability water share)

Inflow Conditions	Murray	Broken	Goulburn	Campaspe	Loddon
Wet	100%	100%*	90%	100%	100%*
Average	17%	0%	31%	22%	100%
Dry	0%	0%	0%	0%	0%

* Low-reliability water shares allocated

The terms in this and following tables mean:

Wet	Inflow volumes that are higher in 1 year out of every 10 years
Average	Inflow volumes that are higher in 5 years out of every 10 years
Dry	Inflow volumes that are higher in 9 years out of every 10 years

Spring 2008/09

As stated previously, the July to November inflow period is critical to supporting irrigation allocations during drought conditions. The table below presents the outlook for 15 October 2008 seasonal allocations and demonstrates that dry conditions during the July to November period cause little to no improvement in seasonal allocations.

Outlook for 15 October 2008 Seasonal Allocations (% of high-reliability water share)

Inflow Conditions	Murray	Broken	Goulburn	Campaspe	Loddon
Wet	100%	100%*	100%*	100%*	100%*
Average	63%	100%*	82%	100%	100%*
Dry	0%	0%	20%	0%	0%

* Low-reliability water shares allocated

The February 2008 Allocation Outlook

The outlook for the 15 February 2009 seasonal allocations are summarised in the table below.

Outlook for 15 February 2009 Seasonal Allocations (% of high-reliability water share)

Inflow Conditions	Murray	Broken	Goulburn	Campaspe	Loddon
Wet	100%*	100%*	100%*	100%*	100%*
Average	100%	100%*	100%*	100%*	100%*
Dry	45%	0%	45%	0%	64%

* Low-reliability water shares allocated

Goulburn-Murray Water will update the allocation outlook for 2008/09 on Thursday 15 May 2008. The first seasonal allocations for 2008/09 will be announced on Tuesday 1 July 2008.'

3.2 Region at Risk

The Lower Murray Water Irrigation Region stretches from Nyah to the South Australian Border. This region includes private diversion areas and the pumped districts of Mildura, Merbein, Robinvale and Red Cliffs. This region is most exposed as its economy is fundamentally based on permanent plantings.

The Nyah to SA Border Region is estimated to be more than two-thirds of Northern Victoria's permanent plantings. The table below illustrates the areas and importance of permanent plantings in Northern Victoria.

Table -1 Estimated Area and Revenue of Horticulture at Risk in 2001 and 2006

Region	Ha Permanent Plantings (year surveyed)	Ha vegetables	% by revenue of Australian production fruit, vegetables and grapes	Supply system	Reference source
Nyah to SA Border	29,927 (2001) 41,915 (2006)	3,156 (2001) 6,085 (2006)	10.2% (2001) 12+% (est. 2006)	Murray	Sunrise 21, 2007 and Meyer 2005
Loddon-Campaspe	2,804 (2001)	2,453 (2001)	1.2% (2001)	Murray	Meyer 2005
Goulburn-Broken	11,193 (2001)	3,661(2001)	6.5% (2001)	Murray and Goulburn	Meyer 2005
<i>Total Northern Victoria</i>	<i>43,924 (2001) 60,000 (est 2006)</i>	<i>9,270 (2001) 14,000 (2006)</i>	<i>17.9% (2001) 20+% (est. 2006)</i>	<i>Murray and Goulburn</i>	<i>Meyer 2005</i>
<i>Total Murray & Murrumbidgee basins (includes NSW and SA)</i>	<i>102,379 (2001)</i>		<i>40.7% (2001)</i>		<i>Meyer 2005</i>

- The areas sourced from Meyer are as at 2001. Sunrise 21 areas are as of 2006. Estimated numbers are shown.
- Areas have expanded from 2001 to 2006, for example in Loddon Campaspe the area for permanent plantings from Meyer appears not to include the Olive plantation at Boort (2,777 ha) established in 2000/1. Plus Nyah to Border permanent plantings has grown by 12,000 ha.

In summary the production at risk is estimated to be:-

- 12% national production of fruit, vegetables and grapes in Victorian Nyah to Border
- 20% national production of fruit, vegetables and grapes in Northern Victoria.
- 40% of national production of fruit, vegetables and grapes including SA, and NSW Murray and Murrumbidgee valleys.
- 50% of all permanent plantings in the Murray and Murrumbidgee valleys is in Northern Victoria

This situation is of national importance and will have a significant impact on the national economy.

Predicted economic consequence of no intervention

There are 42,000 ha of permanent plantings in this region, which, if all needed to be replaced, would cost \$840 M (at \$20,000/ha recovery cost). This excludes the value of lost production.

