



28 February 2011

Siobhan Leyne
Inquiry Secretary
Standing Committee on Regional Australia
PO Box 6021
Parliament House
Canberra 2600

Dear Ms Leyne,

Inquiry into the impact of the Murray-Darling Basin Plan in Regional Australia – response to question on notice

I appeared at the above inquiry in Bendigo on 21 January 2011 on behalf of the Australian Network of Environmental Defender's Offices. Please find below our response to the question we took on notice at the hearing. The relevant passage in the transcript is as follows:

Dr STONE—*I notice that on page 3 of your submission you say:*

The Guide has undertaken extensive research ... but has failed to incorporate scientific findings into policy decisions underpinning the Guide.

From my comments earlier, you will see that I actually agree with you on that, but can you tell us which scientific findings in particular you feel most needed to have been used? Where were you focusing when you made that statement that scientific findings were not used and do not underpin the guide?

Our response is as follows.

Setting surface water SDLs

The Guide states that a minimum of 3000GL and a maximum of 7600GL for environmental water returns would meet the environmental requirements of the Act. However, the Guide then proceeds to state that, in order to fulfil their obligation to optimise social, economic and environmental outcomes while meeting the environmental requirements of the Act, the MDBA will only examine the lower band of 3000 – 4000GL because the social and economic impacts above that would be too great. We believe this particular approach does not accord with the Act.

If the 3000-4000GL would meet the environmental requirements of the Act then the MDBA would be free to limit its consideration to this range in order to optimise social and economic and environmental factors. However the

Guide itself plus evidence from other sources indicates that the lower range option will not meet those requirements.

The following evidence indicates that the 3000 – 4000GL will not meet the environmental requirements of the Act:

- a) The Guide states that the lower range will leave five regions in 'poor' condition.¹ Catchments with a 'poor' rating were judged to be in a state where the ecosystem functions are at significant risk of being compromised.² This does not accord with the requirement for SDLs to be set at a level that does not compromise key environmental outcomes including ecosystem functions.³
- b) The Guide states that the predicted outcomes at the 3000GL level have a high dependence on a long-term return to wetter climatic conditions.⁴ This statement and the MDBA's reliance on it does not appear to accord with the best available climate science (as the Authority is required to do under s21(4)). In fact, the CSIRO has said recently that a return to wetter climatic conditions is unlikely, at least for the southern basin, based on research CSIRO did for the MDBA.⁵
- c) 3000-4000GL is unlikely to meet the environmental requirements of the international agreements. For example, Professor Max Finlayson has stated that 3000-4000GL will not maintain the ecological character of many of the wetlands in the Basin as is required by the Ramsar Convention, and that setting the SDL at that level will breach Australia's obligations under that Convention.⁶
- d) The Guide gives a comparison in Chapter 8.11 of what outcomes can be expected to be achieved under each of the three lower scenarios. It is clear that for most of the outcomes, 3000GL would not meet the environmental requirements of the Act. For example, 3000GL is likely to lead to a slow decline in waterbird numbers⁷, will not meet the threshold for native fish breeding⁸, and is unlikely to meet the target of 75% of red gum communities maintained or restored⁹. The assertion in the Guide that 3000GL is within the range that meets the environmental requirements of the Act is therefore contradicted by the MDBA's own analysis. Outcomes for the 3500GL and 4000GL scenarios are improved but will still not meet environmental requirements in all areas.

Therefore, the MDBA's assertions in the Guide that the lower band *will* meet the environmental requirements of the Act this does not appear to be supported by the MDBA's own analysis. Certainly the 3000GL scenario appears in no way to meet the environmental requirements of the Act.

Critically, the MDBA has stated that its decision that the social and economic impacts justify not setting SDLs above 4000GL was based on a single study done by Marsden Jacobs. The Marsden Jacobs study was based on interviews with entitlement holders – posing questions such as whether negative social and economic impacts

¹ See page 74 of the Basin Plan Guide.

² See page 72 of the Basin Plan Guide.

³ Definition of 'environmentally sustainable level of take' at s4.

⁴ See page 75 of the Basin Plan Guide.

⁵ See for example CSIRO media release 'Study indicates a changing climate in the South-East' 22 October 2010 <http://www.csiro.au/news/Study-indicates-a-changing-climate-in-the-south-east.html>.

⁶ Presentation at the ANU Crawford School Dialogue on the Murray-Darling Basin, 15 October 2010, paper to be released.

