

MDBA Science Leaders' Forum

Background

On 3-4 May 2011, the MDBA invited a selected group of scientists to a Forum to address a series of questions around the application of science to the determination of an "environmentally sustainable level of take" (ESLT) in the development of the proposed Basin Plan. This short document outlines the questions the Forum was asked to consider and a summary of findings from the Forum's deliberations.

Terms of Reference

The Forum was asked to consider the four questions set out below, and was provided with a series of presentations from technical staff of the MDBA spanning the environmental, hydrologic and socio-economic work undertaken to determine an ESLT from a surface water perspective only. The Forum held discussions with the Chair of the Authority and the Chief Executive Officer and members of the Executive team.

Questions to the Forum

1. Has the MDBA accessed the best available information and science?
2. Has the MDBA correctly interpreted this science?
3. Has the MDBA reasonably applied this information and science?
4. What is the additional science or research that the MDBA should consider in reviewing the ESLT?

Forum Findings

1. The Forum recognises the need to reduce consumptive water use in the MDB if improved ecological outcomes are to be achieved and recognises the criticality of the opportunity presented by the Basin Plan to drive this reform. Given the scale of the reform it is imperative that it is guided by robust and defensible science
2. The Forum was concerned that a process of structured engagement with the science community has begun very late in the development of the Basin Plan, and this intrinsically limits the extent to which it can add value in the remaining time prior to the release of the proposed Basin Plan. Nonetheless, the Forum strongly recommends that a well structured, engaged and properly resourced science review process be put in place as soon as possible

given the long-term process for finalising and then implementing the Basin Plan.

3. Given the requirement under Section 21(4b) of the Act for the Authority to perform its functions using "best available science and socio-economic analysis" the Forum was of a view that the first activity of a science panel would be to conduct a properly structured and managed science review around the Basin Plan. The two-day Forum did not, in of itself, represent such a review process.
4. The Forum was of a view it was likely that the MDBA has accessed the best available science and information in determining an ESLT. However, the Forum did not have sufficient time nor was it presented with information to allow it to understand or assess what science the MDBA has actually accessed in determining the ESLT.
5. However, the Forum was not presented with a clear, robust, overarching conceptual framework for the science guiding the determination of an ESLT. In discussion it became apparent that such a framework has not been developed by MDBA.
6. The Forum was presented with information that represented a wide range of options for reductions in average annual surface water diversions across the Basin. There was no clarity in the gradation of ecological outcomes that could reasonably be expected across this range. The range was not described in terms of different interpretations or "keyness" and "compromise" as used to define the ESLT in the Act. Rather, the range was described in terms of different levels of risk to achieving ecological objectives. However, this risk scale was not quantified, not ecologically disaggregated (what ecological components were at risk) and no science was presented that informed the assessment of different risk levels. Risk mitigation strategies associated with different options were not fully developed or presented to support various options for reductions in surface water diversions. The Forum was of the view that it is both scientifically feasible and appropriate to express the different options in terms of ecological outcomes and thus allow the MDBA to be clear on the interpretation of "keyness" and "compromise" that will be embedded in the Basin Plan policy position.
7. The presentations indicated that none of options currently being considered by MDBA for reductions in surface water diversions (which are all at the lower end of the range referred to above) are expected to fully provide the environmental water requirements associated with the full range of ecological objectives. The ecological consequences of not meeting specific environmental water requirements were not presented to the Forum. The Forum was of a view that any of the options being considered would deliver ecological benefits, however, it was not demonstrated that any of the options currently being considered represented an ESLT as defined in the Act. The Forum believes there is need to clearly demonstrate a scenario that would represent an ESLT in the absence of any such mitigating strategies.

8. The MDBA presented a view that the short-falls against environmental water requirements could be overcome by a range of risk management strategies (including smarter operational management and a mixture of works and measures). The Forum was not presented with clear evidence that these short-falls could be reasonably mitigated by such measures. The Forum encourages the MDBA to seek to establish the evidence for the benefits that can be delivered by such mitigation strategies.
9. The Forum was concerned that the Australian Government's current approach to recovering water for the environment does not appear to be well aligned with meeting environmental water requirements and the temporal variability inherent in these requirements.
10. The Forum was concerned that under the Basin Plan the largest fraction of environmental water will continue to be "planned environmental water" and not held "environmental water", and there appear to be no mechanisms proposed to protect these volumes of planned environmental water in the face of a likely drying climate. This lack of protection would significantly reduce the likelihood of meeting the ecological objectives of the Basin Plan under a drying future climate.
11. For whatever level of environmental water recovery is established via the Basin Plan, there needs to be a clear and science-driven strategy of maximising the ecological outcomes from the available environmental water and mitigating against the risks to agreed ecological outcomes.
12. None of the options being considered for reduction in surface water diversions will ensure full protection of key environment assets and key ecosystem function. Thus mitigation strategies will be required to maximise the outcomes from the management of whatever water is recovered for environmental purposes. A mitigation strategy has three elements:
 - i. Works and measures – while a range of these were discussed they were neither fully aligned to particular strategies nor linked to expected improved ecological outcomes. Any of the Basin Plan options that are currently being considered will need a comprehensive set of supporting works and measures. Work to consider such opportunities is ongoing, however, the limited information provided was insufficient to fully canvas the breadth and impact of works and measures.
 - ii. Research - there is no clearly defined research program to underpin the efficient and more effective use of environmental water into the future. Active management of environmental water is an emerging field and ongoing research is fundamental to ensuring maximum environmental returns from the purchase of water entitlements.

This document was prepared by the Forum in its closing session with post-session editing by Bill Young in dialogue with Don Blackmore and Gary Jones. Document master and version history are held by Bill Young, CSIRO.