Submission Number: 461
Date Received: 21/12/2010

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Impact of the Murray-Darling Basin Plan in Regional Australia

Submission to the House Standing Committee on Regional Australia

December, 2010

This submission addresses the concerns that the Wentworth Shire Council has about the direct and indirect impact of the proposed Basin Plan, together with comments on the options for water-saving measures, the role of local government in developing and delivering water saving initiatives, and the opportunities for economic growth and diversification within regional communities.

FOREWORD

The purpose of this submission is to provide the House Standing Committee on Regional Australia with information that addresses several of the specific items being considered within the terms of reference for the inquiry into the impact of the Murray-Darling Basin Plan in Regional Australia. This submission will focus on the concerns of the Wentworth Shire Council in relation to:

(a) The direct and indirect impact of the Proposed Basin Plan on regional communities, including agricultural industries, local business activity and community well-being;

(b) Options for water-saving measures or water return within the Wentworth LGA;

(c) The role of local government, and the research sector in developing and delivering infrastructure and technologies aimed at supporting water efficiency within the Murray-Darling Basin;

(d) Measures to increase water efficiency and reduce consumption and their relative cost effectiveness;

(e) Opportunities for economic growth and diversification within regional communities; and

(f) Previous relevant reform and structural adjustment programs and the impact on communities and regions.

EXECUTIVE SUMMARY

There has been considerable speculation about the volume of water required to restore the health of the Murray Darling Basin, and the release of the guide to the proposed Basin Plan finally provides an indication as to the extent of the proposed sustainable diversion limits.

Just as the Murray Darling Basin Authority was tasked with the responsibility to determine the amount of water needed for the environment, the Wentworth Shire Council is tasked with the responsibility to ensure that it can withstand the many challenges that will arise as a consequence of the proposed water reductions.

The key findings from our research into this matter have concluded that Wentworth Shire Council has:

- A slowly ageing population, that is currently stable, but projected to decrease over time.
- Changing household composition, which may result in the existing housing stock becoming unsuitable for the more aged or aging households.
- Relatively high rates of in-migration, but with this largely offset by migration out of the local government area (LGA).
- Lower levels of education compared with the regional New South Wales state average, suggesting challenges in shifting the LGA to higher skilled forms of employment.
- Higher (although generally declining) levels of crime compared with the state average, suggesting social disadvantage in some areas of the community.
- Lower levels of community volunteering than the other cluster group LGAs, with implications for emergency service provision, organised sports and community and social support services and infrastructure.
- Low levels of reported trust in State and Australian governments and politicians, due to perceived communication failures, conflicting goals and lack of understanding of local issues.
- Strongly resilient communities, despite high profile businesses failures and the hardship experienced by those directly or indirectly dependent on the agriculture.
- High economic reliance on agriculture and related food and beverage production and support services.
- An agricultural economy that is almost entirely dependent on production from irrigated perennial horticultural crops. About 80% of the gross value of production is generated by 0.5% of the LGA.
- Considerable uncertainty as to the social and economic impact of the forthcoming Murray-Darling Basin Plan (MDBP).

- A shrinking labour force, reflecting heavy reliance on agriculture and the impact of drought, reduced water allocations and low commodity prices (especially for wine grapes).

- High levels of reported excessive working hours among farming families.

- Dryland farmers with unsustainably low incomes.

- Relatively high levels of socio-economic disadvantage exacerbated by high debt levels resulting from drought and poor commodity prices.

These characteristics mean that the Wentworth Shire will face significant challenges in 'adapting to a future with (even) less water', including:

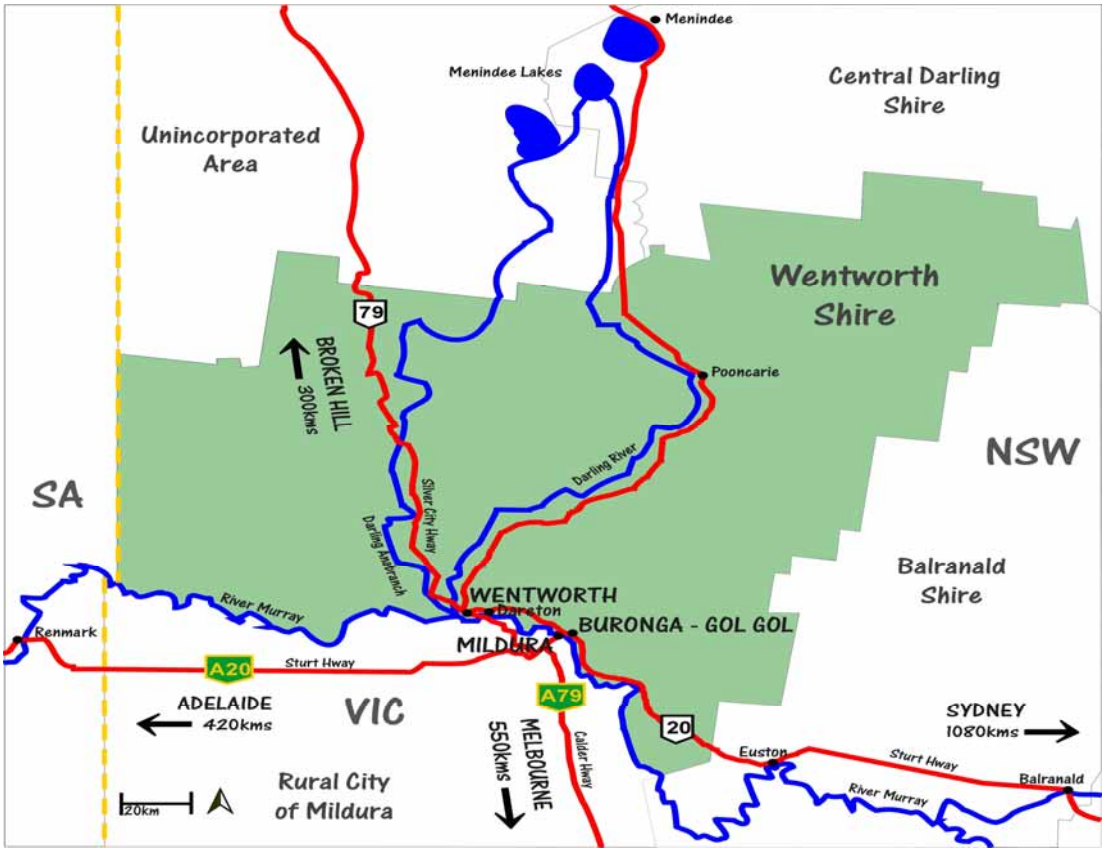
- Diversifying its economy including building on its strengths in agriculture, food processing and related services and tourism.
- Responding to changes in water policy, particularly those outlined in the guide to the proposed Basin Plan which, if implemented, will see reductions in the range of 26% to 35%.
- Maintaining and developing further the infrastructure to maintain the competitiveness of the Shire's agriculture and support diversification into areas in which it has comparative advantages and growth prospects (e.g. tourism, renewable energy and mineral sands extraction).
- Maintaining access to services that support the Shire's population, including high quality health, education, cultural and recreational services. These services are to some extent dependent on population, but also are critical liveability infrastructure that attracts and retains residents.
- Developing the Shire's workforce to meet the changing requirements of industry.

In addressing the terms of reference for the inquiry into the impact of the Murray-Darling Basin Plan in Regional Australia, the Wentworth Shire Council believes that it is Local Government that is best placed to research, advise and recommend solutions for water saving measures, and future economic growth and diversification opportunities.