This section considers the economic consequence in the Nyah to Border Victorian region considering both recovery cost and future loss of gross margin for three scenarios of 15%, 30% and 50% water allocations. A fourth scenario of 100% allocation has been provided as a reference point.

There will be a mixture of growers' responses including:-

- Full production
- Water purchase
- Mothballing vineyards/orchards for future survival but nil crop
- Abandonment and recovery costs

Table 2 Estimates of Impacts for Victorian Nyah to Border Production

Mid season allocation	Estimated ML used Including allowance for carry over and net water purchase into the region GL	GVAP farm gate production \$ M in 2007/8 estimated	Total Cost including 2007/8 and future years relative to 100% allocation Includes cost of bringing forward replanting (NPV at 8% 30 yrs) \$ M
100%	418	461	0
50%	290	325	315
30%	211	220	613
15%	159	137	868

The total cost is estimated to be:

- \$300 M to \$900 M on farms in the Nyah to Border Region
- \$450 M to \$1.4 B on horticultural farms in Northern Victoria¹
- \$900 M to \$2.8 B on horticultural farms (fruit and vegetable industry including grapes) across the Murray and Murrumbidgee Basins in SA, NSW and Victoria. ²

¹ From estimate that Northern Victoria is 1.5 times the impact of Nyah to Border (from previous section) and assumes similar allocations

Social impacts - Jobs at Risk

It is estimated that the impacts above would create the following job losses.

Table 3 Estimates of Impacts for Victorian Nyah to Border Production

Mid season allocation	No. growers	No. farm workers (FTE including casuals) (assumes 1 worker per grower)	Indirect employment (assumes 2 workers per grower)	Total jobs	Total Job loss
100%	2,000	2,000	4,000	8,000	0
50%	1,600	1,600	3,200	6,400	1,600
30%	1,200	1,200	2,400	4,800	3,200
15%	1,000	1,000	2,000	4,000	4,000

Note: There are 17,477 wage and salary earners in Mildura Rural City Council and 7,379 in Swan Hill Council (ABS 2003).

The total job losses are estimated at:

- 1,600 to 4,000 in Nyah to Border
- 2,400 to 6,000 across Northern Victoria³
- 4,800 to 12,000 on horticultural farms (fruit and vegetable industry including grapes) across the Murray and Murrumbidgee Basins in SA, NSW and Victoria. ⁴

Water market and water losses

There are two potential options to source water

- via the market
- via capturing of losses in G-MW system.

Given very low allocations, it is likely that the water market will be too small to enable trade to adequately protect social and economic infrastructure associated with permanent plantings.

² From estimate that this value is double that of Northern Victoria (from previous section) and assumes similar allocations

³ From estimate that Northern Victoria is 1.5 times the impact of Nyah to Border (from previous section)

⁴ From estimate that this value is double that of Northern Victoria (from previous section)

In recent years, large corporate Managed Investment Schemes have purchased most permanent water in the market. There is a real risk that these firms will be able to fund water purchases more easily and this will add to the significant social tensions in the community.

The water losses in the G-MW system are of the order of 780 GL. Water losses are likely to exceed the water allocation available and without intervention there can be no increase in the pool of water available by capturing losses such as by shortening the season.

There is precedence for State Government intervention that was used in 2006 in the Coliban system, where the Minister qualified rights for commercial use over non-commercial use.

As a “once off measure”, intervention could include, amongst other options, which need further development:

- Offering Goulburn Murray Water customer groups the opportunity to take compensation for a shortened irrigation season and re-allocate the saved supply system losses to a dedicated pool for permanent plantings;
- That this pool be allocated in some way to growers with irrigated permanent plantings across Northern Victoria; on the condition that these growers do not sell any water or return unused water (forfeited) by June 30th ;
- For example, the allocation to permanent plantings may be based on proof of ownership of permanent plantings, issued in proportion to the entitlement held, up to 50% of entitlement.
- That G-MW customers be able to continue to sell their allocation on the open market and also receive compensation based on the value of production from the shortened water season;
- That allocation for permanent plantings be “pegged” at 50% until allocations equalise at 50% across the Murray System.

There is also a public good benefit in transferring water “losses” into productive use, that need to be considered in times of crisis.

Level of Existing losses in G-MW

The Goulburn Murray Irrigation District contains the following potential losses that may be captured if not supplied⁵:-

⁵ Sourced from Our Water Our Future Modernising Victoria's Food Bowl Irrigation Modernisation June 2007 Capital projects Division DSE and DIIRD

Table 4 G-MW Estimates of losses from DSE/DIIRD 2007

System	Losses (for reduced inflows)
Goulburn	418 GL
Murray	362 GL
Total	780 GL

Capture of losses to achieve allocations

The table below shows the % of losses needed to achieve a 50% allocation for Nyah to Border.

