

# MURRAY-DARLING BASIN AUTHORITY SUBMISSION TO THE PRODUCTIVITY COMMISSION STUDY INTO MECHANISMS TO PURCHASE WATER ENTITLEMENTS

SEPTEMBER 2009

## INTRODUCTION

1. The Murray-Darling Basin Authority (MDBA) is established under the Water Act 2007. The Act confers on the MDBA a broad range of responsibilities including continuing work previously initiated by the Murray-Darling Basin Ministerial Council and the Murray-Darling Basin Commission (MDBC).
2. One major initiative being implemented, through the MDBA, within the southern connected Murray Darling Basin is The Living Murray (TLM). TLM aims to maintain or improve the health of six icon sites along the Murray River, and includes the recovery of a significant volume of water entitlement to enable ongoing environmental watering at these sites.
3. This submission seeks to provide a summary of the various reports the MDBA and MDBC have prepared which are relevant to this study, as well as offering some information on those water recovery measures being implemented for TLM which make use of market mechanisms.

## WATER RECOVERY IN THE LIVING MURRAY

4. The targets and processes for the recovery of water in TLM are set out in the *Intergovernmental Agreement On Addressing Water Overallocation and Achieving Environmental Objectives in the Murray Darling Basin* (agreed 25 June 2004) (IGA 2004), the *Supplementary Intergovernmental Agreement On Addressing Water Overallocation and Achieving Environmental Objectives in the Murray Darling Basin* (agreed 14 July 2006) (Supplementary IGA 2006), and the *Living Murray Business Plan* (approved 25 May 2007).
5. The IGA 2004 set an indicative water recovery target of 500GL as well as making available \$500m of investment to enable the recovery of this water. The available investment was

increased to \$700m in 2006. The recovery of the water is to be achieved within 5 years of signing the IGA 2004.

6. Each project, or package of projects, which recovers water for the Living Murray is known as a water recovery measure. The volume of water recovered by each water recovery measure is calculated as a Long-Term Cap Equivalent (LTCE) volume. The long-term Cap equivalent is a type of average. It takes into account the different characteristics of water entitlements in New South Wales, Victoria and South Australia, and their reliability. Agreed Cap factors are used to calculate the LTCE volume for most standard irrigation entitlements, however hydrological modeling is required to calculate the LTCE volume of water recovery measures recovering other types of water.
7. Using the LTCE volume of water recovered by each water recovery measure, along with the unit cost (\$/ML LTCE), allows the equitable comparison of different water recovery measures. While the primary criteria used to assess a Living Murray water recovery measure are the cost effectiveness of the measure and the suitability of the recovered water, the IGA (2004) also notes *'other matters which may be taken into account in assessing proposals ... include social and economic impacts, salinity and water quality outcomes, additional environmental benefits and third-party impacts'*.
8. The IGA 2004 allowed for the recovery of water using; on and off farm infrastructure, market based measures, improvements in urban water use and regulatory measures. Initially the focus for most of the water recovery measures being considered was around using infrastructure improvements to recover the majority of the water for TLM. However, by 2006 it became apparent that market based measures were going to be necessary to achieve the target.
9. The IGA 2004 specifies the recovery of permanent water entitlements; however this is subsequently expanded in the Supplementary IGA 2006 to include 99 year contracts for use of water. The location of the six icon sites dictate where water can be recovered from, as it needs to be able to be delivered to these sites.

## DEVELOPING NEW WATER RECOVERY MEASURES

10. The MDBA, and previously the MDBC, have undertaken or funded a broad range of studies to assist in achieving the water recovery targets. This includes significant work prior to the signing of the IGA 2004, provision of funding for the development of new water recovery measures, and supporting work to expand the potential projects being considered.

## DEVELOPING THE LIVING MURRAY

11. During 2002 and 2003, the MDBC commissioned a number of studies which supported the decision to proceed with TLM. These examined the socio-economic impacts of a range of scenarios. In undertaking these various assessments recovering water using market mechanisms was considered on some level in most reports.
12. The reports prepared for the MDBC include:
  - a. CSIRO Land & Water, July 2002, *A preliminary assessment of the economic and social implications of environmental flow scenarios for the Murray River System*.
  - b. Environmental & Resource Economics, September 2002, *Non-market Valuation Scoping Study*.
  - c. BDA Group, August 2003, *A market approach to the Living Murray initiative: a discussion paper*.
  - d. Hassall & Associates and The University of Queensland, August 2003, *Stage 1 Volume 1 Scoping Study – Social Impact Assessment of Possible Increased Environmental Flow Allocations to the River Murray System*.
  - e. DPI and the University of Melbourne, October 2003, *The Living Murray: Creating markets for the environment*.
  - f. EBC, November 2003, *Development of a framework for social impact assessment in the Living Murray: Water Recovery in the Murray Irrigation Area of NSW*.
  - g. MDBC, July 2004, *The Living Murray: Scoping of economic issues in the Living Murray, with an emphasis on the irrigation sector*.

## FEASIBILITY ASSESSMENT FUNDING

13. Between 2004 and 2009 the MDBC and the MDBA funded a number of feasibility assessment projects. These projects assessed the feasibility of a broad range of potential water recovery measures. While these projects largely focused on various infrastructure measures, there were several projects which examined market based measures in several forms, and two projects with the Ricegrowers' Association of Australia which examined on-farm infrastructure improvements with water returned using normal market processes.

