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Submission to the Productivity Commission Regarding the Draft Report on Rural Water and the Environment: the Role of Market Mechanisms

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If you have any questions or comments in relation to this submission please contact Dr Arlene Buchan, Healthy Rivers Campaigner with the Australian Conservation Foundation (03) 9345 1124; mobile 0407 883 907

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1 The Australian Conservation Foundation

The Australian Conservation Foundation ("ACF") is committed to inspiring people to achieve a healthy environment for all Australians. For 40 years it has been a strong voice for the environment, promoting solutions through research, consultation, education and partnerships. It works with the community, business and government to protect, restore and sustain our environment.

2 Acknowledgments

This report is largely informed by a multi-stakeholder workshop convened by the ACF in May 2006. The workshop brought together leading economists, irrigators, graziers, agricultural sector representatives, scientists, environmentalists, local, state and federal government department and agency representatives, with a view to: exploring market mechanisms that could recover water for the environment and address the legacy of water overallocation and overuse; what these market mechanisms might mean for different sector interests and communities, including the pros and cons for each; and consider contextual requirements to ensure that market mechanisms make a positive contribution to rural water use and the environment. We all learned a lot from each other. It is further informed by recent literature, in particular published work of ABARE, CSIRO, the Productivity Commission and other economists and by discussions with learned, insightful and time-generous people over the phone, over a coffee and over a nice glass of red. You know who you are – thank you all!

3 Executive Summary

The market mechanisms or market based instruments (MBIs) that could be used for water recovery for the environment are many and varied. Several existing market mechanisms have been used successfully in natural resource management and a suite of novel mechanisms are at varying degrees of development. The most commonly considered market mechanisms relate to the outright purchase of rights in terms of entitlements (permanent water) or annual allocations (temporary water) but opportunities exist to develop markets in partial rights, including options, derivatives, and licence attenuation, that could provide water for the environment when it needs it most, whilst leaving legal title with the irrigation industry and continuing to provide irrigation water.

The various MBIs have different advantages and disadvantages for the environment, irrigators and other stakeholders. The best outcomes may result from using a mixture of different market and non-market mechanisms for water recovery and management, put together as a package which reflects local environmental and socio-economic circumstances.

As well as a range of MBIs, there are a range of administrative methods that can be used to implement them which themselves affect some of the pros and cons for different interests. For example, voluntary purchase of permanent entitlements can be

put into effect in a number of ways: by the environmental manager standing in the open market; by public offer by the environmental manager to buy a particular type of water product at a particular price; or by competitive tender or auction schemes where entitlement holders compete with each other to supply water to the environment. Environmental managers competing in an open market to buy water entitlements may have quite a different effect on water prices from entitlement holders competing with each other to sell water to the environment. As a result, careful consideration should be given to the choice of administrative method as well as the choice of market based instruments used for water recovery.

Also, some non-market factors have a significant effect on the capacity to achieve environmental outcomes with a particular environmental water allocation. For example, the ability to carry-over environmental water allocations in dams and let it accumulate until it reaches ecologically useful volumes of water must be considered as part of any environmental water recovery and management package.

Finally, the institutional context and governance arrangements within which environmental managers operate will affect their ability to develop and implement market based instruments. Skills, culture, resources and the model of environmental management are important influences in the capacity to deliver environmental goals using market and non-market mechanisms. Accountability for environmental water use will be a key to ongoing stakeholder support.

4 Market Based Instruments (MBIs) for water recovery

The combination of different MBIs and administrative processes for their implementation could results in a vast array of options for environmental managers. The following is a brief description of the advantages and disadvantages of some of these combinations of MBIs and administrative processes that were identified by workshop participants as having the widest appeal.

5 Purchase on an open market - entitlements

In this case, the environmental manager stands in the market like any other buyer.

Advantages

- Straightforward given that entitlements are existing products already on the market
- Transparent process
- Provides reliable fixed water demands or base supply
- Provides water in for the environment in perpetuity and is therefore consistent with requirements under the National Water Initiative (NWI)
- The environmental manager can target water products to meet environmental needs

Disadvantages

- Not well suited to highly variable environmental needs, in particular flooding of wetlands, floodplains and billabongs, which requires large volumes of water on a highly variable basis

- Currently constrained by the size and liquidity of the market for entitlements
- Expensive up-front
- Could result in price increases by increasing competition in the market place
- Could leave stranded assets that require further action as the entitlement leaves the irrigation sector

6 Purchase on an open market – annual allocations

In this case again, the environmental manager stands in the market like any other buyer.

