SUBMISSION TO PRODUCTIVITY COMMISSION: RURAL WATER USE AND THE ENVIRONMENT

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The views expressed in this submission are my own. They do not necessarily reflect the views of organizations to which I belong.

The submission principally addresses the questions posed on pages 15 and 16 of the issues paper.

The :Pyramid-Boort reconfiguration study referred to in the submission has been compiled by consultants RMcG, of Bendigo, Victoria for the Goulburn-Murray Rural Water Authority.

1. KEY FACTORS AFFECTING ON FARM DECISIONS .....

The key factors which affect on farm decisions to invest in new technology are:

- the degree of certainty of future supply of irrigation water;
- ordinary concerns about product profitability, interest rate futures, etc.;
- cost benefit factors, especially the capital outlay associated with technology purchase and installation and the future direction of water charges;
- lifestyle factors, especially the ability to avoid after hours labour cost and effort.

Reduced water use is of itself seldom a factor, but more efficient use of available water certainly is. Where centre pivot installation and/or sub surface drip irrigation is concerned, efficiency gains are likely to be derived from greater production per hectare and an increase in the number of hectares irrigated. In respect of flood irrigation, devices which avoid water wastage usually allow a greater area to be irrigated.

2. FACTORS RESTRICTING UPTAKE OF TECHNOLOGY .....

There is plenty of information about new technology and it is easy to access, and there are often government incentives to take up the technology. Finance is easy to access for viable farmers.

In the mixed farming sector, margins are often smaller than in horticulture or dairying, and the risks involved in investment in new technology are therefore greater. As a consequence, investment in this sector relies heavily on the provision of as much certainty a possible in respect of future water availability and the future direction of water prices.

For irrigated tree crops where winter chilling is an important factor determining yields,

uncertainty about the impact of climate change is just beginning to create uncertainty about areas which may not in future receive sufficient winter chill.

3. WHAT HAPPENS WITH WATER SAVED .....

Where physical water use efficiency is improved, the water saved is usually used to increase the area irrigated. Two important factors to be considered are the existence of suitable on farm infrastructure, and the average price of total water use on the farm. Where suitable on farm infrastructure (such as laser leveled ground) exists the area irrigated can easily be increased. If this infrastructure is combined with a "reasonable price" for temporary water purchase so that the average price paid for water enables profitable opportunity cropping, then total water use will increase.

This mechanism is really only an option for irrigation in broad acre mixed farming areas. In times where temporary water is readily available at reasonable prices, this ability to utilize available under utilized infrastructure is an important contributor to mixed farming profitability.

4. REGIONS OR ENTERPRISES WHERE IMPEDIMENTS ARE SIGNIFICANT .....

Where water has been traded out of irrigation areas the combination of uncertainty of future supply and the prospect of rising-water prices as remaining irrigators bear the fixed costs of maintaining under utilized infrastructure, present major impediments to on farm investment.

At present this applies especially to gravity irrigation areas in Northern Victoria. However, the collapse of a major horticultural industry in pumped districts might well trigger similar concerns.

5. THE IMPACT OF WATER HARVESTING .....

The efficiency of water harvesting, storage and distribution have major impacts on on farm water use decisions.

Irrigation dams are very expensive to maintain in the sense that when they need maintenance work, it. tends to be very expensive. For example, the recent upgrade to Eildon dam cost $50m. and while governments share some of the cost, irrigators will pay their share for this over a long period of time.

Much more significant however are the costs of the distribution network.

Until recently, the Goulburn-Murray Rural Water. Authority (G-MW) used the renewals annuity method as a means of pricing in the cost of replacing distribution assets. In essence, this method required irrigators to save up for the cost of future replacement of assets. A major criticism of this method was that since distribution assets are long life in nature, and technology changes' quickly, it was not practical or sensible to save up for something which may never be required. This argument has been given greater weight as water trading out of areas has loft some assets stranded and underutilized.

As a consequence, G-MW has changed to a method (Rate of Return on a Regulated Asset Base or RAB) which requires expenditure on asset replacement to be factored into pricing at the point of replacement. Decisions to replace assets will now require much closer consideration of the likelihood of the asset being utilized over the long term. This change, combined with an enhanced maintenance program aimed at prolonging the life of assets, should slow the rate of growth of prices rises. This, in turn, should increase the certainty factor in decisions to invest in new irrigation developments.

Notwithstanding these changes, the existence of stranded and underutilized distribution assets presents a major challenge to the efficiency of water distribution. Where water trades out of a district, distribution costs rise for those irrigators who are left reducing their profitability and capacity to invest, as well as giving rise to uncertainty about future supply..

The existence of stranded and underutilized assets artificially inflates water prices, adds to costs and has the effect of distorting the water market, tipping it further in favor of those districts where water has not traded out.

In this context, the Victorian government's reconfiguration strategy, outlined in its. White Paper "Our Water, Our Future" has the capacity to be a significant contributor to more efficient water markets. The Pyramid-Boort irrigation area has almost completed a study about the possibilities for reconfiguring its area, where about 25% of the water has traded out of some parts of the area. The study which will be released late in February 2006; identifies ways to increase the efficiency of water distribution through technology as well as through asset rationalization, A key finding is that it is entirely possible and practical to irrigate the same area of land while rationalizing much of the unutilized and underutilized irrigation infrastructure.

The implementation of the study is expected to provide greater certainty of future supply and to dramatically slow the rate of increase in future prices. These factors are expected to increase the attractiveness of the area and increase the possibility of trading water into the area.