Table 5 Transfer of G-MW losses to achieve 50% allocation for permanent plantings in Nyah to Border

Allocation	Estimated ML used Including allowance for carry over and net water purchase into the region GL	Pool made available to Nyah to Border from G-MW losses to achieve an effective 50% or 290 GL use	% of 780 GL G-MW losses required to be captured
50%	290	0	0
30% increased to 50%	211	79	10%
15% increased to 50%	159	131	17%

Additional losses would be required to be captured to service other areas of permanent plantings.

Benefits of making pool available to permanent plantings

The benefits of this course of action are outlined below.

Table 6 Benefits of intervention to achieve a 50% allocation for permanent plantings in Vic Nyah to Border

Allocation	Intervention	Cost of no intervention	Benefit of intervention
	Total Regional Cost If 50% achieved (NPV at 8% 30 yrs) \$ M	(from Section 0) no change to 15% and 30% \$ M	(difference) to achieve 50% \$ M
30% increased to 50%	315	613	298
15% increased to 50%	315	868	552

A \$315 M cost would still cause significant hardship for the Nyah to Border region, but it would be half the cost of a 30% allocation and be a third of the cost of a 15% allocation.

Similar levels of benefits would be expected if the same package were made available to permanent plantings in other Northern Victorian regions. ie the benefit at 1.5 times the Nyah to Border Region would be approximately \$450 M to \$830 M. This assumes all these areas can be supplied.

Impacts on G-MW Districts

The table below illustrates the % of losses needing to be captured for all Northern Victorian permanent plantings.

Table 7 Impacts of intervention on G-MW losses to achieve a 50% allocation for permanent plantings in all of Northern Victoria

Allocation	Intervention GL needed for Nyah to Border	GL needed for all of Northern Victorias permanent plantings	% of 780 GL losses needed for all Northern Vic permanent plantings
30% increased to 50%	79	118	15%
15% increased to 50%	131	197	25%

The current low allocations are having severe impacts in G-MW districts. In a year of low allocations it is expected that most water will be supplied to the dairy industry. These are capital-intensive businesses and the issue of non-supply to convert losses into allocation is very difficult. However the recovery cost is not as dire as permanent plantings.

The intent would be to ensure the compensation offered was more than adequate to cover the cost of feed replacement so that the dairy industry can maintain production as much as possible. In effect the compensation should pay the full value of production lost. The table below estimates the impact in G-MW assuming:-

- the cost is entirely borne by the dairy industry
- for a 1% reduction in losses, there is a 1% reduction in season duration and a 1% reduction in dairy GVAP.
- any future year recover costs are assumed to be small and not included.

Table 8 Estimated Impacts of intervention on Dairy Industry to achieve a 50% allocation for permanent plantings in all of Northern Victoria

Water Allocation	% Dairy GVAP achieved in low allocation after feed purchase (estimated)	Dairy GVAP expected before Intervention	% season and production lost by Intervention	GVAP dairy after intervention	Cost
100%	100%	\$1,219 M	n/a	n/a	0
50%	80%	\$976 M	n/a	n/a	0
30%	60%	\$732 M	15%	\$621 M	\$111 M
15%	45%	\$549 M	25%	\$410 M	\$139 M

Model assumptions available as required.

In summary, from the above the cost of lost production in the dairy industry is expected to be of the order of \$100 to \$150 M. This compares with a benefit to Northern Victoria's permanent horticulture of \$450 M to \$830 M.

3.3 Economic Model Results

The table below indicates costs incurred in 2007/8 excluding recovery costs in future years.

Table 8 Estimates of Current Year costs at different final allocation scenarios

Victorian Mallee current years impact				
Final water allocation	\$ gross value annual production	\$ lost production	\$ total including additional purchase costs (estimated costs of water appendix)	cost water costs (estimated costs of see

100%	\$460,905,224	Not applicable	Not applicable
42% (Highest likely advised by G-MW 1/2/2008)	\$338,686,567	\$122,218,657	\$171,218,657
36% (G-MW announced allocation on 1/2/2008)	\$310,925,373	\$149,979,851	\$205,979,851

te Informal discussion with industry in January 2008 indicated that production for the 2008 harvest was expected to be reduced by 15% to 65% of long term expected tonnages, a higher % reduction for dried fruit and lower % reduction for wine grapes and citrus.

The 36% water allocation scenario above gives an overall reduction of around 33% in gross annual value of production, adjusting for different crop areas, this is probably similar impact to industry estimates. It is based on usage of 8 ML/ha on production areas (average of all crops mature plantings) and significant carry over and water purchases (enough to provide an additional 33% water).

