Jointly submitted October 8, 2018 by Quentin Grafton, Sarah Wheeler, John Williams, Matthew Colloff, Jeff Connor, Lin Crase, Darla Hatton MacDonald, Richard Kingsford and John Quiggin.

Submission to the Productivity Commission in response to its draft report 'Murray-Darling Basin Plan: Five-year assessment'.

A. Overview of the Draft Report

We thank the Productivity Commission (PC) for providing, in its draft report, a detailed assessment of the effectiveness of the implementation of the Basin plan for the five-year period ending 31 December 2018.

Given the Draft Report's Recommendation 3.1 (p. 84) in relation to the possible extent of water 'over-recovery', we highlight the opposite concern. Namely, there is inadequate (or no) recognition in the Draft Report regarding the following risks to delivery of the Basin Plan: (i) the impact of climate change; (ii) the adequacy of current Sustainable Diversion Limits (SDLs) and future environmental needs; (iii) assessment of past damage to riparian environments; and (iv) the magnitude of the reduction in recoverable return flows. These risks, among other factors identified in the Draft Report, would lead to water 'under-recovery'.

In relation to the terms of reference of the Inquiry "…to enable an assessment of progress in meeting the Plan's objectives and outcomes…", we further observe there is inadequate assessment of the current poor state of many of the Murray-Darling Basin's environmental assets, including its Ramsar sites. We believe this has led to an inadequate estimation of the environmental needs for environmental water.

With respect to the Inquiry's terms of reference to "…have regard to reviews and audits that have recently been completed or are ongoing,…" we urge the PC to review the submissions and expert testimony (where relevant) to the Murray-Darling Basin Royal Commission. In particular, we highlight submissions (and testimony where relevant) by: (i) David Bell; (ii) Brain Chatterton; (iii) Matthew Colloff; (iv) Peter Cosier; (v) Anita Foerster and Alex Gardner; (vi) Quentin Grafton and John Williams; (vii) Nick Harvey; (viii) Cameron Holley et al.; (ix) Richard Kingsford; (x) Will Mooney; (xi) David Morris; (xii) David Papps; (xiii) David Paton; (xiv) Grant Rigney; (xv) Maryanne Slattery; (xvi) Alistair Watson; and (xvii) Sarah Wheeler et al.

We highlight below some of the findings and/or recommendations in the Draft Report with which we concur:

1. There are major shortcomings in the current institutional and governance arrangements and these pose a significant risk to successful implementation (p. 300).
2. There are major challenges and risks to implementing the measures to adjust Sustainable Diversion Limits by 2024 (p. 2).
3. The MDBA lacks true independence to report on progress and evaluate the impacts and outcomes of the Plan (p. 299). Thus, it should be separated into two institutions to separate the functions and responsibilities of delivery and implementation from regulatory and auditory responsibilities (p. 305).
4. The need to 'do better' in terms of compliance (p. 49, chapter 12). We also highlight the long-standing compliance failures identified in seven reviews in 2017 and 2018 (p. 251).
5. No coherent water recovery strategy that aligns water recovery with progress on easing constraints, ensures that recovered water will contribute to achieving the enhanced environmental outcomes in the southern Basin, and demonstrates how socioeconomic impacts will be mitigated (p. 149).

6. There is no evidence the Department of Agriculture and Water Resources undertook systematic assessments of return flows in its water-use efficiency programs (p. 89).
7. The Department of Agriculture and Water Resources does not have a systematic and transparent process to demonstrate that water recovered has environmental value (p. 86).
8. The Department of Agriculture and Water Resources must establish a review process to determine if supply projects offer value for money prior to funding (p. 25).
9. Recovering water through infrastructure modernisation has substantially increased the budgetary cost of water recovery. On average, infrastructure modernisation has cost taxpayers about twice as much (per ML) as purchasing the same water (p. 91).
10. The Basin Plan must be integrated into State water resource management frameworks and in joint arrangements for shared water resources.
11. Lack of transparency and accountability in terms of institutional and governance arrangements (p. 47 and p. 300) and ineffective processes for intergovernmental collaboration (p. 285). The absence of transparency has engendered low confidence and trust in Governments (p. 296).
12. The MDBA is open to criticism that it does not have a genuine commitment to peer review, and allegations that conflicted or favourable reviewers may be downplaying any technical deficiencies (p. 297).
13. There is a degree of dissatisfaction and mistrust in parts of the community (in relation to supply projects), including Traditional Owners, arising from a lack of transparency and broad consultation (p. 10).
14. Progress on implementing efficiency measures provides little confidence that the enhanced environmental outcomes of the Basin Plan will be achievable by 2024 (p. 10).
15. There is still about $4.9 billion in Australian Government funding left for implementing the Plan. Most of this is allocated to 'resetting the balance' through supply and efficiency projects. If major shortcomings in current arrangements are not addressed, projects are likely to fail or be implemented poorly (p. 24).

B. Key Recommendations for the Final Report

The large number of risks identified in the Draft Report will hinder the effective implementation of the Basin Plan (including key objects of the *Water Act 2007*). Thus, in response to these risks, we exhort the PC to adopt five key recommendations, given below, in its Final Report.