Contents

1. THE IMPORTANCE OF IRRIGATION TO OUR COMMUNITY

The Wentworth Shire Council area is one of the largest in NSW, covering an area of 26,000 km², which is approximately 3% of the state. Our Shire is sparsely populated with less than 4 persons per km², and is classified as semi-desert, with an annual rainfall of between 10 and 11 inches. However, our shire is an area that has been totally transformed by irrigation. In fact the Government established the first NSW Irrigation scheme in Curlwaa back in 1888, and it is irrigation that drives our economic prosperity with 80% of the gross value of output being generated from just 5% of agricultural land.



1.1.Shire Land Use

While irrigation is confined to just 0.5% of the Shire's area, it contributes 70-80% of the gross value of production. Irrigated land uses are concentrated in the south of the Shire, along the Murray Darling River corridors.

Whilst the vast majority of land use within the Shire area is classified as rangelands grazing areas, with some scattered areas of dryland cropping, irrigated agriculture that is confined to a limited area is what produces the vast majority of the Shires economic wealth.

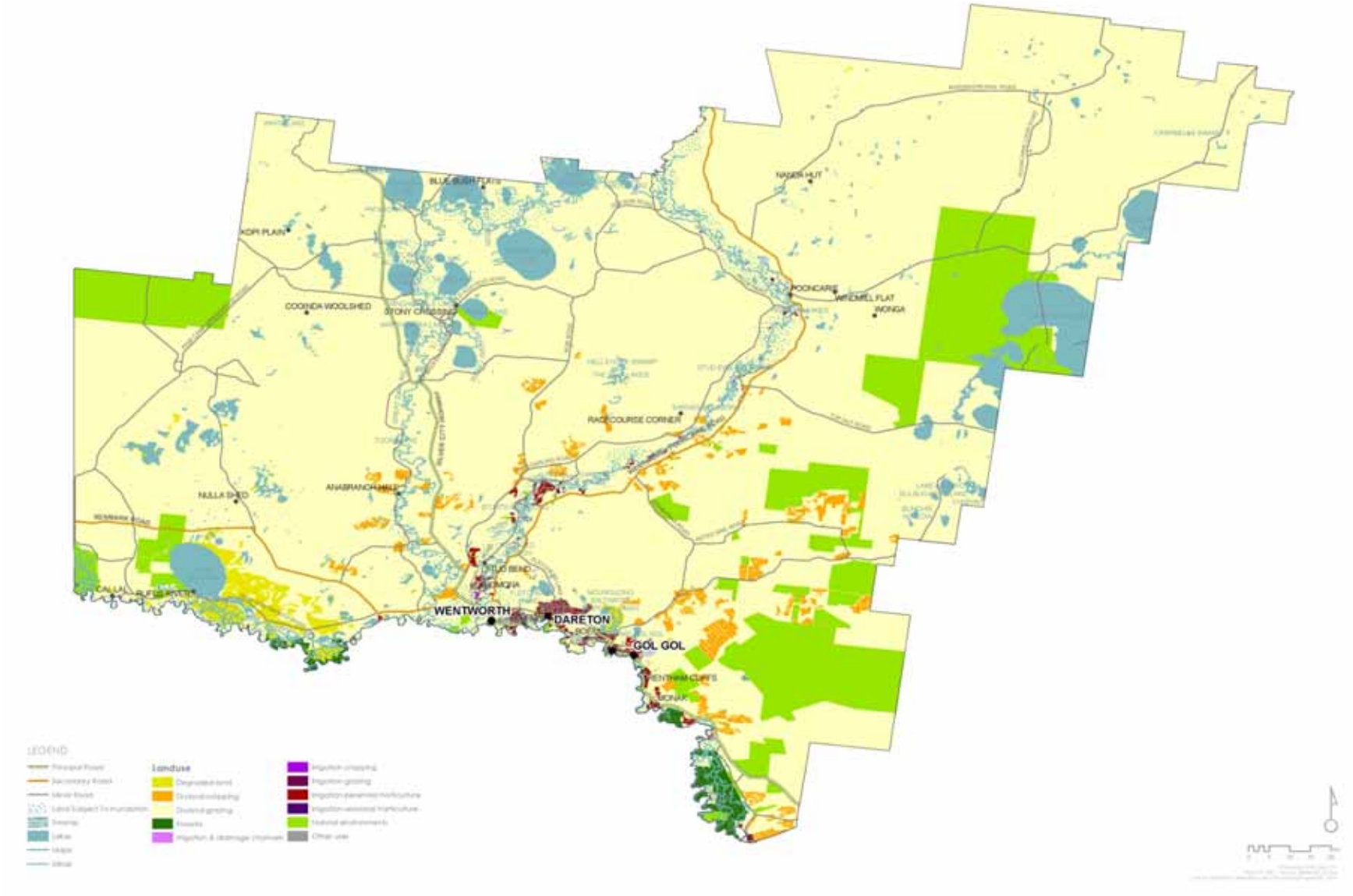


Figure 1 Wentworth Shire land use
Source: Derived from NSW Government data

2. THE DIRECT AND INDIRECT IMPACT OF THE PROPOSED BASIN PLAN

2.1.Scale and Value of agricultural production

Despite the very limited geographic extent of irrigation in the Wentworth Shire, it is the major driver of the agricultural economy. Irrigated agriculture accounted for about 80% of the gross value of agricultural production in Wentworth Shire in 2005-06. While irrigation allocations have declined in recent years, irrigation remains critical to the farming industry.

2.1.1. Agricultural production

Wentworth Shire has a diverse and productive agricultural economy. Production of various types of commodities for 2000-01 and 2005-06 (based on the Australian Bureau of Statistic's [ABS] agricultural census) is given in table 1. The Shire is one of the main citrus, grape and nut producing areas in New South Wales and accounts for about 18%, 23% and 5% of the state's production, respectively. While the Shire has a very large area of grazing land, it accounts for only about 1% of the livestock raised in the State.

Table 1: Agricultural production in 2000-01 and 2005-06 in Wentworth Shire expressed in tonnes of output or numbers of livestock.

	2000-01	% NSW	2005-06	% NSW	Change
Crops (t)					
Cereals	115,912	0.9%	78,301	0.6%	-37,611
Oilseeds	1,463	0.2%	9	0.0%	-1,454
Legumes	177	0.1%	215	0.1%	38
Hay	15,854	1.4%	4,972	0.3%	-10,882
Vegetables (t)	3,950	0.7%	4,431	0.9%	481
Fruit (t)					
Citrus	49,953	18.0%	48,867	18.5%	-1,086
Grapes	81,906	23.5%	116,906	22.9%	35,000
Stone fruit	544	1.5%	50	0.1%	-494
Nuts	12	4.3%	50	7.2%	37
Livestock (#)					
Sheep	422,274	1.0%	338,992	1.1%	-83,282
Cattle	11,474	0.2%	7,926	0.1%	-3,548

Source: Based on ABS Agricultural Census data

2.1.2. Value of production

Fruit production, particularly citrus and grapes, are the most valuable forms of production in the Shire. Total value of fruit production in 2005-06 exceeded $100 million and accounted for about 13% of the NSW total. The Shire accounted for about one quarter of the total value of production of citrus and grapes in NSW. Its contribution in most other categories reported was less than 1%.