Advantages

- Flexible and responsive to highly variable, environmental need, such as topping up or extending natural floods and therefore well suited to adaptive management
- Lower up-front costs
- Title does not change hands so no concern about stranded assets

Disadvantages

- In some systems at least, the environment needs water earlier in the season that temporary water becomes available on the market for sale
- The water is not available in perpetuity and hence does not strictly fulfill the NWI criteria for environmental water
- Purchasing large volumes would increase water prices
- Costs are ongoing

7 Voluntary buy-back schemes – entitlement or allocation

The environmental manager makes a public offer to buy a particular type of water product at a particular price for a specified time period. Comments under 5 and 6 above are also relevant in terms of matching water to environmental needs and permanent water reallocation, but the different administrative process for purchasing the entitlements or allocations introduces different advantages and disadvantages.

Advantages

- Good track record in other areas of NRM management
- Flexible and allows precision targeting of water products that would meet environmental needs
- Could also be targeted to particular geographical areas or water supply systems to achieve structural adjustment or broader natural resource management objectives
- It involves an open and transparent process
- Avoids price increases as there is no active competition in the marketplace

Disadvantages

- Secondary mechanisms may be required if stranded assets result from the buy-back of entitlements
- The definition of the water products required may limit participation by willing sellers

8 Tender or auction schemes (entitlement or allocation)

Competitive tendering (open or closed) determines who supplies water to the environment and at what price. Comments under 5, 6 and 7 above are also relevant in terms of matching water to environmental needs, but the different administrative process for purchasing the entitlements or allocations introduces different advantages and disadvantages.

Advantages

- Very cost-effective, at least in the short-term, as entitlement holders are competing to provide services to the environment
- Can target water that meets environmental needs
- Can be used to leverage investment in improved efficiency where the water savings could accrue to the environment
- Stimulates irrigators to consider their capabilities and capacity to provide water for the environment

Disadvantages

- Lacks transparency, particularly closed tendering, as the price is not disclosed
- The process can be cumbersome and therefore too slow for acquiring temporary water in response to environmental needs
- Stranded assets may result from permanent reallocation of entitlements

9 Compulsory buy-back schemes

This involves providing compensation for non-voluntary acquisition of an entitlement or a portion of an entitlement.

Advantages

- Useful if everyone in a particular area is required to surrender all of part of their water
- Can secure multiple benefits at specific sites, for example addressing salinity or other water quality or land management objectives as well as providing water to address overallocation or overuse
- Free from capital gains tax and other financial incentives can be provided

Disadvantages

- Deeply unpopular amongst most irrigators and therefore politically difficult
- Can be expensive in the short-term as it involves above market costs due to structural adjustment

10 Licence attenuation

The environmental manager buys a water entitlement, introduces caveats or conditions onto the title whereby water flows to the environment when particular allocation or resource condition triggers are met, and then sells the entitlement back to irrigators. Triggers can be set around annual allocation, resource condition, (for example, a wetland must be watered at least every one in five years) or relate to rainfall or dam levels.

Advantages

- Can design the triggers so that they provide water that best meets the variable needs of the environment. For example, a trigger of 70% allocation would mean that any water above the trigger could be used to top up natural floods or extend flood recession during a wet year
- Title stays with irrigator and so it avoids concerns around stranded assets
- Provides water in perpetuity and is therefore NWI compliant
- Few ongoing costs

Disadvantages

- New water product requiring more R & D, and some set up time
- It could be expensive initially due to the requirement for legal covenants
- Market acceptability? This probably depends on the trigger and ability of irrigators to factor the change into their risk management strategies

11 Options contracts

Irrigators enter a long-term contract with the environmental manager to provide a pre-specified volume of water when the option is triggered. The trigger would generally be an allocation announcement, resource condition trigger (for example, a wetland must be watered at least every one in five years) or relate to rainfall or dam level.

