

## **WATER USE EFFICIENCY INQUIRY**

SUBMISSION BY:

HARVEY WATER

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### **BACKGROUND TO HARVEY WATER.**

Harvey Water is a member owned cooperative water supply utility delivering irrigation water to over 700 irrigators in the Harvey Water Irrigation Area (HWIA) centred about 150km south of Perth.

Harvey Water was privatised from government in 1996 and since that time has delivered a strong record and improvement in water delivery services to its members and other customers.

The cooperative's overarching objective is to facilitate and stimulate higher value uses of land and water so that its members can more fully participate in and benefit from the burgeoning markets for food in our neighbouring countries.

The also fits with our operating ethos which is "To use our access to water to promote regional economic development."

## INTRODUCTION:

Although the background notes to this enquiry do not specifically limit it to a particular aspect of water use efficiency, that term is most commonly associated with the process of applying irrigation water to plants to obtain the optimum yield and maximum profit. Efficiency can be broadly defined as the ratio of outputs compared to inputs.

Harvey Water sees water use efficiency in a much broader context which we term "Water ain't Water".

That is, water is differentiated by at least the following:

- The level of aggregation e.g. the ocean or large dams
- The location of the source in relation to its point of use
- The degree of competition for it between users including the environment
- Its accessibility according to laws, regulation and licencing
- Water quality parameters such as salt or other limitations
- The quantity of water sought or available
- The consistency of supply over the short and long terms
- The cost of obtaining or accessing water
- The ability to move water to areas of higher economic return by either or both physical and market mechanisms
- The water delivery system to or on the farm or property
- The technology available to and the skill level of the water user
- The profit available to the water user from the market(s) into which that user is supplying irrigated agricultural outputs.
- Other?

Each of these factors influence the efficiency of use of available water resources to a greater or lesser degree.

## TERMS OF REFERENCE:

1. The adequacy and efficacy of current programs in achieving water use efficiencies.

Harvey Water believes it is reasonable to note that Commonwealth programs on water use efficiency have been almost totally focussed, with good reason, on the highly significant Murray Darling Basin.

There has therefore, in comparison, been negligible Commonwealth funding reaching Western Australian irrigators to the best of our knowledge and certainly not in the Harvey Water Irrigation Area.

On that basis alone it is also reasonable to say that Commonwealth programs have been neither adequate nor effective in promoting or achieving either of more efficient agricultural water use or the amount of water available for environmental flows in Western Australia.

Harvey Water suggests that review of expenditure on previous programs would reveal this situation.

2. How existing expenditure provides value for money for the Commonwealth.

See note 1 above. With very little expenditure in WA there is very little value for money for the Commonwealth.

3. Possible improvements to programs, their administration and delivery.

Harvey Water has always recognised that its core business is water delivery services and resolved in its earliest discussions to work towards providing the best water delivery systems possible. It was clearly understood that better delivery systems would provide the impetus towards the higher value uses of land and water which has always been a core goal of the cooperative.

After several smaller piping trials, in 2003 Harvey Water self funded \$4.25m to pipe the Waroona Irrigation District to provide a gravity driven, piped, water delivery system. The Commonwealth Government provided \$250 000 to this project from the Dairy Reconstruction Program.

Then in one of the first and largest water trades of its type in Australia, Harvey Water proposed, organised and implemented the trade of potable quality water to Water Corporation which saw 21.6 GL provided on a temporary basis and 17 GL permanently.

This water became available from the significant reduction in delivery losses in converting from an open channel to a piped water delivery system.

In its part in this trade, Water Corporation provided Harvey Water with \$85m to enable the construction during 2004 to 2008 of some 400 km of HDPE pipeline which delivers water under gravity pressure to irrigators in the Harvey Irrigation District.

