Conservation Council SA

Response to the Guide to the Proposed Basin Plan

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Introduction

As the peak conservation body for South Australia, representing over 50 of the State's environment and conservation organisations, the Conservation Council of South Australia (CCSA) is pleased to make comment on the Guide to the Proposed Basin Plan.

However before we comment on the Guide, we need to express concern about the broader process of water reform that has led us to this point, which reflects a global trend towards the privatisation of water and other fundamental resources.

As Maude Barlow, Senior Advisor on Water to the President of the United Nations General Assembly, said in her keynote address to the Australian Water Summit in Sydney last year (Barlow 2009):

> Governments at all levels have bought into the notion that water is a commodity, best allocated by the market, and now increasingly in the hands of largely unregulated private water brokers. This development dates back to the 1994 decision to establish an open water market in Australia, basically gifting massive amounts of water to irrigators who did not pay for this public investment in the first place, and giving them pre-emptive rights to this once public water.
> .. This is the privatization of the Murray Darling River where private owners and brokers.. have more say over these depleted water supplies than governments. The whole plan lacks focus toward an end goal with no distinction between water sold to supply overseas markets and water sold for domestic purposes and holds no guarantee of water for where it is most needed – in the lakes, rivers and aquifers desperate for survival.

We seem to be drifting towards an outcome that is heavily negotiated around short-term economic concerns instead of acting on the science to improve the management of the entire system. We believe the Murray-Darling Basin Authority (MDBA) has not adequately used its independence to address the full range of failures in the management of the Basin, which includes the development and use of a water market, under conditions where water is already over-allocated.

We therefore offer our comments on the Guide to the Basin Plan within this context.

Summary

While we do have misgivings about the efficacy of market mechanisms to achieve environmental outcomes, we recognise that the Basin Plan does herald the potential of a more unified approach to reversing the very serious deterioration of our nation's primary river system. We commend this significant step forward. We also appreciate the commitment to transparency that has been made by the Murray-Darling Basin Authority, with all of the studies and modeling used being made publicly available.

In this submission we raise questions about some of the methodology and conclusions in the Guide to the proposed Basin Plan.

We have serious concerns that the long-term averages on which Sustainable Diversion Limits (SDLs) are based do not reflect the high variability of the system, or the extent to which climate change is likely to reduce water availability. Our greatest concern is about the decision to limit SDLs to the range of 3000-4000GL. We will explain why we think this decision was fundamentally flawed, and why we believe this range will not achieve the environmental outcomes that are required.

To a large extent, the final Basin Plan will be a reflection of the feedback received from the community via these consultation processes. We are aware that there has been a heavy bias towards irrigator interests in the feedback, and regrettably not all irrigators recognise how heavily their livelihoods depend on healthy ecosystems. In the interests of compromise, it is therefore likely that the final Basin Plan will aim for the lower end of the SDL range. In the light of this, reducing the upper end of the SDL range so early in the process seems even more misguided.

We urge the MDBA to abandon this decision, and instead commit to an approach that is determined by the best science. It is then incumbent on all levels of government, industry and the community to work together on transitional measures to minimise pain and disruption to irrigation communities. This does not need to be seen as a negative – we believe the Basin Plan offers a unique opportunity for Australians to live within the carrying capacity of our natural resources, value them appropriately, and allow communities new livelihoods that are adaptive and resilient in the face of climate change.

As noted by the 58 environmental scientists who were concerned enough to organise a joint statement (Kingsford et al, 2010):

> ..discussions so far have been dominated by concern about negative, short-term impacts. There has been little consideration of the long-term benefits of a healthy river system. The costs of 'doing nothing' would be unacceptable to everyone. Instead, the Basin Plan will offer a historic, nation-building opportunity to correct past mistakes and plan for the future. It would enable us to maintain a healthy economy while protecting our natural heritage. It is about securing long-term prosperity.

We conclude with a list of key points raised in the submission.

Assessing the Guide to the Basin Plan

Given that the genesis of the Basin Plan is the Water Act 2007, it is reasonable to refer to the objects of that Act to assess the approach outlined in the Guide, and whether it looks likely to deliver those objects.

While the MDBA appropriately undertook a process to determine the water requirements of the system to meet these objects, it then abandoned good process by allowing flawed assumptions and information to influence its decision-making.

