Submission to the Murray Darling Basin Authority (Proposed Basin Plan)

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Introduction

I support a Basin Plan that delivers a balanced outcome: improved environmental flows that support a healthy Murray-Darling river system, and improved water security that supports sustainable food production and regional communities.

A balanced outcome for the Murray-Darling Basin requires a balanced approach to water reform. This requires the adoption by the Murray Darling Basin Authority and the Federal Government of a principle whereby, in the first instance, recovering water for the environment should not compromise food production and regional communities.

It must be determined if sufficient water savings necessary to meet environmental flow targets can be achieved under this principle, which also includes the requirement that sustainable diversion limits (SDLs) should not be imposed on regions in the Basin until these savings are achieved and applied. The Authority and the Federal Government must conduct a thorough audit of the Basin that identifies all potential savings that do not compromise food production industries and regional communities.

The focus of water reform in the Basin must shift from how much water should be recovered for environmental flows to sustain a healthy Murray-Darling system, to how we obtain this volume of water. In the first instance, it should be obtained from savings achieved by addressing delivery losses, improving efficiencies in food production, river management and environmental watering programs, and implementing a standard metering regime.

About the electorate of Chaffey

The South Australian state electorate of Chaffey has a population of approximately 40,000 people and includes more than 2500 irrigated food producers, who comprise the vast majority of irrigation water entitlement holders in South Australia.

The region's economy is very much reliant on irrigated food production. South Australia's Riverland region is almost wholly within the electorate. In addition to being South Australia's largest wine grape production region, the Riverland provides a climate highly suitable for a range of irrigated agricultural industries including citrus, stonefruit, almonds, olives and vegetables. The majority of these involve permanent plantings and perennial horticulture.

Irrigated food production in Chaffey is the most efficient in the Murray-Darling Basin, the result of millions of dollars of private and public investment over the past 40 years. Irrigation water is delivered by pressurised underground pipes. Water use is accurately metered at the point of extraction from the river system and at the farm gate. On-farm irrigation mostly comprises efficient drip or pivot systems.

Irrigated food production and the River Murray are integral to the region's social fabric and its history. Chaffey itself is named for the Chaffey brothers who founded Australia's first dedicated large irrigation settlement at Renmark in the 1890s.

Chaffey is home to two RAMSAR-listed wetlands in addition to hundreds of other wetlands, floodplains, creeks, lakes and lagoons which are part of the Murray-Darling system.

Food security, water security and sustainable regional communities

Consideration of Australia's food security must be given a high priority in Murray-Darling Basin water reform. Food security – the capacity of Australia to produce the amount of food necessary to sustain its population without reliance on imports – is an essential factor in national security and economic sustainability, and minimises the exposure of Australian food consumers to the well-documented health and biosecurity risks associated with imported foods.

While Australia remains an overall food exporter (inclusive of bulk exports like grain, livestock and meat), for the past three years Australia has become a net importer in the food and beverage, grocery and fresh produce sector: total imports in 2010-11 were valued at $24.7 billion, while total exports were valued at $21.9 billion (a deficit of $2.7 billion). This is a growing trend (p20, *State of the Industry Report 2011*, Australia Food and Grocery Council).

The proposed Basin Plan threatens to accelerate this trend, as a considerable proportion of Australia's fresh food production is concentrated in the Basin. Figures provided by the Authority (p21, *Guide to the proposed Basin Plan* Vol 1) highlight the importance of the Basin to Australia's total food production economy: for example, it accounts for 56% of grape production, 42% of fruit and nut production and 32% of dairy production.

Fresh food production in the Basin is underpinned by water security for irrigated agriculture, therefore a key outcome of the Basin Plan must be improved water security for food producers.

Figures provided by the Authority (p21, *Guide to the proposed Basin Plan* Vol 1) also demonstrate the importance of irrigated agriculture to the economies of regional communities in the Basin: a $15 billion per year industry employing almost 100,000 people (as well as another 30,000 people employed in food products industries). This contribution to the national economy, and these jobs, are also underpinned by water security, and are threatened by a draft Basin Plan which proposes to substantially reduce the amount of water available for irrigated agriculture.

Recovering water for environmental flows

While it is acknowledged that over-allocation of the Basin's water resources is a major factor in the environmental challenge facing the river system, much of this can be addressed by eliminating, or substantially reducing, the inefficiencies in the delivery and use of water for irrigation and, to a lesser extent, for environmental and other purposes. This would greatly assist in underpinning water security, while delivering vast amounts of water for environmental flows.

Water waste in the Basin occurs primarily in:

- open channel delivery systems which dominate irrigation infrastructure in much of the southern Basin – these systems typically result in evaporation and leakage losses of up to 50%;
- floodplain harvesting;
- inefficient on-farm practices;
- inefficient storage infrastructure; and
- sub-optimal river management and environmental watering programs.