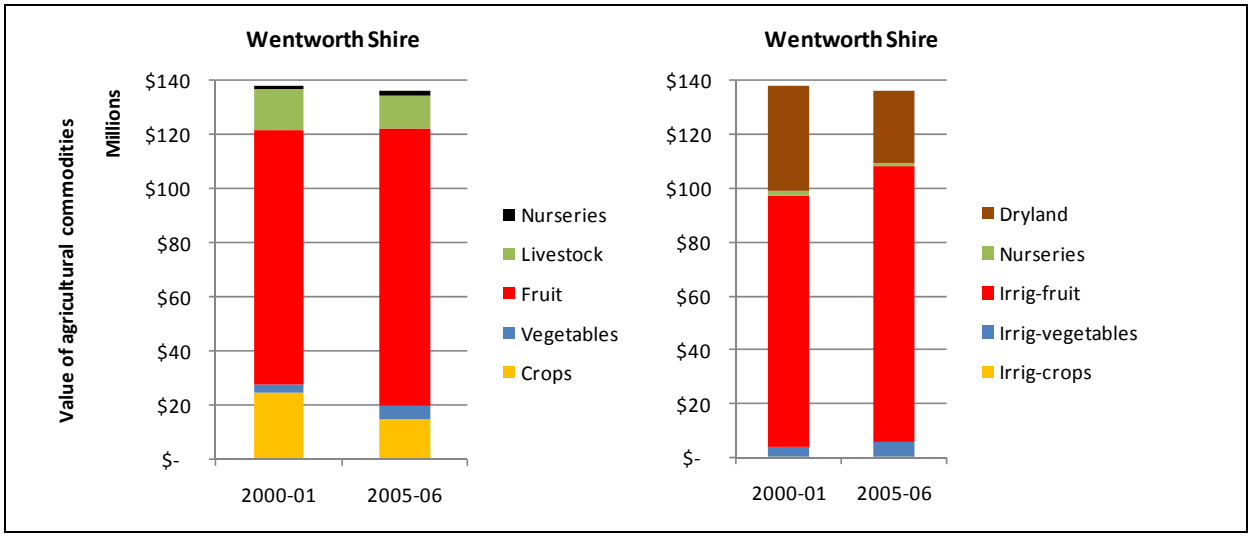
Table 2 Gross value of agricultural production in 2000-01 and 2005-06 in Wentworth Shire.

	2000-01	% NSW	2005-06	% NSW	Change
Crops	$24,551,293	0.7%	$14,711,775	0.4%	-$9,839,518
Cereals	$22,020,457	1.0%	$13,644,970	0.6%	-$8,375,487
Oilseeds	$454,225	0.2%	$3,156	0.0%	-$451,069
Legumes	$81,860	0.1%	$79,287	0.1%	-$2,573
Hay	$1,902,989	1.3%	$984,362	0.3%	-$918,627
Vegetables	$3,396,801	1.2%	$5,351,696	1.5%	$1,954,895
Fruit	$93,560,159	14.5%	$102,331,216	12.9%	$8,771,057
Citrus	$28,832,725	22.4%	$34,281,941	25.1%	$5,449,216
Grapes	$62,690,333	24.7%	$66,415,612	24.2%	$3,725,279
Stone fruit	$1,321,098	1.6%	$123,775	0.1%	-$1,197,323
Nuts	$54,740	0.1%	$455,566	0.5%	$400,826
Livestock	$15,075,369	0.4%	$11,974,319	0.3%	-$3,101,050
Sheep-meat	$2,302,075	0.7%	$3,234,716	0.7%	$932,641
Sheep-wool	$10,424,967	1.0%	$7,617,708	1.1%	-$2,807,259
Cattle	$1,992,940	0.1%	$1,094,388	0.1%	-$898,552
Nurseries	$1,516,857	0.9%	$1,592,662	0.5%	$75,805
Total	**$138,100,479**		**$135,961,668**		**-$2,138,811**

Source: Based on ABS Agricultural census data.

Table 2 highlights the value of irrigation to Wentworth Shire. Over 70% of the value of production in 2000-01 and over 80% in 2005-06 can be attributed to irrigation. All of this was from just 12,300 of the Shire's 2.3 million ha of agricultural land (or just 0.5% of the Shire).The majority of irrigation production was from fruit (grapes and citrus).

Figure 2 Value of agricultural production by major categories of commodity and breakdown between irrigated and dryland land uses



Source: Based on ABS Agricultural census data.
Irrigation taken to include all forms of fruit and vegetable production, nursery production and production of summer crops.

2.2.The social and economic impacts - a decade of experience to learn from

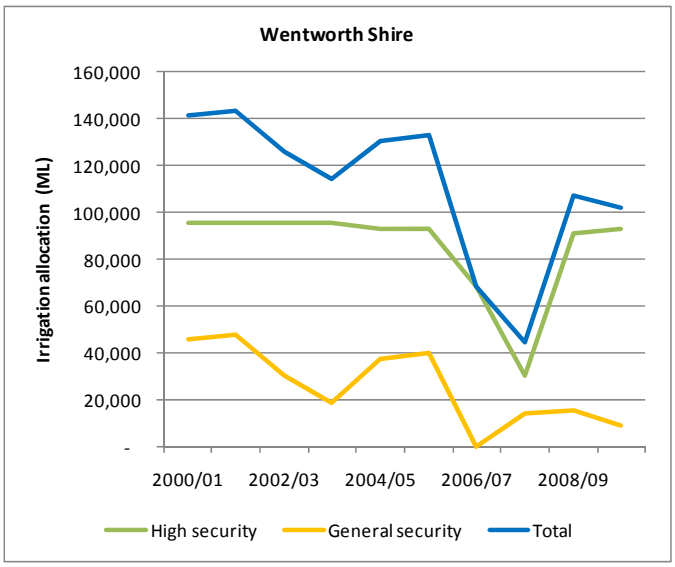
In order to predict the long term impacts of the proposed sustainable diversion limits, the experience of how the Wentworth community has responded to the last decade of change might produce some valuable learning. The prolonged drought, reduced water allocations, environmental water purchased and falling commodity prices have all impacted greatly on the Wentworth Shire. Yet despite irrigation allocations declining in recent years, irrigation remains critical to the farming community, and continues to be the main economic driver within the Shire.

2.2.1. Irrigation entitlement

Irrigation entitlement currently held in the Wentworth Shire equates to over 143 GL (estimated from data obtained from NSW Office of Water), comprising about 96 GL of high security water and about 47 GL of general security water. Entitlement is sourced from the Darling (~37 GL in total, mostly low security) and Murray River (~106 GL in total, mostly high security) systems. Figure 3 shows the annual volumetric allocations for both high and general security water for entitlements held by Wentworth Shire residents.

The volume of water available for irrigation declined steadily during the course of the current decade, particularly for general security water. Allocations of high and general security water from the Darling River have been more reliable than those from the Murray River (average 100% and 66%, compared with 88% and 40%, respectively). Notwithstanding this, the Murray is the major source of irrigation water for Wentworth Shire. Volumetric allocation in Wentworth Shire has declined from over 140 GL in 2000-01 to as little as 44 GL in 2007-08. Irrigation allocations in the two most recent years have recovered from their low points during the drought and amounted to over 100 GL in 2009-10. The agricultural census years of 2000-01 and 2005-06 were both years of relatively high water allocation, indicating that the census data does not show the impacts of recent experiences of low water allocations on the agricultural economy.

Figure 3 Estimated annual irrigation allocation in Wentworth Shire



Source: Derived from data provided by NSW Office of Water.
Note: High security water license were assumed to only be those where only high security water was listed in the licence. This may mean that the volume of high security water is underestimated. Data do not account for carry over or trade in allocation. It was

assumed that current entitlements applied throughout the reporting period. For this reason, estimates of allocation early in the decade may be overestimates.

