

## **Response to the National Water Reform-Draft report<sup>1,2</sup>**

Dr John Cooke

*The Inquiry should have a particular emphasis on the progress of all Australian governments in achieving the objectives, outcomes and timelines anticipated under the Intergovernmental Agreement on a National Water Initiative (NWI)<sup>i</sup>.*

### **Focus of this Submission**

1. This Submission focuses on the statement that *Water reform has delivered significant benefits irrigators*. The Draft Report does not provide an adequate or objective analysis, nor an independent assessment of the veracity of the Statement.
2. This Submission will focus on four matters of importance. These are that;
  - a. the freeing up of water trade under NWI was just one component of irrigation reform during the period since NWI was agreed,
  - b. the balance between benefits and costs, and how benefits and costs are shared, has not been adequately evaluated,
  - c. the residual impacts of stranded irrigation assets have not been addressed, and
  - d. the Final Report should focus on how the NWI will address future needs of the irrigation industry, and in particular to take account of the changed circumstances since the commencement of the NWI.
3. The strategy outlined in the COAG (1994)<sup>ii</sup>, and the further refinement under NWI (2004)<sup>iii</sup> provided a sound and sensible approach to the management of irrigation water. A lot has happened on the ground since these two strategic directions were agreed.
4. This Submission identifies challenges facing the Irrigation Industry, and makes recommendations on how these challenges should be approached in the future.

### **Freeing up water trade should not be seen in isolation**

5. The freeing up of water trade following NWI, coincided with other contributing factors. For example, the:
  - a. reduction in the real cost of key components of irrigation infrastructure such as 'plastic' pipes and fittings,
  - b. expansion of the electricity network to provide cheaper and reliable energy,
  - c. changes to taxation policy that allows Taxation incentives to be captured by non-farm based investors,
  - d. increased capacity and widening of capability of mechanisation in the horticultural industry, and
  - e. changes to the relative prices received for horticulture crops, such as almonds, to that received by dairy products, has provided a substantial financial incentive to drive water trade.

---

<sup>1</sup> This Submission is made in response to the National Water Reform-Draft report (the Draft Report). The term Final Report is used in respect to Recommendations contained in this Submission.

<sup>2</sup> References designated with an i are included Endnotes.

6. The rapid increase in the area planted to horticultural crops in the Southern Connected Basin downstream of Swan Hill provides an on-ground example of the factors driving rapid irrigation development now approaching 40 000 ha, of which 22000 ha<sup>iv</sup> is planted to Almonds. This rapid increase was possible because of the existing and local sources of;
  - a. civil works such as roads, rail and power supply,
  - b. social and economic services that were readily expanded to service the rapid upgrade of existing businesses that were skilled in the provision of state-of-the-art irrigation infrastructure and knowledge on efficient water management,
  - c. extensive and in-depth knowledge on irrigation crops, at the farm level and the off-farm level,
  - d. the proximity to the Murray River of large (up to 2000 ha) freehold allotments suited to horticulture. (These large allotments were created by the acquisition of smaller allotments under the marginal lands adjustments in the 1950's),
  - e. expertise and capacity to process, pack and market horticultural products to cities within Australia and overseas, and
  - f. the coordination across regulatory agencies to provide necessary approvals in a planned and timely manner.
  
7. The freeing-up of water trade following NWI provided the opportunity for water to be traded from multiple small non-contiguous allotments, in irrigation districts, to large contiguous freehold allotments previously utilised for cropping and grazing. A 200+ fold increase in allotment size was possible. This adjustment should be considered as a one-off adjustment that may not be repeated.
  
8. The NWI reforms should be seen in the context that this one-off adjustment coincided with opportunities created by the NWI, but not wholly attributable to NWI. Prior to the NWI, the restrictions on water trade from irrigation districts, had created a backlog of potential adjustment. This adjustment has now been largely addressed. Factors, such as the physical availability of water and its reliability has set a limit on the amount of water that is likely to be available for non-interruptable crops in the next drought.
  

- 9. The benefits to the Australian economy, local communities and individual irrigators have not been sufficiently evaluated to form an opinion that *Water reform has delivered significant benefits irrigators*, nor is this a sound statement to guide the future investment under the NWI. The Final Report should commit to unpack the relative contribution of all factors that have contributed to the reform in the irrigation since NWI.

### **Estimating the benefits and costs of irrigation infrastructure investment**

10. The Draft Report recognises that the delivery of new irrigation infrastructure should be economically viable and sustainable. It highlights that governments should not provide grant funding for infrastructure that is for private benefit of irrigators. It provides some examples where irrigation reform has been attempted since the NWI was agreed. But the Draft Report has not undertaken a comprehensive assessment of the Benefits and Costs of these projects. The Draft Report recognises that such an assessment is possible and puts forward a potential model for such a review.