As the Guide says:

> Detailed analysis showed that the range of surface water required to meet the environmental objects of the Water Act is between 22,100 gigalitres per year

> (GL/y) and 26,700 GL/y (long-term average), which is between 67% and 81% of the total available surface water under the historical climate scenario.
> To meet this range would require an additional volume of between 3,000 GL/y and 7,600 GL/y (long-term average) from the current diversion limits.

However:

> The Authority has judged, based on the information presented in the remainder of this chapter, that while 3,000-7,600 GL/y is the range of additional water required to meet environmental water requirements, reductions in diversions over 4,000 GL/y would not enable it to meet its obligations under the *Water Act 2007* (Cwlth) to optimise environmental, social and economic outcomes. Therefore, the Authority has judged that it can only consider reductions in current water diversions of between 3,000 and 4,000 GL/y.

We take issue with the conclusion to limit SDLs to a maximum of 4000GL and urge the MDBA to reconsider on four grounds:

1. It will demonstrably fail to meet the environmental requirements of the Water Act 2007.

2. This cannot be justified on social and economic grounds: it is quite clear from a reading of the Water Act 2007 that its objects do not include an obligation to optimise environmental, social and economic outcomes.

3. The information on which assumptions about social and economic impacts were based is flawed.

4. Even if the assumptions about social and economics impacts were credible, this would not justify a desertion of objects in the Act, it would simply indicate that complementary Government programs must address these impacts. We will discuss an alternative approach that we believe would mitigate some of the social and economic impacts – by focusing on the many benefits of investing in healthy ecosystems.

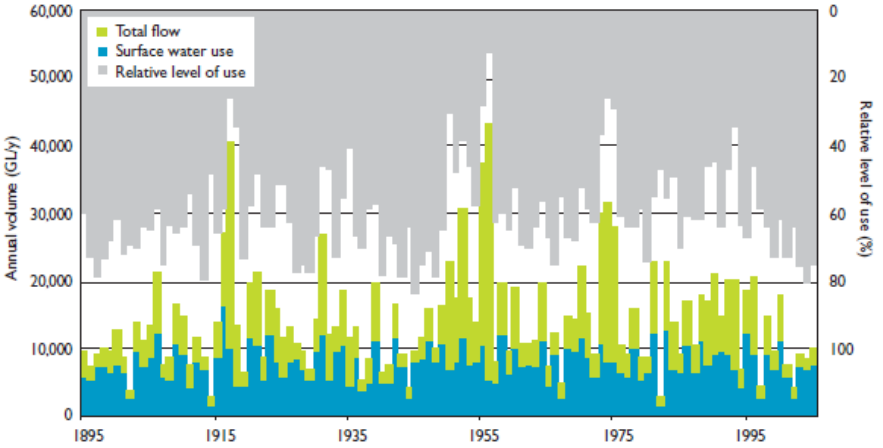
We will elaborate on each of these points below.

But before looking at the outcomes of the proposed range of SDLs, we first need to understand some of the methodology used to develop them – assumptions about long-term averages and the likely effects of climate change.

The methodology behind the SDLs

In reference to this diagram from CSIRO's Sustainable Yields project (CSIRO 2008a, p 33), John Caldecott of the Water Action Coalition notes that the MDBA's use of long-term average for water availability is skewed by big floods (Caldecott, 2009).

Time series at Wentworth (integrating the MDB) of total effective surface water use (including downstream use), total without-development flow and relative level of surface water use under the historical climate



Also, surface water use ranges from a peak of 15,000 GL in 1915 to only a few thousand gigalitres. The MDBA's 13,700 GL longterm average of consumptive use of surface water use has rarely happened.

The Guide claims that the long-term average flow through the Murray Mouth is 5100 GL. As there has been no flow through the mouth since 2001, there will have to be substantial flows for the next couple of decades to maintain this long-term average. The Authority provides no methodology for how this is going to be achieved in practice.

The Authority needs to provide the full time-series statistics for their models and actual conditions so that the likelihood of their proposals can be evaluated.

What has been experienced in the last decade or so is well below the normal range as indicated by long-term averages, and we have to consider what role climate change may be playing in this. At the moment, the Guide's allowances for climate change impacts into the future are minimal.

Climate change impacts

The proposed Basin Plan considers 3% to be an appropriate allowance for the effect of climate change. 3% is a proportion of the predicted 10% reduction in water availability from 1990 levels by 2030 (given that the Basin Plan must be reviewed by around 2021).

