



Murray Darling Basin Authority
G.P.O. Box 3001
Canberra. ACT. 2601

26th November 2010

engagement@mdba.gov.au

Guide to the Proposed Plan – Volume 1

The Tobacco & Associated Farmers Co-operative Ltd (TAFCO) is a farmer owned co-operative with over 500 members, predominantly from the Upper Catchment areas of the Ovens, King and Kiewa Valleys.

Our organization has major concerns over the content within the **Guide to the Proposed Plan – Volume 1**. We are alarmed at the apparent lack of understanding relating to the potential social and economic impact to our region if the Plan is adopted in its current form.

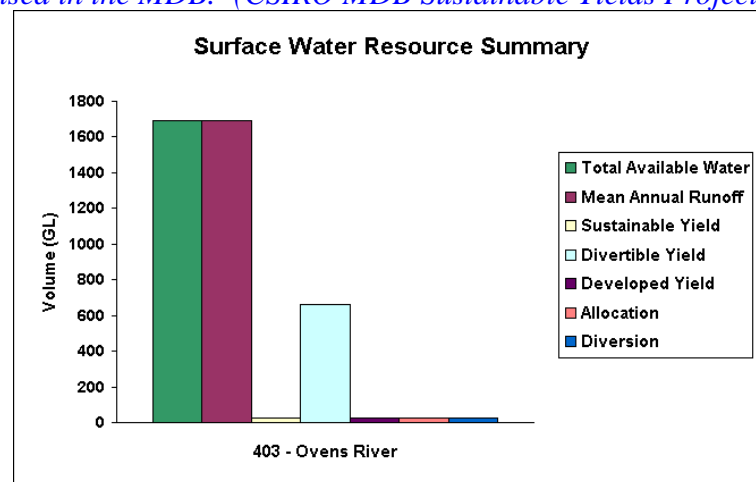
- ▶ The Guide acknowledges the high outflows from the Ovens and Kiewa River systems. It does this by stating that over 98% of all flows to the Murray system are derived from the Ovens and Kiewa River systems. However, the Guide does not address the massive socio-economic impact of the proposed Sustainable Diversion Limits (SDLs).
- ▶ The target SDLs would effectively cease all irrigation in the catchment if the targets were met by willing diverters who currently use their water licence for irrigation of crops.
- ▶ Potential ‘willing sellers’ are most likely to be drawn from the high proportion of sleeper/dozer licences currently not used in the Upper Catchments. Effectively the environment is already provided with this water.
- ▶ The Ovens and Kiewa systems are primarily unregulated. Operating on trigger levels and flow rates with reductions in extractions based on river flows not on allocations. Access to water is dependant on the natural seasonal conditions.
- ▶ The Guide does not adequately differentiate between unregulated and semi-regulated systems. It fails to acknowledge the complexities of ‘management’ of seasonal flows in high catchment areas.
- ▶ If there were environmental water purchases – how would this be delivered and shepherded through the system to ensure that outcomes are met?
- ▶ The Guide does not address equity issues. Recommending major reductions to a relatively small number of extractions from a very large outflow system is not justified by the Guide. This lack of justification is even more poignant given that the Guide at the same time acknowledges the healthy state of Ovens and Kiewa systems.
- ▶ High interceptions due to the natural topography of the region appear not to be taken into account when developing SDLs. All the ‘pain’ will be worn by licenced diversions.
- ▶ The Ovens and Kiewa systems have been earmarked within the Guide for a 40-45% cut. This effectively equates to over 70% when applied only to irrigation diversions. *(This for example would equate to a proposed reduction of 10GL from the 14GL irrigation in the Ovens System)*
- ▶ Any reduction in accessibility to diversions during periods of low flows is further exacerbated as the system relies on sharing the available resource – there is no ability to store carry-over
- ▶ Environmental flows in Bulk Water Entitlements on both the Ovens and King Rivers are already 13GL. There should be an improved accounting system for environmental flows already being provided from within local management plans.
- ▶ Sharing the low flows during times of stress is more important to a healthy river environment than having large volumes of water simply provided to the environment. The Guide just gives target SDLs and does not address when the water should be provided or how it will be managed.

- ▶ The Ovens system has been identified as having highly connected groundwater and surface water by the Victorian Government. The first conjunctive water management plan for surface water and groundwater is scheduled for a draft release in December 2010. What technical adjustments have been made by the MDBA for the Ovens system?
- ▶ The Guide concentrates more on end flow outcomes for the Murray Darling Basin (MDB) without consideration for what catchments are already providing to the overall system.
- ▶ The ‘science’ underpinning the proposed SDLs is questionable.