2.2.2. The effects of drought , water availability, water buy back and falling commodity prices

The intrinsic link between community as a whole and irrigation allocations cannot be underestimated. Our existence as a community was borne out of the Government establishing the first NSW irrigation scheme in Curlwaa back in 1888. Irrigation has enabled the total transformation of land, from desolate, barren and unforgiving land, to a land that offers opportunity, hope and prosperity.

But the last decade of experience has impacted significantly on the community, and in order to understand the impacts of drought, water availability, water trade and falling commodity prices, the Wentworth Shire Council commissioned a study into the socio economic status of its shire. The results of our socio and economic study[i] found that the Wentworth Shire has:

- A slowly aging population, that is currently stable, but projected to decrease over time.
- Changing household composition, which may result in the existing housing stock becoming unsuitable for the more aged or aging households.
- Relatively high rates of in-migration, but with this largely offset by migration out of the local government area (LGA).
- Lower levels of education compared with the regional New South Wales state average, suggesting challenges in shifting the LGA to higher skilled forms of employment.
- Higher (although generally declining) levels of crime compared with the state average, suggesting social disadvantage in some areas of the community.
- Lower levels of community volunteering than the other cluster group LGAs, with implications for emergency service provision, organised sports and community and social support services and infrastructure.
- Low levels of reported trust in State and Australian governments and politicians, due to perceived communication failures, conflicting goals and lack of understanding of local issues.
- Strongly resilient communities, despite high profile businesses failures and the hardship experienced by those directly or indirectly dependent on the agriculture.
- High economic reliance on agriculture and related food and beverage production and support services.
- An agricultural economy that is almost entirely dependent on production from irrigated perennial horticultural crops. About 80% of the gross value of production is generated by 0.5% of the LGA.

- Considerable uncertainty as to the social and economic impact of the forthcoming Murray-Darling Basin Plan (MDBP).
- A shrinking labour force, reflecting heavy reliance on agriculture and the impact of drought, reduced water allocations and low commodity prices (especially for wine grapes).
- High levels of reported excessive working hours among farming families.
- Dryland farmers with unsustainably low incomes.
- Relatively high levels of socio-economic disadvantage exacerbated by high debt levels resulting from drought and poor commodity prices.

The research conducted by SKM concluded that these characteristics mean that the Wentworth Shire will face significant challenges in adapting to a future with (even) less water.

2.2.3. Implications for community well-being

The Department of Planning has released future population projections for LGAs throughout NSW (Table). Population in Wentworth LGA is projected to fall to about 6,700 persons by 2031, whereas the total NSW population is projected to grow by 33% over the same period.

Table 3 Current and projected future population for Wentworth, Shire

	2006	2011	2016	2021	2026	2031
Wentworth	7,100	7,100	7,000	6,900	6,800	6,700

Source: Department of Planning (NSW) 2010

The Draft Murray Regional Strategy makes the point that primary production, being agriculture, forestry and mining is a key driver of rural and regional economies, however economic growth in these industries is not necessarily reflected in sustained population increases. The creation of jobs in retail, business and financial services, tourism and hospitality and health and community services is much more likely to lead to population growth[ii].

The resilience (capacity to recover from shocks) of communities to changes in climate and water availability has been assessed using indicators of community well-being[iii]. Table 4, as compiled by the RM Consulting Group (RMCG), demonstrates the adaptive capacity of the Wentworth, Balranald and Hay Shire Councils.

The economy of the Wentworth Shire is almost totally dependent on agriculture, which is also the biggest source of employment in the municipality, with irrigated agriculture being particularly important in Wentworth. Climate change and reduced water availability therefore pose significant risks to the economy of the Wentworth Shire.

RMCG concluded that the risks posed by climate change and water availability for the Wentworth Shire include:

- reduced on-farm productivity and yields
- reduced competitiveness with international markets due to rises in on-farm costs
- increased incidence of damage to and/or loss of crops from extremes in temperature (heat and frost)
- economic decline due to the dependence of the local economy on agriculture

- reduced potential to attract new industries

Table 4: Assessment of resilience against key indicators			
Key Indicators	**Shire**	**Likely to be resilient**	**Adaptive Capacity**
Remoteness	Balranald Hay Wentworth	X X X	Wentworth, Balranald and Hay Shires all contain populations located within areas classified by the ABS as 'Outer Regional Australia' and 'Remote Australia'. The populations within these Shires are considered more remote than the majority of the Murray Darling Basin (MDB) population, which resides in 'Inner Regional' areas.
Degree of Urbanisation *Population Size*		50,000 people are considered a critical mass at which the community becomes self-sustaining. None of the Shires has a town centre with a population approaching this level.	
	Balranald	X	The Balranald Shire with an estimated population size of 2,770 persons in 2006, has declined by 7.3% since 2001. This decline is projected to continue to the year 2036 resulting in a net loss of 500 people by this time.
	Hay	X	As of the 2006 census, the population of Hay Shire was 3,574 persons. Population decline in the Hay Shire has accelerated in recent years and is projected to continue for the foreseeable future.
	Wentworth	X	Wentworth Shire with an estimated population size of 6,984 persons in 2006, has increased by 1.3% since 2001, due to some major developments along the River Darling. In 2009 the population declined by 0.9% most likely due to the downturn in the agricultural economy for the region.
Degree of Urbanisation *Proximity to a large urban centre*	Balranald Hay Wentworth	X X ✓	According to the classifications used for the ABS Census, Wentworth, Balranald and hay are all classified as Urban Centres or Small Towns (having a population between 1,000 and 9,999 people). However only Wentworth has the advantage of being close to a large Urban Centre such as Mildura. Wentworth Shire with access to services such as high quality health, education, cultural and recreational services. The majority of Wentworth residents who are employed work in the Wentworth Shire (55%) however, a further 35.3% work in the Rural City of Mildura.
Indigenous Population	Balranald Hay Wentworth	X X X	The Indigenous population of Wentworth (597 persons), Balranald (47 persons) and Hay (140 persons) exceeds the average for the MDB and Australia. Past research has shown that Indigenous Australians experience much higher levels of disadvantage than non-Indigenous Australians. Given the disadvantage evidenced for Indigenous Australian in general, it is very likely that areas with more Indigenous people will also show significant disadvantage relative to other areas of the MDB.
Age	Balranald Hay Wentworth	X X X	The populations of Wentworth, Balranald and Hay Shires are aging, with increases in the proportion of the population aged 55 years or more. An ageing population can place additional demands on communities, where the available work force diminishes over time, and health and aged care service requirements increase.
Proportion of employment by industry compared with NSW average	Wentworth	✓	The Wentworth Shire is highly dependent on agriculture, with the proportion of its workforce employed in this sector 3.5 times greater than non-metropolitan NSW. This dependence means the Shire's economy is highly exposed to seasonal climatic conditions, climate change, global commodity price cycles and changes in water policy. The development of a mineral sands mining sector provides a window of opportunity to develop industries that complement the agricultural sector.

2.3.Measuring the economic impact

Research commissioned by the Wentworth Shire Council[iv] measured the likely impact of the introduction of the Basin Plan to the gross value of agriculture production. Table 5 depicts the following three scenarios:

- ***best-case scenario***:- of the gross value of agricultural production with no climate change and no basin plan.
- ***moderate case***:- medium climate change, 3000GL withdrawn via the Basin Plan, High Price regime for crops
- ***worst case***:- high climate change, 4000 GL withdrawn via Basin Plan, Low price regime for crops

Table 5: Marginal impacts to 2030 on gross value of agricultural production (irrigated and dryland) and employment under two different scenarios compared to Base case of no climate change and no Basin Plan*

Municipality	Scenario	GVAP ($ million)	Employment in agriculture as a percentage of total employment
Wentworth	**Best case**	$136	24%
	Moderate case	-$13	-8%
	Worst case	-$43	-12%

*Note that the outputs of the modelling should be read and used with caution as a number of assumptions have been made in developing the inputs to the model and the model also assumes that 'all other things are equal and unchanged' and does not account for economic, technological or social changes that may occur over the modelling period.