The benefits of these systems include that:

- Water is always ready at the farm gate under enough gravity pressure to drive any known on farm irrigation technology.
- There is no carbon based energy required to shift water to or around the farm. Unlike with the channel system where water needs to be pumped to spread it around due to the limitations of the water supply and delivery system that effectively limited irrigation to the same one third of the property, the whole farm effectively became available for production
- There have been major savings in water delivery costs in labour (\$250000 pa) and R&M (\$150 000 pa). These savings have been passed on to irrigators in lower water delivery costs.
- We have not only saved important volumes of water, we have allowed better use to be made of water we already have by trading out potable water that was being used for irrigation.

As a consequence of these initiatives, irrigators have responded by embracing water use efficient technology. For example, whereas before the piping there were no centre pivots there are now 30 on dairy farms.

Similarly there have been increases in higher value uses and land and water in Waroona and Harvey Irrigation Districts as the table below shows.

Increase in horticulture area in Waroona & Harvey Irrigation Districts after piping the water delivery service.

Irrigation District	Minimum ha	Year	Maximum ha	Year
Waroona	56	2001/2	268	2012/3
Harvey	146	1998/9	456	2009/0

The increase in higher value uses of land and water has been 4.8 and 3.1 times in Waroona and Harvey respectively.

All this increase has been accompanied by the installation of trickle and sprinkler irrigation systems compared to the surface irrigation techniques previously used mainly to irrigate pasture.

Dairy farmers are the main volumetric users of water and their primary irrigation method is surface irrigation which is an intensive and physically tiring process when it is happening.

Increasing numbers of these irrigators are moving to piping their head ditches and also installing automated techniques to change the bays being watered.

This saves water delivery losses but more importantly has important savings in irrigators' time and energy. With an automated, piped head ditch, irrigators do not have to be present and awake over many hours to change over each bay. They report that the biggest saving for them is that they can work and sleep normal hours while the irrigation proceeds. This is invaluable during hot summer days and nights in focussing their activities on higher value tasks and conserving their energy.

The same is true of centre pivots which can be programmed to do the job at times that suit management.

The point we are making is that it is not only water use efficiency that is important, it can also lead to improved efficiency of farm management time which is critical on smaller farms.

Harvey Water's final point is that we have implemented major improvements in our water delivery services but this has not been matched with investment support by the Commonwealth in increased water use efficiency on farm.

Certainly the State has provided these services and Harvey Water has funded a demonstration site at the local Wokalup Agricultural Secondary College which is used to demonstrate to irrigators and students different types of irrigation technology such as a centre pivot, sub-surface irrigation, solid set and overhead sprinklers all in comparison to surface irrigation.

Apart from the \$250 000 provided to support the Waroona Pipe Project, while Harvey Water has invested around \$100 m in improving water use efficiency, in the broader senses as described in our Introduction, to our knowledge, none of our 700 irrigators has received Commonwealth support nor has Harvey Water.

At present there is an application in with the NWIDF and IA concerning the Myalup Wellington Project which, again, is focussed on making better use of water we already have in Wellington dam – that is, increased water use efficiency. Harvey Water is a major part of the proposal and would welcome some Commonwealth assistance.

#### 4 Environmental flows

Harvey Water works closely with the local Department of Water to ensure that our Water Resource Management Operating Systems (WRMOS) that are an environmental condition of our Surface Water Licences are met by funding the installation and use of stream flow monitoring devices below the Logue Brook dam, so that the WRMOS can be optimised.

This is because, like all South West dams, the inflows are clearly reducing as stream flows decrease as a result of climate change. While being conscious of meeting our environmental conditions we are motivated to do this efficiently. For example, this is to avoid situations in which one year, our WRMOS requirements were greater than the inflows into the Logue Brook Dam that year. This is plainly not ideal.

It is also relevant to note that whereas not so long ago, a proposal to build a new dam would have been met with howls of outrage and claims of environmental vandalism, existing dams are now recognised as important sources of water that can be used to maintain the river environments at least a minimum level. At the same time other undammed streams and rivers dry up and the aquatic organisms die out. Interesting.

These sorts of changes require balance and cooperation.