11. The development of new irrigation areas, the refurbishment of existing irrigation areas and on-farm adjustment to irrigation infrastructure and management, are relatively straight forward from an engineering and water management perspective. The fundamental physical factors are well understood and can be readily evaluated through a benefit cost approach.
  12. The estimation of social impacts, the management of redundant infrastructure and the social impacts at the farm and community level, are less straight forward, but are matters that have a substantial influence on the overall benefits and costs of reform, and how the benefits and costs should be distributed.
  13. The need for a consistent, logical and robust method is recognised in the Draft Report (page 241) but this does not appear to have been brought forward as a Key Point. This is a substantial short coming of the Draft Report and the need for structured, consistent and comprehensive evaluation method of benefits and costs should be a key point in the Final Report.
14. The Final Report should recommend a strengthening of the need for a reliable and consistent approach to the evaluation of Benefits and Costs, as a first step. The overall project should first demonstrate a positive Benefit to Cost ratio. The balance between how the benefits and costs are distributed is the second necessary step, but contingent on the first step. Social and civil costs are more complex than physical costs of irrigation infrastructure. The distribution of the social benefits and costs should be explicitly evaluated. They should be treated separately but in parallel to the direct financial benefits and costs of irrigation.

### **The fate of Stranded Irrigation Assets seems to have been ignored**

15. The trade of water from the irrigation districts into private diversion areas left behind Stranded Irrigation Assets and irrigation allotments that are too small to support contemporary horticulture industries. The economic reality of economies of scale and the need to cluster processing and packaging of irrigation produce means that the highest performing industries will continue to pull water from areas of lower value crops, especially those grown on small holdings. Stranding of irrigation assets is an unavoidable consequence.
16. The Final Report should address how Stranded Irrigation Assets will be addressed in the future. Two references, Roper, Sayers and Smith (2006)<sup>v</sup> and Bigger (2010)<sup>vi</sup> are relevant, but are not referenced in the Draft Report. These two studies were conducted at different times and took different approaches. They came to different conclusions. Roper et al. (2006) was undertaken soon after the NWI and evaluated the risks of stranding of irrigation assets assuming what turned out to be very low levels of water trading out of irrigation districts. Experience since this study indicates that irrigation development outside the established irrigation districts was much higher than assumed for the types of reasons identified in Section 6 (above). The later paper by Bigger (2010) had the advantage of the experience of trade to that date. It recognized that Stranded Irrigation Assets were an increasing issue. Bigger (2010) provided an analysis of how different pricing mechanisms by irrigation retailers would influence the market.

17. The Final Report should include a section and recommendations addressing the Stranded Irrigation Assets. It should give serious consideration to the two reports referenced above. The argument put forward by Cooke (2016)<sup>vii</sup> is that the fate of Stranded Irrigation Assets should be addressed through formal reconfiguration under a regulatory framework. It is important that the impacts on individuals and communities are recognized and addressed.

18. The fate of Stranded Irrigation Assets now and into the future should be addressed in the Final Report. Consideration should be given to directing future Government expenditure to approach the management of Stranded Irrigation through formal reconfiguration mechanisms, rather than to continue to invest in attempting to improve the efficiency of water supply infrastructure, especially in those areas where water is being traded away.

### **Taking a structured approach to water reform in the Irrigation Industry**

19. In a Submission to the Productivity Commission Inquiry into Regulation in Agriculture (Cooke 2016) provides an outline of how the sensible and planned coordination of the relevant legislative and regulatory requirements avoids blockages. Regulation when applied strategically and in a timely fashion and sensibly, leads to the timely development and restructuring of irrigation, that is both sustainable and has minimal environmental impact. Such a process avoids the lost opportunities that may arise through so called *red tape*.

20. That Submission argued that the irrigation industry in the Southern Connected Basin will need to adjust to continuing and substantial changes. This is best approached through having a high-level Strategy aimed at addressing the future needs of the irrigation industry. A strategy would guide how incentives, taxes and government investment would be applied.

21. That Submission argued against the continuation of government investment directed at specific inputs such as upgrading infrastructure either in the supply to the farm or on the farm. Neither is likely to address the fundamental challenges facing the irrigation industries.

22. The irrigation industry in the Southern Connected Basin needs to adjust to continuing and substantial changes resulting from reduced water deliveries due to climate change, increased environmental water allocations and water trading out of irrigation districts. Stranding of irrigation assets can be expected to be a substantial issue for water managers for many years. The best approach is for governments to publicly and explicitly to acknowledge the problem and put in place measures to mitigate the impacts, something governments are notoriously reluctant to do.

23. A comprehensive high-level strategy is needed to guide how pricing, incentives, taxes and government investment should be applied. A failure to address this issue will see the existing problems of stranded assets and the so called Swiss cheese effect to worsen.

24. The Final Report should make strong Recommendations that future public investment in irrigation should be approached under a planning framework, that can balance the likely output of the proposal in the context of the impacts on exiting public assets, the need for public infrastructure in the future, the environment, cultural values and other matters. Adopting a formal planning approach will identify, at an early stage, the impediments if any to development, and how the benefits and costs of all impacts are identified and appropriately shared.