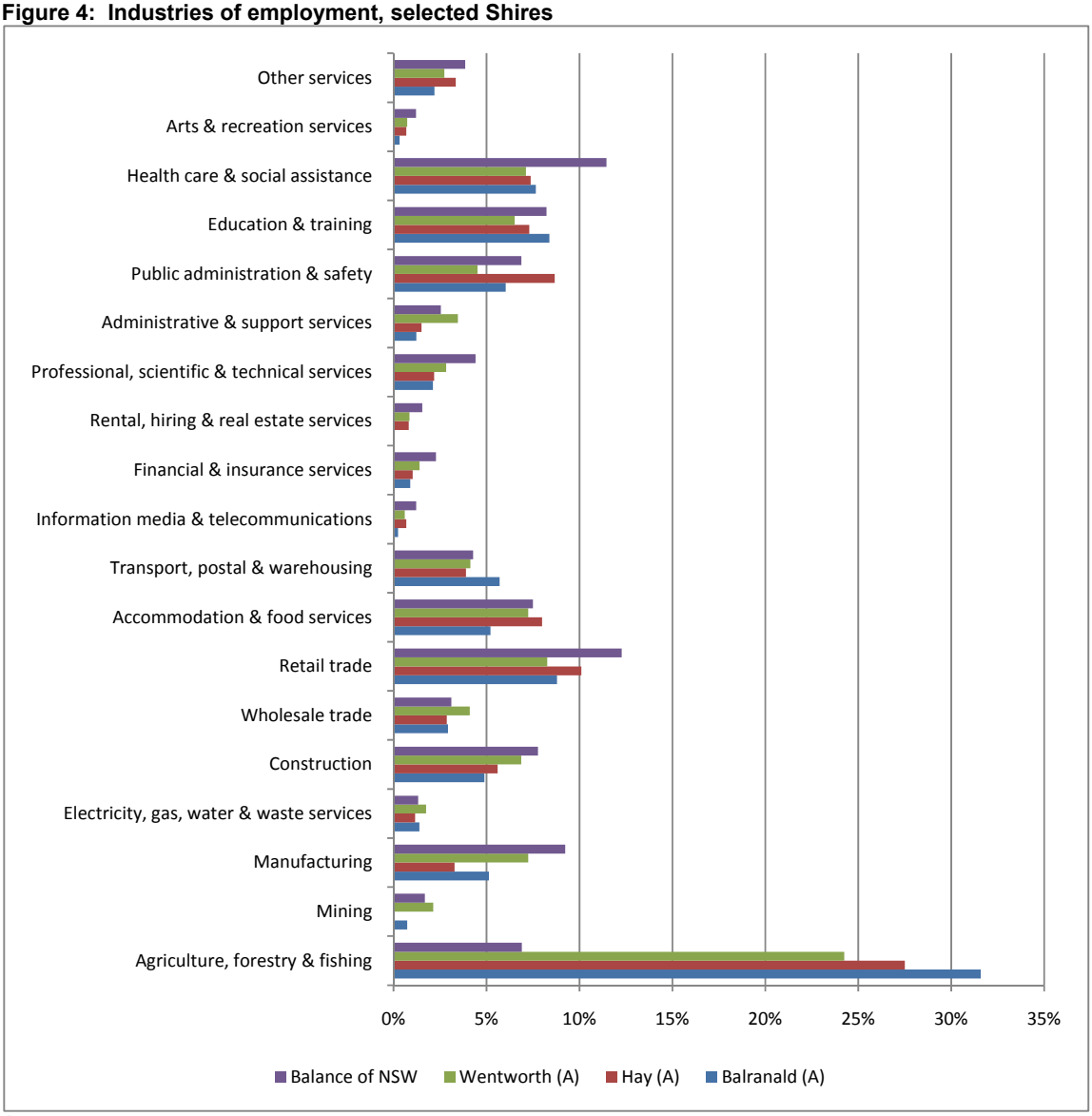
Based on this research, the projected gross value of agricultural output (GVAP) in 2030, under the best case scenario, would provide this region with $136million, and direct employment in agriculture would account for 24% of all employment. Under the moderate climate change scenario, with 3000 GL of water withdrawn via the basin plan, direct employment in agriculture would fall by 8%, and the GVAP would reduce by $13million. The worst case scenario, with 4000 GL withdrawn would see direct employment in agriculture halved, to just 12% and more than a third, or $43million, wiped from the gross value of agricultural production.

In a Shire that is so heavily reliant on agriculture as its key economic driver, the multiplier effect on secondary and tertiary industries should not be under-estimated, but is more difficult to calculate. Through the Strengthening Basins Community Program, the Wentworth Shire Council is conducting more extensive research into this area in order to try to quantify the impacts on secondary and tertiary industries. To date we have explored the industries of employment, used the SEIFA index of relative socio-economic status, and explored whether the social capital of our Shire can withstand the impact.

2.3.1. Industries of employment

Agriculture, forestry and fisheries (almost entirely agriculture) is the biggest industry of employment in Wentworth LGA (figure 4), accounting for over 24% of employment. The other sectors in Wentworth LGA's top five are retail trade (8.3%), accommodation and food services (7.2%), manufacturing (7.2%) and health care and social assistance (7.1%).

Figure 4: Industries of employment, selected Shires



Source: ABS 2006 Census

While individual income is a good indicator of income and financial wellbeing, more precise individual income data is available from the Australian Tax Office (ATO). Table 6 shows that mean individual income, for those with taxable incomes, grew between the 2001/02 tax year and the 2006/07 tax year by almost 29%. Perhaps as a result of the increase in construction and mining in Wentworth Shire, mean individual weekly incomes increased, however, mean weekly income and income growth fell short of the average for New South Wales. This presumably reflects the near absence of very highly paid employment in regional areas.

Table 6 Mean weekly individual incomes of persons with taxable incomes

	2001/02	2005/06		2006/07	
	$	**$**	**% change from 01/02**	**$**	**% change from 01/02**
Wentworth	$599.76	$705.57	17.6%	$771.30	28.6%
NSW	$805.34	$955.75	18.7%	$1,049.98	30.4%

Source: ATO Taxation statistics 2001–02, 2005-06, 2006-07

2.3.2. SEIFA index of relative socio-economic status

Three measures of socio-economic status are reported for Australian LGAs. Table 7 shows that Wentworth Shire is somewhat disadvantaged relative to other areas in Australia1. Relative socio-economic disadvantage declined between 2001 and 2006, whereas disadvantage status for economic resources and education and occupation improved.

Table 7: SEIFA scores across all four indices for Balranald, Hay and Wentworth Shires (2001 & 2006). Average score for Australian in each index is 1000.

	Relative Socio-economic Advantage & Disadvantage			Relative Socio-economic Disadvantage			Economic Resources			Education & Occupation		
	'01	**'06**	**Change**	**'01**	**'06**	**Change**	**'01**	**'06**	**Change**	**'01**	**'06**	**Change**
Wentworth	932	934	2	982	962	-20	930	975	45	934	942	9

Source: ABS Socio-economic Indexes for Areas (SEIFA), 2033.0.55.001. 2001 & 2006

Our research has found that even if climate change and water allocations returned to historical averages, it is likely that the Wentworth Shire will continue to be disadvantaged, with accumulated debt in the agricultural and small business sectors taking a long time to pay off. The loss of educated persons and slow growth in household incomes will also disadvantage the Shire relative to other areas not as dependent on the agriculture sector.