The 36% allocation was the allocation at the time this report was prepared. This allocation has since risen to 42%, however it is considered that this will not have a significant impact on the production figures as the water has become available at the end of the growing season for most products. It is also likely that a percentage of this additional water will be carried over to next year.

The above figures are highly sensitive to the amount of water purchased to maintain production and assumptions made with regard to the relative areas that have full production, reduced production, mothballed or have had plantings removed.

The results show a lower economic impact than that estimated by RMCG Consulting in September 2007, due to different assumptions regarding water use of cropped area. The September report assumed 9 ML/ha/year for cropped areas (down from historical use of 9.7 ML/ha/year), while this report assumes 8 ML/ha.

The lower water use figures used in this report are based on anecdotal evidence regarding the very high levels of water efficiency being achieved on cropped areas during this season. This is due to the high value of water and its scarcity. However, such high levels of efficiency may be at the expense of low salt leaching and may not be sustainable over a number of years. There are also reports of a light crop due to perhaps below optimum water allocation.

This lower water use per ha not only increases the cropped area, it also reduces the area abandoned and the area of plantings "mothballed" (permanent plantings watered for survival not crop production). This reduces both current year and future recovery costs.

Of course, these are only estimates, the true picture will not be known until after the 2007/8 season is completed and metered water use data and crop area information is available.

The tables below indicate the estimated recovery cost expressed as a Net Present Value for mothballed and abandoned areas.

Table -9 Estimates of Future years cost include replanting and moth balling costs expressed as a net present value of future costs at 8% over 30 years

Allocation	future years impact NPV			Future years cost
	\$ impact (mothball)	from vines/trees survival	\$ impacts replanting cost	
42%	\$16,000,000		\$96,000,000	\$112,000,000
36%	\$20,000,000		\$144,000,000	\$164,000,000

The table below includes the combined cost of current year and future costs.

Table 10 Estimated total impact in Victorian Mallee including current year and future costs

Allocation	NPV Total cost
42%	\$283,218,657
36%	\$369,979,851

3.4 Regional Impacts

The regional impacts of this will be significant. Recovery will require increased capital to replant abandoned areas and depending on prices, interest rates and water allocations this may not occur for a number of years.

Predicting employment impacts is very difficult. If it is assumed that there is one full time equivalent job (both on and off farm) per \$130,000 in farm gate turnover then a \$130 M/year loss in production could result in 1,000 full time equivalent losses (on and off farm), but this is only likely if low water allocations are sustained for a number of years, water prices stay high and horticultural returns do not improve.

If good seasons and prices return then confidence to borrow and rebuild could result in recovery in employment as abandoned areas are brought back into production.

A scenario, which sees 2008/9 receive a 100% water allocation, is estimated to result in approximately 100 to 300 temporary job losses, due to the 2007/8 low water allocations. Many of these jobs would be recreated as plantings are brought back into production.

4. Proposal

Whilst the situation for 2008/09 looks more optimistic than the current allocation year, there is no certainty that rain will fall in sufficient quantity to bring about a differing scenario to that outlined in this report.

It is important that Council continue to advocate on behalf of the community to ensure that the uncertainty in relation to water availability as seen during the current allocation year is not repeated in the future and any impact on the community of another low rainfall is countered by effective Government policy and programs.

Areas for ongoing Council advocacy to Government may include:

- The need for early and clear advice on water allocation.
- The ability for growers to carry over more than 30% of entitlement at the end of the year.
- The importance of permanent plantings and the difference from other forms of agriculture in relation to availability of water.
- Appropriate response and recovery programs are in place to support the community.

5. Time Frame

Any action emanating from this report requires immediate action to ensure maximum opportunity to engage with government and other stakeholders.

6. Strategic Plan Links

This report is consistent with Council's Strategic Plan particularly in the areas of Governance, Economic Development and Community Health and Well Being.

7. Asset Management Policy/Plan Alignment

There are no asset implications.

8. Consultation Proposed/Undertaken

The issue was the catalyst for the formation of the Horticultural Task Force and has been the basis of significant community consultation which will be ongoing into the future.

9. Implications

9.1 Policy Implication

The policy implications are primarily a State government issue.

9.2 Legal/Statutory Implications

There are no Legal/Statutory Implications relating to this report.

9.3 Financial Implications

There are no direct budget implications at this time.

9.4 Environmental Implications

There are no environmental implications at this time.

9.5 Social Implications

The social implications of a continuance of the current situation are severe, but are not the topic of this report. Information on social impact is contained in Council's Drought Response Plan.

10. Risk Assessment

There are no risk implications at this time.

11. Conclusion

This report is provided for Councillors' information.