Our organization has had representatives on various local Water Service Committees, Stream Flow Management Plans and Water Management Plans for over 20 years. Currently a number of our members are represented on the Upper Ovens Area Water Management Plan Committee which is developing Victoria’s first conjunctive Water Management Plan (WMP) for surface and groundwater extraction. Under this plan groundwater and surface water will be treated as the same resource.

Our region is a tiny speck within the Murray Darling Basin. It represents less than 1% of the area but is an enormously resourceful in that it provides over 98% flows to the Murray River. The North East catchment is 2% of the MDBA area and provides 38% of the total flows.

“The Ovens Region is in North East Victoria and represents 0.7% of the total area of the MDB. It uses less than 0.2% of the total surface water diverted for irrigation in the MDB and 0.4% of the total groundwater used in the MDB.” (CSIRO MDB Sustainable Yields Project January 2008)



Mean Annual Run-Off (Natural) (ML/yr)	1,692,000
Mean Annual Outflow (Natural) (ML/yr)	1,692,000
In-stream commitment (Total available flow - imported water - sustainable yield) (ML)	1,666,000
Developed Yield (ML/yr)/ Sustainable Yield (ML/yr)	26,000
Divertible Yield (ML/yr)	664,000

Source: <http://www.anra.gov.au/topics/water/availability/vic/basin-ovens-river.html>

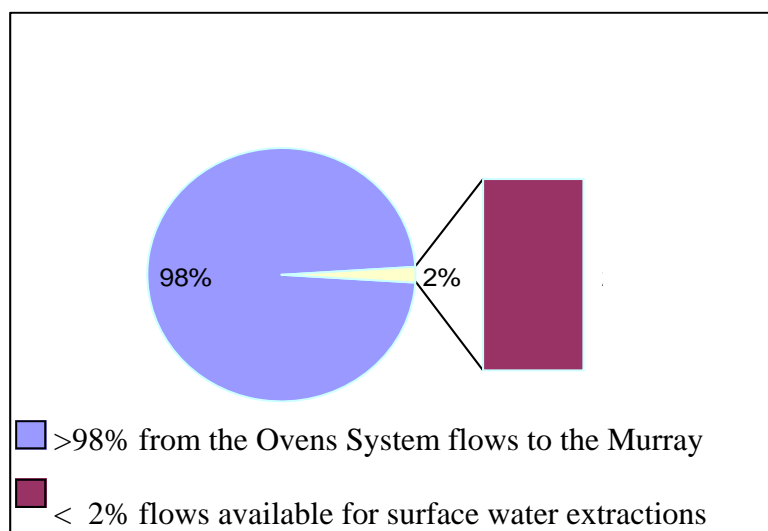
The Guide acknowledges the high outflows from the catchment within its tables but fails to recognize the catastrophic impact on the region through the proposals. The large impact would be created due to the proportionally small amount of diversions utilised for irrigation. This would be the only area that reductions can be looked at to meet the proposed SDLs within the Guide. The proposed SDL for the region is less than what can be released from the Hume Dam in one day.

Because of the practical difficulties in implementing reductions in the interception component of the current diversion limits, Basin state governments are likely to consider first reducing watercourse diversions only. Therefore, the Authority has placed an upper bound on the reduction in any catchment as a percentage of the watercourse diversion component (see Chapter 5) of the current diversion limit. (Page 108)

The Ovens system has been earmarked within the guide for a 40-45% cut which highlights a lack of understanding of individual systems, such as ours, within the MDB.

The Guide has the Ovens system irrigation at 14GL per annum and is proposing a minimum reduction of 10GL. This is effectively a reduction in excess of 70%.

For this not to have an enormous adverse effect socio-economic impact on the region there would need to be significant resources made available to shift irrigation off-stream such as on-farm storages or other engineering solutions. Even if such solutions could be found, the environmental flow to the Murray would only be increased by 2%, as 98% is already flowing through.