2.3.3. Resilience

The region in which Wentworth Shire is located has been in drought for approximately 10 years with exceptional circumstances extended for the region until 2010. It is likely this has significantly affected community resilience. The Wentworth Shire Council's 2009 Social Plan highlighted that drought has had a number of socioeconomic impacts including:

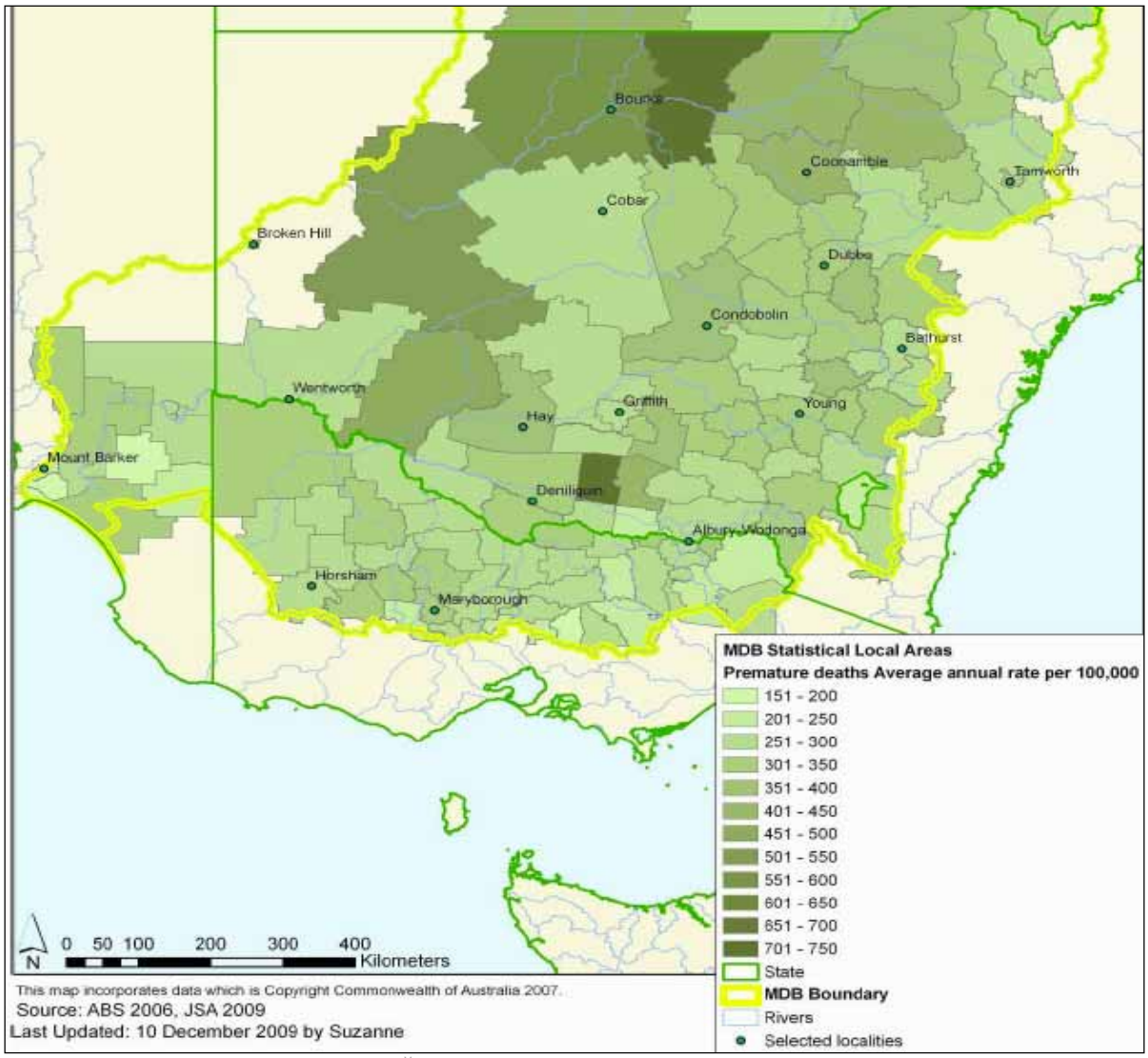
- Economic loss due to crop failure or reduced production;
- Reduced employment levels;
- Reductions in household incomes and discretionary spending in local communities;
- Reduced social wellbeing, with increased levels of social distress, mental health issues and marital breakdown.

It could be reasonably assumed then that the resilience of the Wentworth Shire community has been diminished by the duration and severity of the drought.

[1] Average value of index for Australia is 1000

There is a perception that some in the community are not as resilient as reported. Stress levels in parts of the community are (anecdotally) high, with a concern that the rate of suicide is also increasing. Notwithstanding this, the premature death rate (Figure 5) is lower than in adjacent municipalities and is in the lower range found for the NSW Murray-Darling Basin LGAs.

Figure 5 Levels of premature death by LGA in the Murray-Darling Basin



Source: Cotton Catchment Communities[v]

There is currently a high level of uncertainty in the region as to the impact on water allocations of the MDBP and its Sustainable Diversion Limits. Depending on the degree of reduction in allocations, this could trigger additional business failures, hardship and loss of resilience, all of which impacts negatively on the sustainable productivity and viability of our Shire.

3. OPTIONS FOR WATER-SAVING MEASURES

3.1.Historical use

Irrigation, stock and domestic water within Wentworth Shire Council is primarily provided by Western Murray Irrigation (WMI) Limited. WMI supplies high security irrigation water supply and drainage services, as well as non potable stock and domestic (stock and garden) water supplies to customers in three irrigation districts; Buronga, Coomealla and Curlwaa. The water supplied is drawn from the Murray River and distributed to each district via a pressurised pipe network. Pumping stations provide hydraulic lift required for the water to flow. Pumping stations are metered according to standards specified by State Water, and enforced through regular audits. Deep pipelines and surface drainage networks facilitate drainage of the irrigated land, with pumping stations assisting the transfers of drainage flows and re-lift to the surface. Table shows an overview of the irrigation districts in the Western Murray Irrigation region, including a description of their location, pipe systems, and customer base (Arche Consulting & Halcrow, 2009).