Eliminating this waste must be a priority for the Federal Government. Quantifying the amount of water that can be recovered for environmental flows by eliminating this waste should be a priority for the Authority. Recovering this water should be prioritised (and projects implemented to achieve it) before SDLs are imposed.

An example of recovery work which should be undertaken prior to the development and imposition of SDLs is the Menindee Lakes. As noted by the Authority (pp 12-14 *River management – challenges and opportunities* 25 November 2011), "...the draft Basin Plan assumes that current operating arrangements for the Menindee Lakes will remain in place". It is our argument that projects to recover water, like that identified by the CSIRO for the Menindee Lakes (Podger 2011 *Darling Water Savings: Options for Environmental filling* 17 November 2011), should be a priority before the imposition of SDLs. This project could recover up to 174 GL for environmental flows without compromising food producers or regional communities in the Basin.

While some potential savings have been identified and quantified with storage efficiency projects such as Menindee Lakes, or with irrigation infrastructure efficiency projects such as stage two of the Northern Victoria Irrigation Renewal Project (p80 *Plain English summary of the proposed Basin Plan* Murray Darling Basin Authority, November 2011) we propose the Authority conduct a thorough audit of all such potential water savings which can be made throughout the entire Basin and returned to environmental flows.

The audit should include, but not be limited to, water which can be recovered as the result of:

- upgrading irrigation infrastructure to a level that matches the most efficient irrigation infrastructure in the Basin (South Australia's network of pressurised pipeline water delivery systems serves as an example of the level of efficiency that can be achieved);

- improving on-farm irrigation water efficiency to a level that matches best practice water efficiency in the Basin (again, the efficiency achieved by most South Australian irrigators serves as an example to follow, although it is acknowledged that some irrigators in other states have achieved similar efficiency levels);
- floodplain harvesting being made more accountable (accurate metering is an essential component);
- reducing evaporation losses incurred in storages like Menindee Lakes; and
- improving the efficiency of environmental watering programs and river management systems, such as the works and measures being proposed for the Coorong and Lower Lakes – in this context, the Basin's environmental assets should be assessed as water users and all possible efficiency gains through better management should be identified in the audit.

The audit should also identify alternative sources of water that can be supplied to Basin water users, such as water recycling, stormwater recycling, and seawater desalination (for example, the Adelaide Desalination Plant or the Upper South-East Dryland Salinity and Flood Management Program).

The audit must be conducted under the **principle that recovery of water for environmental flows must not compromise water available for food production and regional communities**.

Environmental watering plan – use and outcomes

While I generally agree with the principles for environmental watering outlined by the Authority (p37 *Plain English summary of the proposed Basin Plan)* I am concerned that there is no actual environmental watering plan and that a key principle is missing – that is, **water recovered for environmental flows be distributed equitably across the Basin** by the Commonwealth Environmental Water Holder, on merit.

I am also concerned that the proposed Basin Plan, while it mentions objectives and targets of the environmental watering plan, does not focus more on outcomes. Part 3, 7.08 states "...the Authority must measure progress towards the objectives in Part 2 by using the targets in Schedule 7 having regard to the following...(b) ecological objectives and ecological targets set out in long-term watering plans...". While I acknowledge these may be contained in environmental watering programs developed for Basin states and specific environmental assets, I am concerned that the environmental watering plan will not be sufficiently prescriptive in terms of benchmarks for measuring environmental or ecological health, or salinity levels.

The proposed Basin Plan must result in tangible, measurable and sustainable environmental outcomes. The term 'a healthy Murray-Darling system' must be clearly defined in terms of measurable outcomes (for example, improved biodiversity measured by species counts, or improved water quality in the Lower Lakes measured by salinity levels), environmental watering plans must be transparent, and these plans (and their managers) must be accountable for outcomes.

An important barometer for the overall health of the entire Murray-Darling system is the condition of the Lower Lakes and Murray mouth. The Basin Plan must result in Murray mouth outflows to sea except in the most extreme drought conditions, and similarly ensure that there is no repeat of the environmental degradation suffered by the Lower Lakes during the recent drought. The Authority should consider a maximum salinity level in the Lower Lakes as a benchmark in this instance.

Recognising responsible water use

The South Australian State Opposition, South Australian food producers and river communities have throughout the current water reform process consistently and reasonably argued for recognition of the State's responsible water use. South Australia's argument has been ignored by the Authority and the Federal Government with no justification.

I accept the need for a no-borders approach to water reform, but an equitable no-borders approach requires a level playing field.

I consider it necessary to reiterate the key points of difference between South Australia and other Basin states with regard to the Basin's water resources:

1. **South Australia's compliance with caps has limited growth in the State**

   South Australia has complied with the cap on its water entitlements since 1969, and as a result has foregone development and growth opportunities enjoyed by other Basin states which have consistently increased their allocations. The major threat to the environmental health of the Murray-Darling system is the over-allocation of water resources – the over-allocation has occurred in other Basin states, not South Australia.

