

SAVING WATER WE ALREADY HAVE

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SUMMARY:

Harvey Water is the privately owned cooperative Irrigation Water Provider (IWP) in the southwest. Irrigators use their water entitlement to produce fresh food at estimated GVAP \$100 million per year.

Water distribution losses from open channel systems were over 30% at privatisation in 1996. Investment in a range of technologies, including piping, has reduced this to 5% in some areas.

Harvey Water has proposed that for \$175 million investment in piping 39 GL of water could be saved and traded to the IWSS.

The greater part of this saving is dependent on improving the quality of the water in Wellington dam, which is about 3 times as salty as the Murray-Darling system.

A total of about 50 GL of water could be made available by a combination of piping and water quality improvement at relatively low cost.

INTRODUCTION

Harvey Water was privatised in 1996 and is now a fully private cooperative IWP owned by the irrigators it services. Harvey Water has licenses totalling 153 GL to take water from the 7 dams in the Darling Range, which supply the irrigation area from Waroona to Dardanup.

Irrigators use this water to produce fresh food mainly for the WA domestic market. The total estimated Gross Value Added Production is about \$100 million per year comprised of dairy, meat, fruit, vegetable and wine products.

SAVING WATER

The license to take water recognises that about 30% of the water released from the dams does not reach the irrigator because of the inherently inefficient nature of the open channel system. An allocation of 45 GL is made for delivery losses and represents an obvious opportunity for savings.

The Harvey Water strategic plan recognised this issue from the outset and the investment of \$18 million of irrigators' funds in various technologies over the past 8 years has seen these losses reduce to 5% in some areas. In particular the total replacement of the open channel system in Waroona by a piped supply has demonstrated the possibility of saving water relatively cheaply. For a cost of \$4.5 million, 43 km of pipeline were installed which reduced losses from 27% to 5% of releases from the dams. To date Harvey Water has saved 10 GL of water by these methods.

The Act governing the licensing of water recognises that water use efficiencies obtained by the investment of a licensee can be traded to other markets by that licensee.

INVESTMENT PROPOSAL

Harvey Water has proposed that based on the demonstrated savings from piping, extension of this system across the whole of the irrigation area could save a total of 39 GL of water. This includes piping most of the Waroona, Harvey and Collie River irrigation districts, which could be done for an estimated cost of \$175 million.

This proposal is a simple, sensible, quick and relatively cheap way of saving the water resources we already have.

Costs of treating the water saved and moving it to where it might be used, such as the Integrated Water Supply System (IWSS), are extra and yet to be detailed.

WATER SYMPOSIUM 2004 – STATE WATER STRATEGY

Benefits to irrigators include that the system will be gravity driven, including on-farm distribution, meaning negligible future energy costs, it will make it easier for irrigators to employ higher technology on-farm water distribution systems such as trickle and centre pivot sprinklers leading to the ability to make higher value use of land and water producing higher value products.

Benefits to the IWSS include additional water at a low cost compared to most other sources.

SALINITY

The single greatest limitation to accessing the larger part of this water is the salinity of the Wellington dam, which supplies water about 2.5 times the limit of salt acceptable for irrigation or potable purposes. It has been very high for about 40 years. The cause of this salinity is clearing in the catchment and not by any activity for which the irrigators are responsible, although they are the ones bearing the full cost of the problem.

The salinity of the Wellington dam is 2 to 3 times higher than the salinity of the Murray-Darling system, which has received huge amounts of government funding. The saline water has a major effect on the productivity of irrigation farms, the livelihoods of irrigation farmers and on the environment. It is way past time that the biggest surface water storage in the southwest received significant investment to improve the water quality for the benefit of all users.

A proposal to reduce the salinity involves diverting the inflows with the highest salinity into empty coal mining voids. The modelling suggests that this will reduce the salinity by up to 30% while the volume in the dam will not be reduced by as much because of saving of scour water. Again, it is a relatively cheap, quick and easy way of making progress towards the best use of the water resources currently available.

If the salinity of the Wellington dam were improved to the extent that it could be considered as a resource for potable purposes, it would then make economic sense to pipe the improved quality irrigation water to the irrigation area. It would not be sensible to pipe the low quality water. Piping the Collie River irrigation district would yield an estimated 22 GL of saved delivery losses. There is also about 12 GL of unallocated water in the dam, which could then become available, yielding a total of about 34 GL of water from Wellington dam.

Funding for this salinity improvement project is the subject of application and negotiation between the State and Federal governments under the National Action Plan for Salinity and Water Quality. It is estimated that it may cost up to \$30 million to implement the full diversion and salinity improvement plan to obtain about 34 GL of water from the dam. Treatment and transfer costs are additional.