Table 8 Overview of irrigation districts in the Western Murray Irrigation region

	Buronga	Coomealla	Curlwaa
Location of irrigation district	Surrounds the village of Buronga to the north of Mildura.	Surrounds the town of Dareton.	Located to the east of Wentworth
Description of irrigation system	Refurbished in 2008 and consists of a fully automated, high pressure piped system. 99% of farms using pressurised systems and 1% using flood/furrow.	Refurbished in 1996 and consists of a fully automated, low to medium pressure piped system. 92% of farms on pressurised systems and 8% using flood/furrow.	Refurbished in 1989 and consists of fully automated, variable stream flow closed piped system. 75% of farms on pressurised systems and 15% using flood/furrow.
Customer base	30 customers, over 38 farms supplied with irrigation and stock and garden water	62 customers that are supplied with only stock and garden water; 209 customers, over 299 farms supplied with irrigation and stock and garden water	44 customers that are supplied with only stock and garden water; 117 customers, over 147 farms supplied with irrigation and stock and garden water
Size	348 ha	2,837 ha	1,102 ha
Crops	Predominantly vine plantings, with some citrus	Predominantly vine plantings, with some citrus	Predominantly citrus plantings, with vines and seasonal crops

Source: Arche Consulting and Halcrow, 2009

3.2.Licencing

In the Wentworth LGA, 34% of licences are associated with horticulture. These licences use 58% of the region's water entitlements. Approximately 18% of licences are associated with stock, however water use for stock is only 1% of the total water usage in the region. The second largest use of water in the region is associated with the grape and citrus industry, followed by use in the mining industry. The town water supply uses only 2% of licensed water. (figure 6)

Figure 6 Wentworth water licences

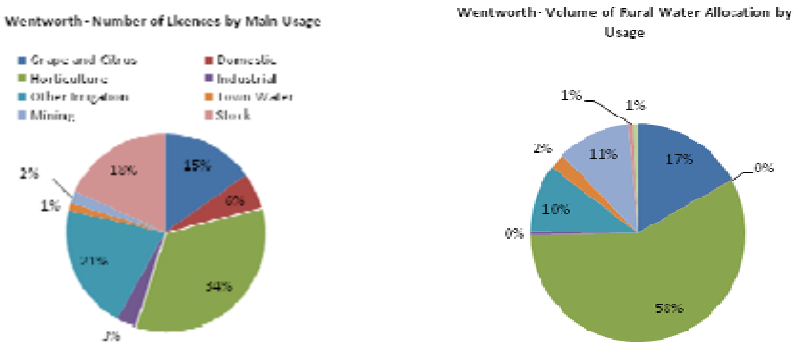
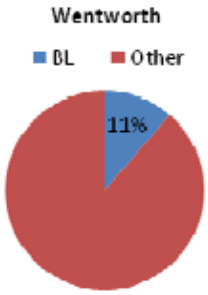


Figure 7 Proportion of bore water sources



In the Wentworth LGA bore licences represent 11% of the total licensed volume of water in the region (figure 7). The Massidon deposit of mineral sand deposits in the region supports a mining industry which utilises 94% of the volume of bore licence water.

3.3.Irrigation water allocations

Availability of water for irrigation has declined consistently within the region over the course of the most recent decade In the Wentworth Shire, estimated total water availability has declined from over 143 GL in 2001-02 to a low of 44 GL in 2007-08. Irrigation water availability recovered somewhat after 2007-08.

As would be expected, general security water and the uses dependent on it have been most affected by recent reductions in irrigation water availability. With the exception of 2006-07 and 2007-08, variability in irrigation water availability has been almost entirely due to changes in general security water allocations.

3.3.1. Trade in water entitlement

A summary of recent history of trade in general and high security water entitlement for the trading zones relevant to Wentworth Shire is given in figure 8. The total volume of trade and average price are represented. Not all of the trades (apart from those in the Lower Darling) are attributable to entitlement-holders resident in the region.

Trade in water entitlement has been variable over time, but accelerated from about 2007-08. Trade has been strongest in general security entitlement in the Murray River basin. In total, entitlement of 169 GL of general security water and 14 GL of high security water entitlement were traded between 2005-06 and 2010-11, in the Lower Darling and Murray River basins. All entitlement trade has been within the respective river basins. Low trade volumes in 2010-11 reflect that the trading year has only recently commenced.

There has been a consistent rising trend in the price paid for water entitlements (figure 8). High security entitlements have been more expensive than general security entitlements. The former have increased in price from about $1200/ML to as much as $2500/ML in 2008-09. Price paid for general security entitlement has increased from as little as $600/ML in 2005-06 and 2006-07 to about $1200/ML in 2009-10. Murray River general security entitlements have typically been more expensive than those for the Darling River basin.

Figure 8 Trade in irrigation water entitlement in river basins relevant to Wentworth Shire, reported by volume and price.

State and Commonwealth governments have been active in water markets, mostly buying general security entitlement to recover water to help meet the needs of key Murray-Darling Basin environmental assets. To date, about 400 GL of general and high security water has been purchased in the NSW Murray trading zone for environmental water recovery.

3.4.Options for water savings measures

There appears to be an underlying assumption within the Basin Plan that all water use by agriculture is founded on inefficient irrigation practices, and that the sustainable diversion limits can be obtained through innovation and engineering solutions, so that more food can be grown with less water.

There is no recognition within the guide to the proposed Basin Plan that some irrigation areas, such as the Western Murray Irrigation district in the Wentworth Shire, are already operating with full pressurised (pipeline) systems. Presumably, where this is the case, these districts should benefit with lower SDLs, but it would seem now that rather than being rewarded for our innovation, our community will be disadvantaged, because they will have the same reductions through the SDLs as irrigation districts that are still operating with open channels, such as the Merbein irrigation district. It is also highly probably that irrigation districts that have not invested previously in upgrading their infrastructure will also be the beneficiaries of large scale infrastructure investment, again at the expense of small districts such as ours.

There also needs to be recognition that there is no return on investment for farmers to become more efficient. Rising power costs, the need to purchase water during times of limited water availability all add to the cost of production. It needs to be remembered that farmers are price takers, not price dictators, and as such they have no way of re-cooping additional input costs.

Anecdotal evidence from irrigators within our region leads us to believe that there are some irrigators who invested heavily in new plantings on redeveloped and green field sites, investing heavily in the latest water saving technology. To fund the investment they would sell down their water right to the minimum amount they required, in order to re-coup some of their capital investment. Little did they realize that water restrictions would later be imposed which would then place them in a situation of having to purchase back water that they had previously sold, just so they could keep their plantings alive.

This has created a situation where farmers are now wanting to hold onto their full entitlement, so in the event that water restrictions are again imposed, they will still have sufficient water to service their absolute minimum needs. Opportunities for producing more food by using less water can only happen if farmers trust that the amount of entitlement that they have will be delivered, regardless of climatic conditions.

The guide to the Basin Plan focusses largely on the need for farmers to become more innovative, yet fails to demonstrate any criteria for efficient use of environmental water. It is the view of the Wentworth Shire Council that the decisions about environmental water are best made at a local level. Mechanisms should be established where local government and local catchment management authorities work closely to identify and manage local environmental water initiatives.

4. The role of Local Government, industry and research sector in delivering & supporting water efficiencies

4.1.Measures to increase water efficiency and reduce consumption

In 2009, the Wentworth, Balranald and Hay Shire Councils successfully applied for a grant to assist them in planning for a future with less water. The first stage of the project sought to establish a base line, understanding the current water situation and the trends and drivers of change. The next two stages of the project will seek to identify water saving measures across the three Shires.

Perhaps one of the unintended consequences of diverting water away from rural towns is the potential for stranded assets, with local government and water supply authorities left to try to run systems with fewer customers. From our early studies, it has become evident that in the case of the Wentworth Shire, there appears to be limited opportunity for large scale water savings. An example of one early identifed project is a water re-use project in Wentworth. This project will divert approx. 80% of the waste water, and approx. 20% of storm water from the township of Wentworth, to a new waste water treatment plant, where the storm-water and effluent would be converted to new fit-for-purpose irrigation water to be delivered to the local golf course and major sporting oval. The advantanges of projects such as this project, and others like it, are significant for small townships such as Wentworth. However, to put it into context, this project would result in a reduction of 155ML per annum of water drawn from the Murray, which is small in the overall context of the water savings targets.