Table 4.7 Percentage change in mean annual run-off in the Murray region[a] under different potential levels of global warming

Global climate model	High global warming	Medium global warming	Low global warming
Second wettest global climate model	+7% ('wet extreme' climate scenario)	+4%	+2%
Median global climate model	–14%	–10% ('median' climate scenario)	–5%
Second driest global climate model	–37% ('dry extreme' climate scenario)	–26%	–12%

a The region is as used in the CSIRO Murray–Darling Basin Sustainable Yields Project.

Source: CSIRO (2008)

The projection of a 10% water reduction warrants further examination. As Table 4.7 from the Guide reveals, it is based on two assumptions. Firstly, it uses the median global climate model. This is *not* the model that has the greatest probability of happening, it is simply the model that has the middle ranking. Secondly, it assumes a medium level of global warming. This medium level of warming is the average of the low and high warming scenarios for 2030, using values developed by CSIRO and the Australian Bureau of Meterology.

However in its 2007 Technical Report *Climate Change in Australia*, CSIRO stresses (more than once) that:

> The upper limits of warming presented here… are conservative. There is a significant possibility that warming may occur in excess of these values, particularly later in the century, although the likelihood of this occurrence is impossible to estimate at this stage. It is worth noting that observed carbon dioxide concentrations, global mean temperatures and sea level rise have been tracking the upper end of the IPCC scenario range from 1990 to 2006 (Rahmstorf et al. 2007). Although this 17-year period is very short, it suggests that the mid and low projections may be less likely than the high projections, with significant implications for risk management.

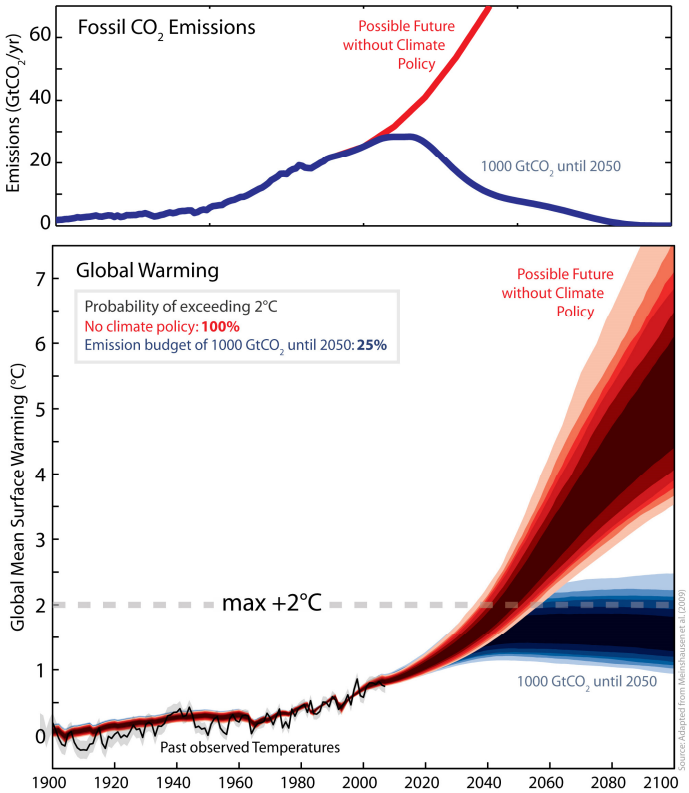
Likewise, in the report from its Sustainable Yields Project, CSIRO (2008a, p 26) notes that "runoff in the past ten years (1997 to 2006) in the southern MDB is similar to the **extreme dry** estimate for 2030 (from the **high global warming** scenario)" and **lower** than the median estimate for 2070 (from the medium global warming scenario) (emphasis added).

Emission storylines and timeframes

As shown in this diagram, for the period towards 2030, the choice of model is most important in considering plausible climate behaviour in the Murray Darling Basin. At 2030, the scenarios for high, medium and low climate change are not significantly different. The continued divergence of climate change impacts based on global human behaviour increases rapidly after 2030.

Governments and communities should keep this context in mind to understand the full scale of potential challenges that lie ahead, and the unacceptability of continued high global emissions.