2. **As South Australia has already limited diversions – current diversion levels would be an unfair baseline**

   Figures in the *Guide to the proposed Basin Plan* show total current diversions (water extracted from the river system) from the 'Murray' region are 4078 gigalitres – NSW 1721 GL, VIC 1692 GL and SA 665 GL. However, using current diversions as a baseline for calculating new diversion limits places SA at a disadvantage because it doesn't take into account the substantial reform SA has instituted over the past 43 years.

3. **South Australia has driven water efficiency**

   South Australia is the benchmark in water efficiency gains in the Basin. While some irrigation districts and individual irrigators in other states are very efficient, none of the other states as a whole can match SA's level of efficiency. This efficiency is the result of over 40 years of reform by growers and government in state-of-the-art delivery infrastructure and on-farm water savings. Contrasting this is the relative lack of similar investment in irrigation infrastructure in other Basin states during this time.

   There are thousands of kilometres of open channels in NSW and Victoria delivering water to their irrigators. Typically, these systems – some of which are a century old – result in significant water losses between the point of natural extraction to the point where it is delivered to a farm. In certain conditions the water losses can be as high as 50%. If these systems were upgraded to the same level of efficiency as those in South Australia's Riverland, losses could be limited to around 3%.

South Australia extracts water through a standardised metering regime. The water used for irrigation in our State is metered at both the point of natural extraction, and at the point of delivery on the farm. This is also in contrast to the often arcane irrigation metering in upstream states, such as use of the 'Dethridge' wheel system.

Irrigated agriculture in SA is characterised by perennial crops, underpinned by high security water entitlements, which return higher value for water than in any other region in the Basin: $9176/ha compared to the Basin average of $3295/ha (p95, *Guide to the proposed Basin Plan*).

Very little water can be saved for the environment via efficiency upgrades in SA because the upgrades have already been undertaken, in most cases with substantial funding contributions by farmers. In comparison, massive volumes of water can be saved via infrastructure upgrades interstate without compromising commercial production.

4. South Australia's draw on the Murray is disproportionately for critical human needs

Because of South Australia's unmatched efforts in improving irrigation water efficiency, critical human needs water (water for domestic and industrial consumption such as that supplied from the Murray-Darling system to Adelaide's reservoirs) constitutes a much larger proportion of total diversions from the Murray-Darling Basin in SA compared with other states (SA: 30%; NSW: 3%; Victoria: 2%).

An inexpensive and relatively expedient way to recognise the efficiency efforts of South Australian irrigators under the Basin Plan would be to better guarantee their water security. This can be achieved by amending legislation that governs the risk associated with carryover water.

Currently, SA irrigators' carryover (stored in Menindee, Hume and Dartmouth) is the first to 'spill' in the event of water being released from these storages. I propose that this water instead be treated the same as carryover water for New South Wales and Victorian irrigators – essentially 'sitting under' water controlled by the Commonwealth Environmental Water Holder in these storages. This would substantially improve SA irrigators' water security.

Recommendations

1. That the Murray Darling Basin Authority and the Federal Government adopt the principle whereby recovery of water for environmental flows must not compromise food production and regional communities.

2. That the Authority conduct a thorough audit of the entire Basin to identify all potential water savings which can be made and returned to environmental flows, without compromising the food production and regional communities. The audit should include, but not be limited to, water which can be recovered as the result of:

    - upgrading irrigation infrastructure to a level that matches the most efficient irrigation infrastructure in the Basin;
    - improving delivery and on-farm irrigation water efficiency to a level that matches best practice water efficiency in the Basin;
    - floodplain harvesting made more accountable;
    - reducing evaporation losses incurred in storages;
    - improving the efficiency of environmental watering programs and river management systems (as well as exploring environmental works and measures to reduce salinity); and
    - investigating alternative sources of water which can be supplied to Basin water users.

3. That all water savings be identified and accounted in the Basin Plan before sustainable diversion limits (SDLs) are imposed.

4. That all consumptive water use in the Basin be accurately metered from the point of natural extraction. Metering standards must apply across the Basin.

5. That the Authority's environmental watering plan be developed and publicly released as soon as possible; that it outline tangible, measurable and sustainable environmental outcomes; that it be highly prescriptive in terms of benchmarks for measuring environmental or ecological health; and that it include provisions for transparency and accountability.

6. That the Authority and the Federal Government recognise South Australia's 40 years of responsible water use by ensuring that SDLs do not compromise the State's diversion allocation and environmental water entitlements, and by better securing South Australian irrigators' water by treating their carryover water the same as carryover water for New South Wales and Victorian irrigators.

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