The above example highlights the difficulty with competitive based grants programs. It has been our experience that large scale infrastructure projects in small regional areas with sparse population bases struggle to demonstrate financially viable, or cost effectiveness, which results in competitive grant applications being rejected. We would therefore contend that in addition to competitive based funding, Local governments need to be guaranteed increased annual funding allocations in order to plan and undertake local scale infrastructure upgrades in a more strategic and effective manner.

4.2.Regionally significant projects

The notion that local government areas can join forces to deliver regionally significant water savings projects is vastly misguided when you consider the geographic isolation of Shires such as the Wentworth Shire. The Strengthening Basin Communties Project has demonstrated the difficulties of running a project over three isolated Shires, with very little in common, and each with their own idiosyncrasies and needs. In the case of the Wentworth Shire, its closest LGA is the Victorian based, Mildura Rural City Council. For joint projects to be undertaken, State Governments would need to jointly cooperate to address regional planning issues, providing funding equally to both Shires to address the issues. As it stands at present, there are significant differences between the funding provided by the Victorian governement to the Mildura Rural City Council, and the funding provided by the New South Wales government to the Wentworth Shire.

It has been suggested that the Regional Development Australia (RDA) bodies could provide a suitable mechanism for delivering regional based initiatives. In our case, Regional Development Australia Murray would be the RDA that would be responsible for delivering projects in our area, where again, they will try to deliver projects between NSW Local Government Areas that have very little in common, have no synergistic relationships, and who are so geographically removed from each other that any service sharing arrangements are rendered impractical.

4.3.Establishing effective delivery mechanisms

The guide to the Basin Plan focusses largely on the need for farmers to become more innovative, yet fails to demonstrate any criteria for efficient use of environmental water. It is our view that their are ample opportunities for more efficient use of environmental water, such as the manipulation of weir pool levels at strategic times, to simulate flooding activities, and then return the water back to the river system. This can be achieved with the construction of small scale regulators on the floodplain, to hold the environmental water and deliver water deep into the root zone of native vegetation, before it is released back into the system.

Another example of where local knowledge is vital is in the suggestion that lakes Cawndilla and Lake Menindee should be disconnected from the Minindee Lakes sytem. This would have massive implications for not only those on the Lower Darling, but also all irrigators on the Murray and South Australia. There have been at least 5 studies on improving the efficiency of the lake system, and one should be implemented without delay. It was evident in the last drought that despite, at times, the Menindee Lakes System not having a lot of water in it, without it, the consequences of the drought would have been much worse. If the Menindee Lakes System is to be decommissioned then other storages need to be constructed to take its place.

It is interesting to note that even through the most recent prolonged drought, and under the present operating system, Broken Hill did not run out of water, so it is argued that to continue investigating aquafors to service Broken Hill is simply a waste of money and resources.

Both in times of drought and high demand on the Murray, regardless of storage volumes upstream, the Murray River is incapable of carrying the required volume of water, so the Menindee Lakes System is vital to the delivery of volumes of water. Despite the fact that it has high rates of evaporation, it is absolutely pivotal to the supply of water to the 3 downstream states.

If the driving issue with the Menindee Lakes System is to save water by preventing evaporation losses, then the MDBA should look closely at both the South Australian Lower Lakes, and upstream (above the Menindee Lakes System) on some of the massive farm storages, both of which evaporate more than Menindee Lakes.

Therefore, it is the view of the Wentworth Shire Council that the decisions about environmental water are best made at a local level.

4.4. Opportunities for economic growth and diversification

It needs to be recognised that Local Governments need the ability to be able to respond to changing land use patterns through their local planning schemes. The exodus of farmers from the industry creates an issue of abandoned blocks, which are interwoven with rural residential dwellings. Restricting the amount of development that is allowed to occur in council areas based on historical trends, should cease, allowing the free market to decide where, when and

how it wants to expand. Development in regional areas needs to be actively encouraged, not discouraged by antiquated state planning laws.

In regional areas where the secondary and tertiary industries have evolved from its agricultural base, it is very difficult to simply change direction and attract new industry. Local Government needs the ability to be able to adjust their planning schemes to cater for the changing rural landscape. Rural people must be given the flexibility to decide and to be creative about their future.

For there to be true economic growth and diversification in regional areas, more must be done to address the structural impediments to growth. Regional communities need a strong employment base in order to encourage population growth. The Wentworth Shire Council has recognised that more research is needed into which industries might be able to be viable in our Shire, and to also identify what infrastructure is needed (eg natural gas) that would enable industry to be viable.

4.5.The impact of previous reforms and structural adjustment programs.

The Wentworth Shire Council has identified two major pitfalls of previous reforms and structural adjustment programs.

4.1.1. The patchwork effect

The first pitfall is the patchwork effect that water buy-backs and exit packages create. Indiscriminate water purchases results in viable horticultural properties being interwoven with dried off properties, creating gaps in water delivery systems. Surely the government, with all the money its investing into reconfiguring the Murray-Darling basin system, realises that adhoc water delivery practices produces inefficiences, and additional costs. The fear is that irrigators at the end of a line will be forced to bear the cost of delivering water past dried off properties, which will again add to input costs that are unable to be re-couped.

4.1.2. The 5 year clause

In an ideal world, rather than drying off the properties, it would be advantageous if the adjacent (viable) property owner could be encouraged to purchase the abandoned property, reconfigure the irrigation system and recommence productive use of the land. However, the reality is that previous exit packages dictated that the land could not be irrigated for a five (5) year period, thus rendering the land unsaleable, unuseable, and destined just to sit unused for that period of time.

If the government is serious about reconfiguring and modernising irrigation areas then more needs to be done to assist irrigators who wish to remain in the industry and to encourage remaining land owners to re-develop and adopt innovative irrigation practices. It needs to be recognised that remaining irrigators are bearly surviving, with their reserves and equity being eroded as a consequence of prolonged drought and poor commodity prices. We believe that offering irrigation subsidies on a dollar for dollar basis at this point in time is not likely to be effective when irrigators do not have the available cash, and are unlikely to go further into debt when the industry is in such a vulnerable state.

9. CONCLUSION

The Wentworth Shire Council is extremely concerned about the impacts that the proposed Basin Plan will have on its community. It seems hard to imagine that any Government would place the needs of the environment above the needs of communities, yet this is exactly what the Basin Plan is setting out to achieve. Whilst the Murray Darling Basin Authority hides behind the fact that the amendments to the Water Act received bi-partisan support, we believe that it is incumbent on the Government of the day to ensure that this travesty of justice is not allowed to continue.

The Wentworth Shire Council sincerely hopes that by making this submission to the House Standing Committee on Regional Australia, the decision makers will realize that communities like ours matter.

The ability to turn barren and unproductive land into valuable farming enterprises was made possible through the introduction of irrigated agriculture. Whilst some larger regional towns have developed to a point where they can withstand the downsizing of agricultural production, for Shires like Wentworth, the gross value of agricultural product is its lifeblood, and to take away any part of the lifeline that feeds it, our water, will be detrimental to our future survival.

[i] Wentworth Shire Council, Socio Economic study, Sinclair Knight Merz, 2010

[ii] Draft Murray Regional Strategy 2009-2036, NSW Government Planning, ISBN 978-1-921546 53 2

[iii] Judith Stubbs and Associates (2010) Exploring the relationship between community resilience and irrigated agriculture in the Murray Darling Basin: Social and economic impacts of reduced irrigation water. Appendix 6: Mildura Case Study.

[iv] Community Planning for Climate & Water Availability Change, Briefing Paper, RMCG, November, 2010.

[v] Cotton Catchment's Communities Cooperative Research Centre (Cotton CRC), 2010, www.cottoncrc.org.au