The Guide could assist in this by describing how the MDB would look if the



http://www.pik-potsdam.de/news/press-releases/on-the-way-to-phasing-out-emissions-more-than-50-reductions-needed-by-2050-to-respect-2b0c-climate-target

current trajectory of high fossil fuel usage continues (eg, the Intergovernmental Panel on Climate Change A1FI emission storyline).

As CCSA noted in its 2009 Blueprint for a Sustainable Future (p 44), "it is entirely possible that the impact of climate change has been underestimated. Without any guarantees of action towards a lower emission future we need to examine the consequences of 2.5–6.5°C of warming by 2100. These scenarios would see the flow of the Murray Darling Basin reduced between 16–48% with devastating consequences". In fact, reductions during the Millenium Drought were even greater.

By describing reductions of 10% associated with climate change by 2030 without the broader context of the impacts in extreme events and trends towards 2100, the Guide is underselling the urgency for taking strong action now.

Furthermore, the 3% allowance assumes no reduction in groundwater as a result of climate change.

Considering all this, the decision to allow for a water reduction of only 3% for climate change seems to err towards a concerning level of optimism.

In a system as devastated as the Murray-Darling Basin, CCSA believes it is long overdue for the Precautionary Principle to be replacing such optimism.

Failure to meet environmental requirements of the Water Act 2007

The Guide lists the following risks *after* the Basin Plan is in operation, which we assume is based on the selected range of 3000-4000GL SDLs:

- insufficient water for the environment (moderate (40–80%) likelihood)
- water quality unsuitable for:
    - Aquatic ecosystem protection — risk is high (greater than 80%).
    - Irrigated agriculture —risk is moderate (40–80%).
    - Drinking water — low risk (less than 40%).
    - Recreation — low risk (less than 40%).
- further decline in the health of water-dependent ecosystems - moderate (40–80%)

Any of these eventualities would be very harmful, and CCSA is extremely alarmed at their degree of likelihood.

In addition, the SDLs under 4000GL range would:

- fail to meet salinity targets, which the Guide itself acknowledges would result in "salt accumulation in wetlands and on floodplains, resulting in a decline in condition of those systems, as well as elevated salinity across the Basin, which may impact on consumptive uses"
- be unlikely to meet the 75% target for river redgum communities

- leave five regions in poor condition (ie ecosystem functions being compromised)
- not provide sufficient water to meet Australia's obligations under the Ramsar Convention.

CCSA is also concerned about:

- a lack of detail in the Guide as to specifically how obligations under international agreements will be met, and
- the use of only 18 indicator sites out of 2442 'key environmental asset' sites.

Also, given the environmental outcomes described in the Guide are based on the optimistic climate change projections discussed above, the risks that they will not be delivered are likely to be higher than stated.

The Objects of the Water Act 2007

Contrary to what has been stated by some, the relevant object of the Water Act does *not* require the Basin Plan itself to optimise economic, social and environmental outcomes. It requires the Basin Plan to **"promote the use and management of the Basin water resources in a way that"** optimises those outcomes. This sort of qualifier is not found in the wording of objects such as:

(b) **to give effect to relevant international agreements**

(d) (i) **to ensure the return to environmentally sustainable levels of extraction** for water resources that are overallocated or overused; and

> (ii) **to protect, restore and provide for the ecological values and ecosystem services of the Murray-Darling Basin** (taking into account, in particular, the impact that the taking of water has on the watercourses, lakes, wetlands, ground water and water-dependent ecosystems that are part of the Basin water resources and on associated biodiversity)

Flawed information about social and economic impacts

The MDBA's assumptions about impacts on communities were based largely on the findings of the Marsden Jacob Associates report. One of the key steps in the process to produce this report was interviews to assess the impact of reducing allocations to irrigators at the farm, industry, and regional community levels. As explained in the report (Marsden Jacob Associates et al 2010, p 16):

> As agreed by the MDBA, these face-to-face interviews sought to understand how regions and irrigation sectors of the regional economy would respond to permanent reductions in the order of 20%, 40% and 60% of the long-term cap equivalent (LTCE).
> The supply reduction scenarios were discussed as **no compensation, no transitional support scenarios**. That is, interviewees were told that the regional water allocations would be

> reduced, but were *not told* that they would be compensated for this reduction by some mechanism.