Advantages

- Can match triggers to highly variable environmental needs
- Can provide a lot of cheap water in wet years (as per 10 above)
- Flexible as the environmental manager is not *obliged* to take the water when the trigger is met if there is no environmental need at the time
- The title stays with the irrigator so avoids concerns about stranded assets

Disadvantages

- Requires ongoing funding
- Could increase pricing / scarcity of water on the temporary market
- Questions around permanence means it may not be strictly NWI compliant

12 Water conservancy trusts

A public or private trust purchases or accepts donations of water entitlements for use by the environment.

Advantages

- By-passes bureaucracy and any ideological opposition to governments buying water
- Provides capacity to use short-term leased water for environmental management

Disadvantages

- Poor coordination if governments / their agencies withhold involvement / endorsement
- Could risk substituting rather than augmenting government involvement and induce cost shifting

13 Taxations incentives / donations

Irrigators donate an unused portion of water allocation for environmental purposes in return for a tax-rebate or other incentive.

Advantages

- Financial / tax incentives for donors
- Strong irrigator support

Disadvantages

- Uncertainty for the environment
- Could reduce other water users' supply reliability if it could have been incorporated into allocations

14 Other issues

Other issues that are important in securing the most efficient, best all-round outcomes for rural water use and the environment include:

Carry-over

The ability to carry-over environmental water allocations in storage, and accumulate the water to ecologically significant volumes, can significantly reduce the entitlement holdings needed to meet environmental demand. Carry-over should therefore be a primary consideration in acquiring and managing water to meet the needs of the environment. For example, preliminary findings by Colllins & Scoccimarro (2006) indicate:

- Compared to a situation without carry-over, the ability to carry-over water up to a limit of 4.5-times the volume of entitlement held[1], reduced by 70%, the amount of water needed to meet environmental demands 80% of the time.

Carry-over provisions for environmental water may impact on the security of irrigation water and so trade-offs are required.

Trading environmental water on the temporary market

Enabling the environmental manager to sell environmental allocations when it is not required to meet environmental objectives and use the money to buy water whenever it would help achieve environmental outcomes, could make a substantial difference towards meeting highly variable water needs, in particular topping up natural floods for wetlands, floodplains and billabongs during wet years. This option should, therefore, be available to environmental managers. However, the situation where environmental managers sell water that could be used to secure environmental outcomes in order to cover other costs should be avoided.

Seasonal inversion

Lack of environmental water due to the legacy of overallocation and overuse is only part of the problem faced by many of Australia's rivers. Another problem relates to seasonal inversion of high and low flows as a result of managing rivers primarily for irrigation interests. The opportunities for using MBIs to address seasonal inversion / channel capacity problems are as important as using MBIs for addressing overextraction and they should be investigated as part of a broader suite of planning, regulatory and market based tools. The MBIs that are best suited to addressing seasonal inversion are likely to be somewhat different from those best suited to addressing overallocation and overuse.

Institutional and social context

The institutional and social context should be considered in developing and implementing market mechanisms for addressing water overallocation and overuse. Proper implementation of the NWI in every jurisdiction is important in setting the framework within which market mechanisms can best contribute towards environmental water acquisition and management.

Also, there is a need to build levels of comfort in the community regarding process and the timeframe for change, and to communicate clearly about environmental objectives. This could be enhanced by pilot projects using MBIs for water recovery and by holding forums or other community engagement tools to demonstrate the beneficial use of environmental water.

15 Conclusion

All MBIs have advantages and disadvantages for the different interest groups and vary in relation to costs, complexity, flexibility, uncertainty, 3rd party impacts and capacity to

[1] This is the same level of carry-over the existing Barmah-Millewa environmental water allocation benefits from.

provide water of the characteristics that meet the highly variable needs of the environment. As a result, it is most likely that a *portfolio* of water products is needed whose characteristics collectively provide the most effective and efficient way to meet the needs of the environment within a smart, regulatory framework that can deal with problems that the market cannot.

All rivers are different, environmentally and socio-economically, and the portfolio of water products necessary to meet the needs of the environment will differ from river to river. Transaction arrangements need to be simplified and streamlined to reduce costs and improve the ease acquiring environmental water using MBIs. In general, however, a portfolio of water products is likely to comprise:

- Some water entitlements that can be traded;
- Capacity to top-up especially for wetland and floodplain flooding by purchasing allocations and securing water from options contracts / attenuated licences;
- Optimise carry-over provisions; and
- Ensure the portfolio is set within an adaptive management framework to deal with knowledge gaps and the uncertainty involved.