## DEVELOPMENT OF MARKET BASED MEASURES

14. The MDBC actively undertook work to support the use of market mechanisms to recover water for TLM. This work culminated in the publication of a report titled *Issues and Options in applying market based measures in the Living Murray First Step* (March 2006). Around this time the MDBC had two projects which were based on market based mechanisms approved

by the Murray-Darling Basin Ministerial Council. Hydrological modeling was also undertaken to determine the Long-Term Cap Equivalent volume of water that could be recovered through the use of various options contract arrangements.

## IMPLEMENTATION OF WATER RECOVERY MEASURES

15. A variety of experiences have been gained by both the MDBA and the state agencies in implementing market based measures for TLM.

## WATER RECOVERY MEASURES BEING IMPLEMENTED BY OTHER AGENCIES

16. There are 18 water recovery measures either completed or being implemented for TLM. Of these 13 are being implemented by other state or federal agencies, 9 of which include either direct market purchase, or use of other market mechanisms. These are;
  - a. NSW Package B (Department of Climate Change, Environment and Water) – *this measure includes the targeted purchase of water entitlements to allow a change in operation of small lakes/wetlands complex.*
  - b. NSW Market Purchase Measure – *this measure involves the purchase of water entitlements from willing sellers using both direct approach to the market and an expression of interest type process.*
  - c. Murray Irrigation Limited Supplementary Water Access Licence – *this measure involves the purchase of a single large water entitlement.*
  - d. Tandou Limited Supplementary Water Access Licence - *this measure involves the purchase of a single large water entitlement.*
  - e. Goulburn-Murray Water Recovery Package – *this measure includes the restructure of the Victorian water entitlement system, which resulted in a return of entitlement to the environment for an agreed cost.*
  - f. Lake Mokoan Water Recovery Package – *this measure includes the targeted purchase of entitlements to support the implementation of system infrastructure improvements.*
  - g. Securing Government Held Water For Environmental Use – *this measure involves the purchase of water entitlement from government at market price.*
  - h. Purchase from willing sellers – stage 1 – *this measure involves the purchase of water entitlements from willing sellers by direct approach to the market.*

- i. Securing Government Held Water and Purchase from willing sellers – *this measure involves both the purchase of water entitlements from government at market price, along with the purchase of water entitlements from willing sellers by direct approach to the market.*

## WATER RECOVERY MEASURES BEING IMPLEMENTED BY MDBA

17. The MDBA has completed the implementation of two water recovery measures, and are currently implementing a further three measures, all of which incorporate the use of normal water market processes. Two of these water recovery measures, being implemented with the Ricegrowers Association of Australia, involve the use of normal water market processes to transfer water entitlements to the MDBA in return for funds to undertake works to improve on farm water use efficiency. The other three measures are discussed in greater detail below. A sixth measure was previously proposed and approved, but was subsequently withdrawn, this measure involved the use of water purchases partnered with lease-back agreements.

## PILOT ENVIRONMENTAL WATER PURCHASE and LIVING MURRAY ENVIRONMENTAL WATER PURCHASE

18. In 2007, the MDBC successfully developed and piloted a process to purchase water from willing sellers for market prices. This project, known as the Pilot Environmental Water Purchase, used a non-binding expression of interest process to receive proposals to sell water entitlements. These were considered within a week of receipt and the MDBC elected to either pursue the offers or not.
19. Expressions of interest were evaluated against an independent market analysis which was received each week, and the process was overseen by probity advisors. There were some difficulties in sourcing accurate and current market prices which limited the information available to the market analysts, however sufficient information was sourced to perform a suitable analysis.
20. Expressions of interest were submitted on a standard two page form, which collected the minimum amount of detail required to consider the proposed sale, and was simply drafted.
21. On agreeing to pursue an expression of interest, a due diligence check was undertaken on the proposed entitlement, prior to contracts being executed.
22. In developing the Pilot Environmental Water Purchase consideration was given to other ways to purchase water from willing sellers, however the use of this expression of interest process was considered to offer the least risk to both the buyer and seller, the lowest participation cost to both parties, and was deemed to be a fair and equitable way to participate in the water market.

23. A second, larger, purchase project was developed and is currently being implemented by the MDBA. This uses the same process as the Pilot, with small improvements to the expression of interest forms and to the timelines for the considering proposed sales.
24. The 4% cap on water trade out of some Victorian districts has limited the potential to purchase water in some areas for both measures. The NSW embargo on water sales to the environment has prevented any water being purchased from NSW under the Living Murray Water Purchase.

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## SUSTAINABLE SOILS & FARMS ON-FARM RECONFIGURATION DEMONSTRATION

25. The Sustainable Soils & Farms On-Farm Reconfiguration Demonstration (SSF project) has been proposed and developed by a privately owned company in Victoria. The company are planning to purchase and reconfigure a number of irrigation properties. The planned reconfiguration will reduce the volume of water entitlement required by the company to maintain the productive capacity of the properties.
26. The component of the companies plan that has been brought forward as a Living Murray measure, known as the SSF project, involves the MDBA having a first option to purchase any water entitlements no longer required by the company. Water entitlements will be offered at the current market price, and such sales will be subject to the prevailing water trading rules.

## CONCLUSION

27. It is currently estimated that of the 500 GL of water expected to be recovered for TLM; 30% will be sourced from infrastructure measures, 25% from regulatory measures and 45% from market based measures.
28. While around 45% of the water recovered for TLM will have been sourced using market mechanisms, this will have been achieved almost entirely using the direct purchase of irrigation water entitlements. Other market mechanisms have been considered, but have generally been determined to be less feasible or to have greater risk than direct purchasing.

## REFERENCES

MDBC, 2006, *Issues and options in applying market based measures in the Living Murray First Step*, Canberra, ACT.