The report describes this as an "extreme scenario". In fact it is more than just an extreme scenario – it ignores various clauses in the Water Act 2007, which provide:

- phase-in time for States to comply with the Basin Plan through transitional water resource plans and interim water resource plans (up to eight years for Victoria)
- a temporary diversion limit that allows extra water to be taken for up to five years to minimise negative social and economic impacts when SDLs are lower than the amount of water taken historically
- a risk allocation framework that requires the Commonwealth to provide payments for changes to water allocations as a result of a change of government policy or certain other circumstances.

And of course, this scenario also does not include any of the other forms of support and compensation that will be provided outside of the Basin Plan.

Given all this, CCSA questions how such modeling can really be taken seriously. It certainly does not seem to add particularly relevant or valid information about community impacts.

To put into perspective some of the fear-mongering about social and economic impacts, Fair Water Use Australia points out:

> Even in 2000-1, before the recent drought took hold in the Basin, the value of IRRIGATED production in the region was only 13% of Australia's total agricultural output (Source data: Australian Bureau of Statistics).
>
> The vast majority (nearly 70%) of agricultural output from the Basin is NOT dependent upon irrigation (Source data: ABS).

Gross value of agricultural commodities and related irrigation data 2005-2006*

* All calculations based on data obtained from the Australian Bureau of Statistics

	Water Use National (Billion litres)	Value National ($ AU)	Litres irrigated / $ AU generated (National)	Water Use Murray Darling (Billion litres)
All commodities	< 11,000	37.3 billion	295	7,400
All crops	7,850	19.6 billion	400	5,400
Cotton	> 1,730	< 1 billion	**1828**	> 1,500
Rice	> 1,250	1/4 billion	**4569**	>1,250
Non-rice grains	< 700	7.4 billion	228	< 625
Wheat		5.1 billion		

John Caldecott of the Water Action Coalition says (Caldecott 2009):

> The majority of irrigated water use in the MDB is for export. This is OK when there is a surplus of water but not during low flows and droughts when the needs of Australians for food and water must be put first. The proportion used for Australian needs is approximately indicated by the water required for fruit and veg which in 2004-05 totalled 551 GL or just 7% of the total water diverted in that year.

Modeling by ABARE-BRS (2010) that factored in the Government's Water for the Future program and additional water purchases found that a 3500GL SDL would only reduce the MDB's Gross Regional Product by 0.7% in 2018-19, and employment in the region would actually *increase* by 0.1%.

The level of angst that has surrounded the Guide seems entirely out of proportion to these findings. It is true that impacts will not be distributed evenly, with small, irrigation-dependent towns likely to suffer worse effects. However this is exactly where the Government's Regional Development portfolio should target assistance. The potential effect of such programs is yet to be quantified, and in this submission we argue that our economy needs some fundamental changes to create employment opportunities from protecting ecosystems – this is discussed further below.

There has been no acknowledgement that free trade in water also creates social and economic risks - that public and private investment in irrigation communities could be stranded by allowing the water market to transfer water

to whoever will pay the highest price. And to date, there has been no modeling to look at the social and economic *benefits* of taking action – or, for that matter, the costs of taking no action. The modeling seems to be very skewed towards exploration of negative impacts of taking action.

Yet the MDBA has seen fit to use this skewed modeling to justify the decision to rule out the SDLs that are needed to restore the MDB to reasonable health, to satisfy the legal obligations of the Water Act 2007, and the requirements of the international agreements that Australia is party to.

We are astounded that this critical process contains such blatant flaws.

Rewarding efficient water users

CCSA understands that the establishment of the Murray Darling Basin Authority and the development of the Basin Plan are part of an effort to overcome the competing interests of the separate Basin jurisdictions. For this reason, the MDBA has not tended to be appear very receptive to grievances expressed by individual states about their specific circumstances.

However we think it is important that it is acknowledged that South Australia voluntarily capped its diversions decades ago, and as a result, South Australian irrigators have been far ahead of other states in their highly efficient water use.

There are valid queries about equity when allocation reductions are borne equally across states, but the capacity to achieve further efficiencies is far from equal.

CCSA recommends that a mechanism be established to ensure that the most efficient water regions are not overly penalised, and that allocation reductions are encouraged where there are less efficient operations. This could be achieved via targets for water efficiency.

A better way: paying for ecosystem services

The crisis in the Murray-Darling Basin is a classic Tragedy of the Commons and only new ways of thinking will lead us out of it. The privatisation of water in Australia has allowed financial market interests to run the agenda, while the critical ecosystems providing all of the bounty have been neglected because the services they provide are currently uncosted.