## Challenges the need to be recognised and addressed in the Final Report.

25. The challenges facing irrigation into the future are different to the challenges facing irrigation at the time that the NWI was agreed.
26. The irrigation industry in the Southern Connected Basin, and elsewhere, will need to adjust to major challenges. These challenges relate to;
  - a. the effect that climate change is having on catchment water yields and hence the amount and reliability of the High Reliability Water Share,
  - b. the use of the water market to trade water to support horticulture for which there is no substitute for water as an input,
  - c. the achievement of economies of scale made possible through water trade may continue as there are further potential large holdings available downstream of Swan Hill in the Southern Connected Basin,
  - d. the need to balance the cost to the irrigation industry, that acquisition of around 20 % of High Reliable Water Share for environmental purposes, has had on the reduction of the size of the tradable water pool, against the benefits to the irrigation industry that the acquisition of around 20 % of High Reliable Water Share for environmental purposes, has had on lessening of demand for water in sub 100% allocation years.
  - e. the inability or reluctance to reconfigure the residual multiple small irrigation holdings so that the losses associated with supply of small units of water to these holdings can be freed up.
27. Collectively, these challenges have interrelated causes and potentially inconsistent outcomes especially if treated individually. The matters listed above are neither comprehensive nor static, but their importance should be addressed in the Final Report.
28. The continuation of government investment directed at specific inputs such as upgrading infrastructure either in the supply to the farm or on the farm is unlikely to address the fundamental issues that face the irrigation industries, as listed above.

29. The economic reality of economies of scale and the need to cluster processing and packaging, means that the highest performing industries will continue to pull water from areas of lower value crops, especially those grown on small holdings. It may be wise to direct future Government expenditure to address stranded asset issues and bring about reconfiguration of irrigation areas where irrigation is constrained by small allotments and where irrigation infrastructure that has limited flexibility, rather than to continue to invest in attempting to improve the efficiency of water supply infrastructure.

## Summary and Recommendations

30. The finding that Water reform has delivered significant benefits irrigators is not a sound basis on which to progress the NWI. Many irrigators and some communities, especially in older irrigation districts, have not reaped many benefits from adjustments under the NWI. The NWI is just one of the factors contributing to the significant benefits that irrigators have derived. The Final Report should recommend that the benefits and costs of irrigation reform since NWI must be properly analysed to identify the overall ratio of benefits and costs, and how these benefits and costs have been distributed.

31. A necessary first step in developing a new strategy or modifying the existing NWI is to undertake a comprehensive Benefit Cost Analysis of investments in irrigation reform projects undertaken since the NWI.
32. The economic reality of economies of scale and the need to cluster processing and packaging, means that the highest performing industries will continue to pull water from areas of lower value crops, especially those grown on small holdings. The stranding of assets is an unavoidable consequence under existing pricing and regulatory frameworks. The management of Stranded Irrigation Assets should be addressed in the Final Report.
33. The NWI into the future must provide for a balanced outcome across Irrigation, Urban and Environmental objectives;
  - a. Governments should focus its investments to achieve outcomes rather than assuming the investments on the input side of the equation will filter down to the needs of Irrigation, Urban or the Environment,
  - b. Governments should be encouraged to direct expenditure to bring about reconfiguration of irrigation areas where irrigation is constrained by small allotments, and where irrigation infrastructure has limited flexibility, rather than to continue to invest in attempting to improve the efficiency of water supply infrastructure, in areas from which water is being traded, and
  - c. Governments should be encouraged to properly address the issue of Stranded Irrigation Assets.
34. The irrigation industry in the Southern Connected Basin and elsewhere will need to adjust to major and continuing challenges as outlined in this Submission. A high-level Strategy aimed at addressing the future needs of the irrigation industry is needed urgently. Such a strategy would guide how incentives, taxes and government investment would be applied, and the balance between private and public benefits should be recognized.

---

<sup>i</sup> See the Draft Report for the source of this Reference.

<sup>ii</sup> See the Draft Report for the source of this Reference.

<sup>iii</sup> See the Draft Report for the source of this Reference.

<sup>iv</sup> Almond Insights 2017-17 <http://growing.australionalmonds.com.au/wp-content/uploads/sites/17/2016/04/Almond-Insights-2016-17-LR-WEB.pdf>

<sup>v</sup> Roper, H., Sayers, C. and Smith, A. 2006, Stranded Irrigation Assets, Productivity Commission Staff Working Paper, Melbourne, June.

<sup>vi</sup> Bigger, D (2010) Exit fees and termination fees revisited: funding irrigation infrastructure in a manner compatible with water trade. The Australian Journal of Agricultural and Resource Economics, 54, pp. 421–435.

<sup>vii</sup> Cooke J W (2016) [http://www.pc.gov.au/\\_\\_data/assets/pdf\\_file/0005/195872/sub029-agriculture.pdf](http://www.pc.gov.au/__data/assets/pdf_file/0005/195872/sub029-agriculture.pdf)