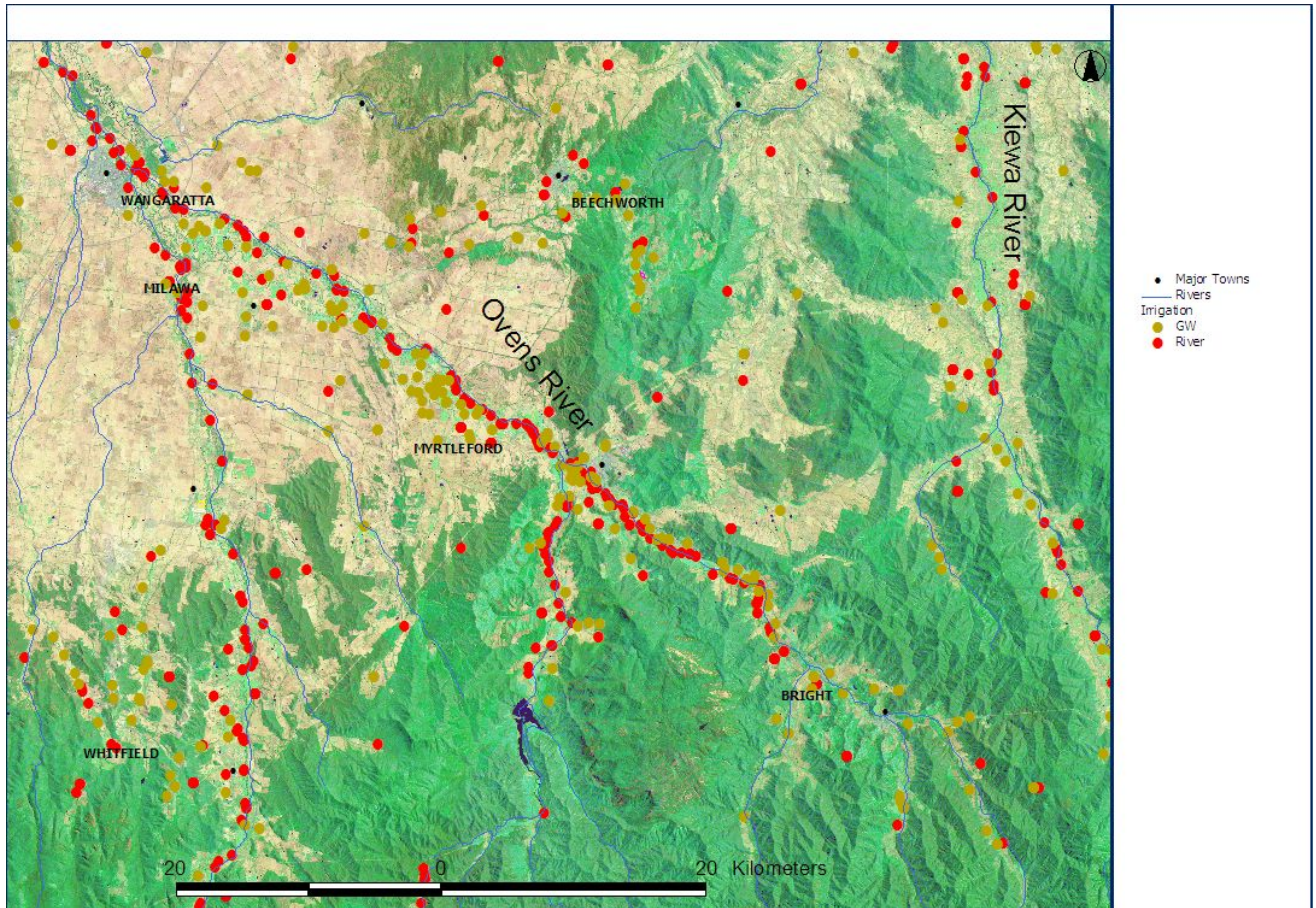


Following the 29th October Albury presentation on the Guide, we sought clarification from the authority on how diversions had been calculated. We were informed that the figures were calculated using a REALM model which is not yet available in the technical documents from the MDBA.

REALM (REsource ALlocation Model) is a generalised computer simulation package that models harvesting and bulk distribution of water resources within a water supply system. It is a modelling tool, which can be applied to develop specific water allocation models. Like other water resource simulation software tools, REALM uses mass-balance accounting at nodes, while the movement of water within carriers is subject to capacity constraints. It uses a fast network linear programming algorithm to optimise the water allocation within the network during each simulation time step, in accordance with user-defined operating rules.