But although the services are not yet costed, we are all bearing the costs associated with the loss of our natural capital. The Basin Plan is an example of the time, money and effort that must be invested when natural systems go into serious decline.

CCSA shares the concerns of Maude Barlow, who advocates a radical change to humans' relationship with water that includes making water a public trust,

restoring damaged watersheds and preferential allocation of water for the environment and local, sustainable food production over other uses.

While this is clearly beyond the scope of the Basin Plan, CCSA believes that needs to be informed public debate on the privatisation of water resources to ensure that basic human and environmental rights to water are legally protected and prioritised over private interests.

We also need to fix the gaping hole in our economic system: its omission of ecosystem services.

Fortunately there is increasing recognition globally of the need for new approaches. The Economics of Ecosystems and Biodiversity (TEEB) project suggests six steps for including ecosystem services in local/regional policy (TEEB 2010, p 6).

Table 1: Six steps for including ecosystem services in local/regional policy	
Steps	**Strategies and tools**
Step 1: Specify and agree on the policy issue with stake-holders	This ensures that all important aspects are being considered and avoids misunderstandings during decision making and implementation • Initial stakeholder analysis and participatory appraisal methods elucidate different perspectives and opinions on the policy issue (Chapter 3). • Management frameworks such as ecoBudget facilitate mainstreaming concern for ecosystem services in different public management areas (Chapter 4).
Step 2: Identify which services are most relevant	For a first appraisal, discuss these questions with colleagues (Chapters 2 and10): • **Which** ecosystem services are central to my local/regional society and economy? • **Who** depends on them most? • **Which** services are at risk? • **How** do policies affect them?
Step 3: Define infor-mation needs and select appropriate methods	Before commissioning an assessment determine what kind of information on which ecosystem services you need. This depends on how you want to use results (Chapter 3 and 10). Options: • Qualitative description - e.g. of the importance of regulating or cultural services, for raising public awareness • Biophysical Quantification – e.g. of trends in ecosystem change under different scenarios, for decision support • Monetary valuation – e.g. of selected provisioning services, for fine-tuning a payment scheme
Step 4: Have eco-system services assessed	• Frameworks that conceptualize ecosystem services (Chapter 2). • Instruments for valuing ecosystem services (Chapter 3) • Options for ecosystem services analysis within spatial planning and environmental assessments (Chapter 6). • Manuals, tools and databases (Annex)
Step 5: Identify and appraise policy options	Insights from the assessment can feed into policy in different ways (Chapters 3 and 10): • Inform debate within a participatory process, • Provide the basis for a cost-benefit analysis • Serve as input for a multi-criteria analysis
Step 6: Assess distributional impacts	Changes in availability or distribution of ecosystem services affect people according to their dependence. These sometimes hidden effects need to be anticipated (Chapters 2 and 10). Options: • Sustainable Livelihoods Approach to determine dependence • poverty assessment tools

This approach requires that ecosystem services are ascribed a monetary value, and it also engages affected stakeholders from the start, in defining the issue and being part of the solution. However it does not do this to the extent of allowing commercial demands to override the requirements of biological systems, as seems to be occurring with the Basin Plan. It allows science to determine the response required, and then has procedures to address the human impacts associated with this.

One TEEB case study looked at quantifying the economic value of the ecosystem services provided just by the Murray River (not the whole Basin) in 2007 $AUD/Year:

Ecosystem Service	Valuation Method	Source	Total Value ($m)
Recreation and tourism	Market Prices	Howard, 2008	2,970
Food production	Market Prices	Australian Bureau of Statistics, 2008	1,600*
Water Quantity (environmental flows)	Contingent Valuation	Bennett, 2008	80
Water Quality (no salinity)	Avoided Cost	Connor, 2008	18
Total Economic Value			**4,668**

(TEEB 2010a, p 19)

This nearly $4.7 billion is undoubtedly a small proportion of the total value of all ecosystem services provided within the Murray Darling Basin, when you consider the full spectrum of services described by the TEEB project (TEEB 2010, p 8):

Ecologist Dr Kerri Muller describes some of these services provided by ecosystems in the MDB (Muller, 2010):

- breaking down sewage and exporting tonnes of salt out through the mouth
- regulation of groundwater levels and quality as appropriate rates of recharge reduce secondary salinisation of productive lands and waters
- nutrient transformations, reducing algal blooms and making waste into useable nutrients
- transport of agrichemicals, which improves the efficacy of chemicals because less resistance builds up in the ecosystem
- carbon sequestration as new forests, reeds, and functioning ecosystems sequester more carbon
- flood mitigation and controlled deposition of sediments
- genetic resources, which provide adaptability to a changing future climate
- provision of shade and shelter for livestock, which improves farm productivity
- erosion control as good tree/reed growth can reduce or prevent bank slumping and erosion of waterways.