⁷ See page 114 of the Basin Plan Guide.

⁸ See page 117 of the Basin Plan Guide.

⁹ See page 118 of the Basin Plan Guide.

would be too great if their allocations were reduced by 20%, 40% or 60%. These questions do not accord with the Act or the way it is to be implemented (for example no individual allocations will actually be reduced), is unlikely to meet the requirement of 'best available socio-economic analysis'¹⁰ and therefore appears to be an unsound basis for making the key decision in the development of the Basin Plan.

Risk Assessment

The MDBA has identified areas that pose a risk to the future water resources of the Basin, and in assessing the risk notes that it is unacceptable for any of the risks to become a reality. Bayesian models analysed by MDBA show that 2 of the 4 risks identified¹¹ have a moderate (40-80%) likelihood of occurring, and 1 of the 4 risks identified has two sub-sections with a high (>80%) likelihood of occurring¹². The fourth risk identified (policy with unintended impacts), does not appear to have been assessed using comparable methodology, has been prioritised as high/highest in terms of management strategy, and has been identified as requiring further work.

The risk assessment indicates that a return of 3000GL of water to the environment will not result in protection of key assets and ecosystem functions, and that this scenario also results in a moderate risk that water will so affected by salinity and nutrients as to be unsuitable for irrigation. The results of the risk assessment do not meet the objectives of the Guide as interpreted from the Water Act, namely maintain and improve ecological health; establish limits to take based on environmentally sustainable determination; and maintain appropriate water quality¹³.

Given that MDBA admits that lack of knowledge contributes to the high risk ratings, and that further information is needed to inform models, ANEDO submits that the proposed moderate to high risk of impacts as discussed above is unsustainable and indicates that science is not underpinning the policy decisions of the Guide.

Transparency of data sets, data analysis and modelling assumptions

In modelling the predicted climatic conditions of the Basin under various climate change conditions, MDBA has assumed a median global climate model that is not in accord with contemporary climate science predictions.

In addition, analysis of the long term socio-economic impacts for the 3000, 3500 and 4000GL reductions show no significant difference. Without a significant difference, there is no scientific reason why the lower limit (3000GL) should be selected over the 4000GL scenario. However, given that the modelling data is not available for higher reductions (up to 7600GL), the decision by the MDBA to favour the 3000GL scenario is not easily understood.

Hydrologic Indicator sites (Key environmental Assets) – Identified Targets

MDBA has identified 18 environmental assets to be used as an indicator of ecosystem health across the Basin, and has determined that average end-of-system flows will be around 60-80% of without-development flows.

¹⁰ Water Act s 21(4)(b).

¹¹ These risks are "insufficient water for the environment" and "poor health of water-dependent ecosystems". Guide to the Proposed Plan, Technical Background Part 1, pp 75-77

¹² This risk is "water quality unsuitable for use" and the two subsections with a high likelihood of occurrence are "aquatic ecosystem protection" and "Irrigated agriculture"

¹³ MDBA (2010) Guide to the Proposed Plan, Technical Background Part 1. pp77-78

Figure 4.10¹⁴ identifies the environmental water requirements for the 18 hydrological indicator sites (except for 4 sites which have not been included in the analysis). Only 2 sites have water requirements that fall within 60% of without-development flows, and both of these have very high uncertainty ratings.

In fact 2 sites have very high uncertainty ratings at 80% of without-development flows.

If the key environmental assets are chosen as a representative of the health of over 2000 assets in the Basin, Figure 4.10 indicates that the asset (or assets) with the highest demand for water, namely Booligal Wetlands, or Macquarie Marshes, should set the lowest percentage flow throughout the Basin in order to protect all assets. Failure to do so, in the knowledge of water requirements, shows a lack of commitment by the Authority to commit to the Objectives of the Guide, and a predetermined acceptance of failure to both meet the Objectives and to protect even the key environmental assets.

It is uncertain which of the other 2000 assets throughout the Basin are represented by Booligal Wetlands and Macquarie Marshes, but it appears certain that if the end-of-system-flows are less than 80% for these two assets, many other assets throughout the Basin will not receive the environmental watering required to maintain and improve their condition.

Please contact me if you would like further information.

Yours sincerely

Nicola Rivers
Law Reform Director
Lawyer
(on behalf of ANEDO)

¹⁴ MDBA (2010). Guide to the Proposed Plan. Technical Background. Part 1. p.109.