6. MAJOR ENVIRONMENTAL AND NON ENVIRONMENTAL EFFECTS .....

This question, relation to environmental and non environmental third party effects is an interesting one. It is widely thought that irrigation is an activity which is harmful to the natural environment.

The advent of water trading has made irrigators much more aware of the value of water, and as a consequence, it is not used to irrigate unsuitable land, and spillages are much less common than they used to be. Technologies such as centre pivots, laser grading and water reuse systems and soil moisture monitoring have also assisted this trend.

Work undertaken in connection with the reconfiguration study in the Pyramid-Boort irrigation area makes it clear that while some native flora and fauna suffer when irrigation is introduced, others flourish!

The activities of Catchment Management Authorities and the strength of the landcare movement in irrigation areas have had major beneficial effects on the environment, both in terms of lowering water tables, managing salinity and, more recently, enhancing biodiversity.

The net result, in terms of community well being, is certainly a positive one.

A number of people have argued that the current transfers of water from the GoulburnMurray Irrigation area to Sunraysia forces more water down the Murray River in summer, when natural flows would be minimal, and that this has adverse environmental consequences.

On the other hand, where water trades out of a district, the impacts on the community are often severe. The impact on farmer confidence has been discussed above. Depopulation leads also to an inevitable loss of services, smaller numbers of players to fill sporting teams and consequent fewer things to attract and hold young people in communities.

The effects of depopulation are well documented elsewhere, and they are very real in communities where water has traded out.

7. HOW ARE THE ENVIRONMENTAL AND NON ENVIRONMENTAL EFFECTS ADDRESSED.....

The local environmental effects of irrigation are being well addressed by governments, (both Federal and State) and their agencies. Irrigators are keenly aware that they have responsibilities to the environment. The importance of reconfiguration has been discussed above.

However, depopulation caused by water trading out of an area has profound social effects which reach both young and old and touch all manner of services. Governments, including local government, have yet to develop "whole of government" approaches to individual communities where adverse water trading outcomes force rapid social change and dislocation. As the water market opens up, the need for government action to assist communities to cope with social change will accelerate.

In the Pyramid-Boort area it has been irrigators themselves who have given impetus to the reconfiguration plan, and much of its implementation will be overseen by the elected Pyramid-Boort Water Services Committee of G-MW. Moreover, all irrigators in the district have had the opportunity to have input into the plan, and to greater or lesser extent, most have done so.. The existence of a plan to reconfigure an irrigation area which has strong community support will provide a basis on which governments can engage with the. community to assist it to cope with adverse social effects of water trading.

My strong view is that the adverse social effects of water trading are best addressed in the context of a plan which has been developed with strong community input and involvement to address environmental, infrastructure and economic as well as social impacts. Attempts by government to impose social solutions in a vacuum are likely to be a money wasting failure.

8. THE TRUE VALUE OF WATER .....

Existing water markets provide good market signals for the products they trade. However, what is the true value of water? Is it devalued when its transfer leaves unutilized or under utilized assets and social dislocation behind? Is it enhanced when new technology, or higher value crops or better farmers result in greater production? And if some water is purchased to enhance the environment, does this give it greater value over productive uses?

While some may wish to debate these questions, I doubt that there is a way to, factor the answers into a water market in any way that traders could comprehend. In my view, these matters are best addressed through means other than the water market.

9. MARKET MECHANISMS.....

Recent changes to the Victorian Water Act will, when implemented, have profound implications for water trading. Among these are:

a. The creation of two new property rights, high and medium security rights. Trade in these will allow irrigators to choose the mix of security which best suits their operation.

b. The creation of channel capacity shares opens the way for trade in capacity shares. The ability to acquire channel capacity, perhaps in advance of the acquisition or use of physical water will be an important factor in investments where there is a lag between land acquisition and development on the one hand, and actual water use on the other. Large developments will be able to acquire capacity to protect their investments during the development phase.

c. The creation of an environmental reserve to be administered by Catchment Management Authorities brings a large, new and inexperienced player into the water market. During dry periods,. one would expect that Catchment Authorities would need less water for environmental flows, and that the excess water could be sold to irrigators whose' demand would be relatively high. In these circumstances, such sales would moderate the rise in traded water prices and enable increased production.

In some years, it is expected that Catchment Authorities might purchase extra water to enhance flooding or river flows. This action, together with decisions to withhold water from the market, may have important implications for water pricing and agricultural production and profitability.

There is great potential for the environmental reserve to be used in such a way as to moderate water price fluctuations and increase production which at the same time fulfilling its primary purpose of protecting the environment. Conversely, there exists the potential for Catchment Authorities and irrigation water authorities to pursue divergent goals with consequent adverse price and

production effects.

Mechanisms should be developed to ensure that Catchment Authorities and Water Authorities work closely together on the issues discussed above.

d.. The creation of the water register will assist borrowers and lenders with security arrangements and this should improve the ease with which funds flow to irrigation developments.

In addition to these changes, a number of other changes could be made to the water market. These include:

a. Opening up of interstate water trade;
b. Development of exchange rates to assist trade between areas with different security regimes.
c. Creation of new products, especially the leasing of water for varying time periods.
d. The abolition of as many restrictive trading, rules as is consistent with environmental responsibility and the physical ability to transfer water.
e. Development of an interactive market where products can be traded in real time. The present market operates on a weekly basis and is not interactive. The type of market used by the Australian Stock Exchange would be a useful model.

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