CCSA believes that the Basin Plan needs to take much fuller account of the value of all these services, and consider in its various scenarios the costs of not providing adequate water for them to flourish.

A strategic approach

In our Blueprint for a Sustainable Future (p 53), CCSA called for these key elements to address the problems in the Basin:

- A strategic approach to water buyback that is based on the viability of different irrigation regions in the face of climate change, and infrastructure investment in areas that will remain viable.
- Accounting for all water in the basin and consistent metering across jurisdictions.
- Structural adjustment support for communities to diversify their economies.
- A market for ecosystem services so that restoration of the land and environmentally beneficial practices such as organic agriculture can be recognised and generate income for farming communities.

Instead of the current 'scattergun' approach to infrastructure investment and buyback, there should be a process to first identify the areas that will be viable for irrigated agriculture in the long-term, determined using land capability data and climate change projections. These regions can then be targeted for modernisation and efficiency measures, while other areas transition to either dryland agriculture or the provision of vital ecosystem services.

Environmental watering programs should also be strategic, prioritising sites that contribute to the health of the river system as a whole and where water can be reused at downstream sites. As with irrigated agriculture, there should be

investment in infrastructure works to achieve maximum benefit from the available environmental water.

Farmers in non-viable regions would be paid compensation for real water and benefit from an exit package. Under these circumstances, the water buyback would be exempted from all restrictions on water trade. However this does not mean that communities in these regions should cease to exist.

Where possible, communities must be empowered to diversify their economies. A range of programs and support from all levels of government are needed to provide fresh opportunities. But a vital part of this is to recognise and reward ways of relating to the land other than agricultural ones.

There was some discussion and an example above of the true monetary value of ecosystem services, but in Australia we have not yet taken the step of funding them. Irrigation communities that move to ecosystem service provision such as revegetation for salt and sediment mitigation, water quality control, biodiversity provision and carbon sequestration should receive an income that reflects the real value of the services they provide. The Government is currently developing guidelines for its Carbon Farming Initiative, which is an example of at least one such income stream that will soon be available to farmers and landholders. We need many more to follow.

These new sources of income would allow communities to remain viable, with people staying on the land and becoming land stewards. Landscapes would remain productive, biodiversity would benefit and problems of weed and pest infestation would be reduced.

Key points

- We have serious reservations that water markets will deliver the best environmental, social and economic outcomes for the MDB, particularly under conditions where water is already over-allocated.
- We believe the MDBA should have questioned this approach.
- The Guide has used long-term averages that do not reflect the high variability of the system.
- The Guide's allowances for climate change are very optimistic; they do not reflect recent experience or the climate models aligned to current behaviour.
- The MDBA has made a flawed decision to limit SDLs to 3000-4000 GL, on the grounds that social and economic impacts associated with higher SDLs would be too high.
- While the Water Act 2007 has clear objects about environmental outcomes, the Guide acknowledges these will not be delivered by 3000-4000GL SDLs.
- There is no mandate in the Water Act 2007 for environmental objects to be compromised by social or economic considerations.
- Modeling of social and economic impacts has been very skewed, with no assessment of the impacts of no action, the benefits of taking action, or the benefits of higher SDLs.
- The Guide does not acknowledge South Australia's voluntary diversion cap, or the fact that efficiencies achieved by substantial infrastructure investment make further water savings relatively much harder to achieve.
- We need to properly quantify all of the benefits provided to humans by healthy ecosystems, and factor these into our economy, in order to prevent their further decline.
- Ecosystem services in the MDB are worth billions of dollars to Australia's economy, and we need to start paying for them.
- The Basin Plan needs to start by determining which regions will be viable for irrigated agriculture into the future, using the best (ie, most likely) climate change projections.
- Infrastructure investment should be targeted in these regions, with Government support for non-viable regions to transition to dryland agriculture or the properly compensated provision of ecosystem services.

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