In the Upper Ovens Stream Flow Management Plan – The Final Reliability of Supply Assessment (SKM January 2002) the environmental flow recommendations were not accepted by the consultative committee. “The Environmental flow study will provide a scientifically defensible position around which flows can be managed” – this was not achieved through the REALM modelling and a further study was then undertaken using the FLOWS method.

When taking into account the high interceptions due to the natural topography of the region (more so than farm dams), combined with urban town supplies, existing environmental flow provisions through Bulk Water Entitlements, regeneration of vegetation following a series of major bushfires and the reality that farmers only utilize about 40% of their licenced volume for irrigation purposes in any given year anyhow, the proposed 40-45% cut, when compounded, effectively would require all irrigation to cease from stream diversions and groundwater. (The groundwater consideration is highly relevant in the Upper Ovens because in the WMP groundwater will be treated as the same resource as surface water).



If you take an aerial snapshot of the region between it is clear that the area is high catchment with a high proportion of the landscape having natural interceptors.

The guide refers to water security:

Water security

“Improved water security for all uses of Basin water resources is an object of the *Water Act 2007* (Cwlth) and, similarly, a purpose of the Basin Plan. Improved water security is provided through the transparent, statutory, Basinwide arrangements for water management” (page 178)

“While the Basin Plan will provide for greatly enhanced water security through the provision of greater certainty in management arrangements, it is not possible to provide any specific guarantees about the volume and timing of water availability over the life of the Basin Plan and the Basin State water resource plans. That is, while water entitlements will have clearly defined features associated with the proprietary right, the actual water access they will support will depend, primarily, on rainfall.” (page 179)

These statements about water security made within the guide are difficult to accept and appear contradictory to the SDL recommendations particularly when applied to our region.

Section 7.4 of the guide notes that Implications to regions in the Southern Basin and **Figure 7.6 Reduction in baseline gross value of irrigated agricultural production due to reduction in surface water diversions, by southern Basin** on page 92 of the guide together with statements such as that below need to be quantified.

The reductions in gross value of irrigated agricultural production in the Ovens region are low relative to the reductions in surface-water use, because this region uses a high proportion of groundwater that is not proposed to be reduced by the long term average sustainable diversion limits (SDLs) Page 93

We would challenge this statement as incorrect and seek clarification.

Our region is particularly vulnerable at present since the loss of the Victorian tobacco industry which ceased officially in October 2006. The final Victorian tobacco crop was grown on 1500 hectares of highly productive irrigated land along the Valleys of the Upper Ovens, King and Kiewa Rivers and their tributaries and had a farm gate value of over \$24million. An additional 2500 hectares had also been utilised for tobacco production at some point in the lead up to industry closure.

These farmers were efficient and had a high degree of expertise in irrigated row crop production. However, despite the farming credentials, new intensive land uses and associated markets were always going to be difficult to develop. The social fabric of the area has changed forever. Some farmers have opted for fodder production and some have 'experimented' with new intensive enterprises such as vegetable, berry and fruit production. Whilst this has been occurring various industry groups and companies have continued to visit the area to assess potential land uses.

There has been no significant intensive horticulture industry established in the area since the loss of tobacco. The Guide, in its current form, will only further exacerbate an erosion in regional confidence. The Guide, in its current form, will be a major disincentive to 'new' development on already developed land with a history of use.

For some aquifers, groundwater contributes significantly to base flow for rivers and streams, particularly in low-flow periods, and is therefore an important contributor to maintaining key ecosystem functions. Where groundwater and surface-water systems are known to be connected, appropriate adjustments have been made to ensure there is no double counting of water extractions. (Page 77)

The Ovens system has been identified as having highly connected groundwater and surface water by the Victorian Government. What technical adjustments have been made by the MDBA for the Ovens system?

Finally,

The Plan fails to recognise or gauge the likelihood as to whether any of the systems will or will not have enough willing sellers to reach minimum targets. The Guide indicates that reductions will only come from willing participants yet 11.2 Risk allocation recognises that targets may not be met.

In the event that water recovery efforts do not fully offset the Australian Government's share of the reduction, the Water Act provides for payments to be made to affected entitlement holders. Payments for any such residual share would relate to any reduction in market value of eligible water entitlements. (Page 154)

Having already undertaken preliminary investigations of potential sellers of water to the environment in part of the Ovens System we have real concerns over the 'voluntary' buy back when a minimum reduction of diversions of 40% is being targeted.