Support for these five recommendations are provided, in our view, in the Draft Report and are consistent with supporting evidence provided in Colloff, Williams and Grafton (Submission 12) and Wheeler et al. (Submission 40).

1. **Recommendation One: The Australian Government undertake an independent and comprehensive water audit of the MDB (since 2007) using existing remote-sensing data, and other relevant data, to assess the impacts of water recovery and the Basin Plan on relevant inflows and outflows (including return flows).**
   Notwithstanding the recognition of return flows in the Draft Report (see pp. 87-89), we do not see a proper appreciation of the magnitude of the reduction in return flows associated with on and off-farm subsidies and grants for infrastructure to increase irrigation efficiency. We are concerned that despite the availability of remote-sensing data that can be used to estimate actual

evapotranspiration, and when combined with estimated inflows and measured diversions, can be used to calculate outflows (including return flows), no such water audit has been undertaken by the Australian Government. Under reasonable and evidence-based (using published academic literature on the effects of increased irrigation efficiency on return flows) scenarios, reductions in recoverable return flows could exceed the volume in excess of the Sustainable Diversion Limit Adjustment mechanism (605 GL/year). As highlighted in Colloff, Williams and Grafton (Submission 12), and in the recently published work by Grafton, R.Q. et al. 2018 (The paradox of irrigation efficiency, Science, Vol 361, Issue 6404, pp. 748-50), primary data collection and a regular comprehensive water audit is an absolute necessity. This is necessary to: (i) know what are the effects of water recovery; (ii) to manage adaptively water releases for irrigation and for the environment; and (iii) to ensure the key objects of the *Water Act 2007* are placed at unnecessary risk.

2. **Recommendation Two: No further expenditures by Basin Governments on water irrigation infrastructure until there is a comprehensive and independent water audit at a Basin scale in relation to the effects of previously funded projects.**
   Points 9, 11, 12, 13, 14 and 15 in our Overview of the Draft Report provide (in our view) strong support for our recommendation that there should not be any further expenditures by Basin Governments on water irrigation infrastructure until there is a comprehensive and independent water audit, based on primary data, of inflows and outflows. This is not just an issue in terms of measuring effects, and governance failures highlighted in the Draft Report, but also about the very much larger cost associated with water recovery through water infrastructure compared to the direct purchase of water entitlements from willing sellers.

3. **Recommendation Three: Comprehensive and independent cost-benefit analyses be undertaken to assess past water infrastructure expenditures from 2012 onwards, and from this point forward on all planned water infrastructure expenditures.**
   There is a critical need for a full, ex-post, cost-benefit analysis of water infrastructure projects previously funded by the Australian Government in relation to water recovery and the Basin Plan. A full cost-benefit analysis must be conducted on all proposed supply infrastructure projects. Indeed, it is unclear whether external costs have been assessed, or even allowed for, in current and planned infrastructure projects.

4. **Recommendation Four: Establish an independent statutory authority that will provide both regulatory oversight and audit of the progress and outcomes of the Basin Plan. This to-be-established authority must have the capacity to expertly review, on an on-going basis, the effects of the Basin Plan and water recovery on riverine hydrology and ecology and socioeconomic impacts.**
   While partitioning of the MDBA into two (point 3 on previous page) is an improvement to the status quo, we do not believe it is sufficient to deliver on the key objects of the *Water Act 2007*. Instead, we recommend the establishment, separate to the MDBA, of an independent statutory authority that would have the expertise and capacity to regulate, review, research and report to the Australian Parliament on key aspects of the both the Basin Plan and water recovery.

5. **Recommendation Five: Establish an independent panel (members should neither be public servants nor government contractors) of socio-economic, ecological and hydrological experts to provide peer review and independent and transparent expert advice to the MDBA and Basin governments.**
   As highlighted by Wheeler et al. (submission 40), and in the Draft Report (see point 12 in the Overview), there are serious deficiencies and weaknesses in socio-economic reports provided to the MDBA by consultants and in reports undertaken by the MDBA itself. The deficiencies in these reports were not identified, at least in public or transparent way, by the MDBA's Advisory Committee on Social, Economic and Environmental Sciences (ACSEES) that was established under Section 203 of the *Water Act (2007)*. In terms of economic analysis, we highlight that the Draft Report (e.g. p. 92 and in the Powerpoint presentations given on the draft report) appears to accept at face value, with no critical discourse, the widely claimed negative impact of water recovery on communities. Yet the PC draft report provides no evidence published in the peer-reviewed academic literature of the negative impacts on rural communities from water recovery as compared to other rural structural adjustment factors (e.g. commodity price changes, climate variability etc). Indeed, in our view, the Draft Report ignores or overlooks the relevant peer-reviewed evidence on this issue (cited in Submission 40). Thus, we strongly recommend that an independent panel (members should neither be public servants nor government contractors) of socio-economic, ecological and hydrological experts be established to provide transparent peer review and independent expert advice to the MDBA and Basin governments. The tasks of the panel would include the evaluation and assessment of the methods, assumptions, results and the evidence in the support of findings in relation to commissioned or internal reports for the MDBA, and all relevant agencies in relation to the delivery of the Basin Plan and water recovery.