We also have concerns that if there were willing ‘sellers’ of water to the environment, how would this be managed to ensure that it is not lost within the system downstream. How would unregulated water be accounted for and shepherded through the system – Environmental flows are already being provided for within Bulk Water Entitlements for the Ovens.

There are a number of other areas within the Guide that our organisation believes require clarification and quantification. Therefore we welcome the opportunity to meet with the MDBA when they visit the area. This will be an opportunity for our organisation to further demonstrate the uniqueness of the Ovens Region and highlight the dramatic implications to the region if the Guide to the proposed plan was adopted.

Allan McGuffie

Allan McGuffie
Chairman.



Arial Photograph of Mt.Beauty – Kiewa Valley



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14th December 2010

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Guide to the Proposed Plan – Volume 1

Our organization has already submitted our major concerns over the content within the **Guide to the Proposed Plan – Volume 1** in our submission dated 26th November 2010.

There are a number of questions that we have particularly in relation to the science used by the MDBA to determine that our area: being the Ovens and Kiewa, should have a 40-45% reduction based on the proposed Sustainable Diversion Limits.

The models and/or formulas used by ‘science’ fail to provide an equitable outcome when determining SDL. This is apparent when you have a healthy river system providing 98% of its flows to the Murray recommended to have the highest cut to diversions in the entire plan. Licenced irrigation is an incredibly small amount in relation to the amount of water provided to the system due to the nature of growing rain based agriculture.

What methodology to estimate the SDL’s has the MDBA used as ‘best science’ and what, if any adjustments have been made to account for high rainfall catchments?

There is a failure to acknowledge existing efficiencies of irrigators in regions where agriculture is predominantly grown in high rainfall areas and where diversion licences are often used as insurance by farmers for when it doesn’t rain.

Rain Based Agriculture is a term often associated with our region which has major efficiencies in growing a variety of crops in the Upper Catchment are of NE Victoria as shown in Table 1 below:

Table 1: The average and the 80th percentile of dry years of irrigation water, required for pasture, orchards, and grapes for three different regions. This is using data back to 1950.

		Average	Cover 8 in 10 yrs
		ML/ha	ML/ha
Pasture/lucerne (crop factor 0.8)	Myrtleford	4.6	6.0
	Griffith	9.6	11.0
	Mildura	11.7	12.8
Orchards/Nuts (crop factor 0.7)	Myrtleford	3.7	4.9
	Griffith	8.1	9.5
	Mildura	10.1	11.1
Grapes (crop factor 0.5)	Myrtleford	2.2	2.8
	Griffith	5.3	6.3
	Mildura	6.8	7.6

This also highlights the variability of our water demands the average increase from average to 8 in 10 is about 30% in Myrtleford 17% in Griffith and 10% in Mildura.

Furthermore, efficiencies of the region are also demonstrated when comparing licences for diversions with the actual extractions of water. Seasonal variances are based on a range of factors including rainfall. (Table 2: regulated section of the Ovens River. Table 3: regulated section of the King River)

Table 2: G-MW Customer Usage in the regulated Ovens River System 1999- 2010

YEAR	Actual Use ML	GL	% of 14,689ML Licenced Volume used
1999-2000	4725 ML	4.7 GL	32.00%
2000-2001	4602 ML	4.6 GL	31.50%
2001-2002	5622 ML	5.6 GL	38.00%
2002-2003	8215 ML	8.2 GL	55.50%
2003-2004	6834 ML	6.8 GL	46.00%
2004-2005	4918 ML	4.9 GL	33.50%
2005-2006	5546 ML	5.5 GL	37.50%
2006-2007	3746 ML	3.7 GL	25.50%
2007-2008	4990 ML	5.3 GL	36.00%
2008-2009	5769 ML	5.7 GL	39.00%
2009-2010	6536 ML	6.5 GL	44.00%
G-MW Average last 11 years annual use	5591 ML	5.6 GL	38.00%

The average number of active regulated Ovens customers for last 9 years is 46%.

The highest number of users in 2003/04 was 56% of customers.

39% of customers were active in 2006/07.

Table 3:G-MW Customer Usage in the Regulated King River System 1998-2010

YEAR	Actual Use ML	GL	% of 10,729 ML Licenced Volume used
1998-1999	5,399 ML	5.4 GL	50.00%
1999-2000	5,268 ML	5.3 GL	49.00%
2000-2001	4,586 ML	4.5 GL	42.00%
2001-2002	5,318 ML	5.3 GL	50.00%
2002-2003	7,481 ML	7.4 GL	69.00%
2003-2004	6,123 ML	6.1 GL	57.00%
2004-2005	4,899 ML	4.9 GL	45.00%
2005-2006	5,470 ML	5.5 GL	50.00%
2006-2007	2,448 ML	2.4 GL	23.00%
2007-2008	4,389 ML	4.3 GL	49.00%
2008-2009	4,577 ML	4.5 GL	42.00%
2009-2010	2,150 ML	2.1 GL	20.00%
G-MW Average last 12 years annual use	4,837 ML	4.8 GL	45.00%

Table 4: Testimonial from local dairy farm in Whorouly

- ▶ 3rd Generation dairy farm
- ▶ Irrigate 60ha of permanent pasture and 60ha of annual grasses.
- ▶ 594ML underground water license.
- ▶ 165ML surface water (built up since 2002)

In 2009, we produced 3.93 million litres (estimated 4.2 million litres this year). We have a contract with our milk company to supply a minimum amount of milk with an even daily volume and as a result we are going to move from 2 to 3 calvings a year. Without the water from the river to help guarantee pasture growth this will not be achievable. The reliability of our water has been instrumental for our farm business to grow and help provide surety of employment as well as ongoing support for our local businesses.

	2008-9	2009-10	
rainfall mm	620	900	
irrigation used ML	745	466	
hay purchased	800 tons	600 tons	
grain purchased	1500 tons	1000 tons	
3 full time employees			
8 part time			
	2008-9	2009-10	Total
wages	132014	144409	276423
hay growers	239705	152218	391923
grain	529288	277862	807150
pellets	119177	46401	165578
lease land	85058	82058	167116
	973228	558539	1531767
local contractors	43661	202798	246459
local suppliers	227447	269855	497302
local business providers	104220	178328	282548
machinery dealers	167160	131250	298410
	542488	782231	1324719
donation to our community	8000	5000	13000
	<u>1655730</u>	<u>1490179</u>	<u>3145909</u>

As well as paying our share of taxes for the broader community, we will irrigate to supplement rainfall and to maximize plant growth. In our region it costs us to irrigate as we have to pump water so we only irrigate when it is needed. We have done trials for irrigation efficiency and start up times (we mostly irrigate at night). We care for the environment and are proud of our area. The water that we don't use we pass to the environment (no carryover or storage capacity).

What is the rationale behind giving higher SDL's to our region which is documented to be in a healthy state?

The Ovens region is identified as one of the key environmental assets within Appendix A, (Page 372-373 Technical Background II) with the majority of streams and tributaries meeting Criteria 1,2,3,4, and 5

1. formally recognized in, and/or is capable of supporting species listed in relevant agreements
2. Natural or near-natural, rare or unique
3. Provides vital habitat
4. Supports Commonwealth, state or territory listed threatened species and/or ecological communities
5. Support or is capable of supporting biodiversity

There appears to be no environmental justification for the proposed cuts. How will the proposed SDL improve our local environment?



Victoria has recently released the Northern Region Sustainable Water Strategy (NRSWS) which recommended recovery of 480GL for the environment with NO planned additional water recovery from the Ovens, King or Kiewa Catchments. Yet the MDB plan proposes a range of between 3,000-4,000GL as being required for the environment with proportionate cuts to the States.

Why is the science so different?

Where are the Victorian purchases of water for the environment by the Commonwealth shown in the determination of SDL's?

In June 2010 the Wentworth Group of Concerned Scientist in association with Prof. Q.Grafton, I.Kawolick , Prof. C.Miller, T.Stubbs, A/Prof.F.Verity A/Prof.K.Walker provided the Murray Darling Basin Authority with a copy of their independent paper titled:

“Sustainable Diversions in the Murray-Darling Basin – An analysis of the options for achieving a sustainable diversion limit in the Murray-Darling Basin”

Was any consideration given to this paper before the guide to the proposed plan was released? If so what, or if no consideration why?

Finally

We would be keen to obtain a copy of the presentation by Professor Quentin Grafton and Professor Chris Miller on the economic effects of water recovery on irrigated agriculture in the Murray Darling basin as presented to the Basin Community Committee in October this year. (Reported on the MDBA website). We have been unable to find any background or technical documents that have been specific to our region in this field.

Yours faithfully

Allan McGuffie
Chairman.