Funding Irrigation Schemes - Banks Don't Lend on a Hole in the Ground

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1. Introduction - The Challenge

The greatest challenge facing the Australian water industry is decades of neglect of key infrastructure. In 2010, sixteen years after the Council of Australian Governments (COAG) agreed to reform the water sector, there has been little discernible improvement in the maintenance and renewal of irrigation infrastructure. COAG's aim in 1994 was to move to full cost recovery, yet some irrigators still operate with derelict infrastructure and governments continue to spend billions of dollars on upgrades. What has gone wrong? Why are some irrigators doing better at making provision for their ageing assets than others?

The assets of irrigation infrastructure operators (IIOs) are the life-line of the services they provide. Usually fixed in nature, these assets range from pumps, channel control systems, to piezometers and water meters. Because there is such variation in the 'useful life' of each asset type – some have 'lives' of up to 80 years – making provision for assets can be an extremely difficult task (see Fig. 1). Although asset valuation methodologies such as 'projection gap' and 'life cycle cost analysis' undoubtedly help, it is unclear whether they have been implemented as part of the costing of fixed charges thereby preventing irrigations schemes in the last decade from becoming threatened with closure. So, is infrastructure management dependent on the vagaries of nature, or are there explicable reasons for what's been happening and sustainable alternatives to improve the situation?

2. BACKGROUND

2.1 Problem: Insufficient funds available to maintain and replace infrastructure in the long term

Why have so many IIOs found themselves without sufficient funds to upgrade and replace their infrastructure?

Historically, IIOs have underpriced their services. The historic magnitude of this reliance on government funds was noted in a report commissioned in 1993 by the working group on Water Resource Policy (the 1993 Report), chaired by Sir Eric Neal:

> *In the future there will be an increasing need for the water industry as a whole to pay its way, not only in terms of new investment but in providing for the ongoing maintenance and refurbishment of existing Infrastructure.*

A central concern of the 1993 Report was the underpricing of water by IIOs and the inability of most IIOs to recoup the costs associated with running their irrigation services, making it difficult for them to meet the cost of replacing and maintaining their assets in the future.

The 1993 Report recognised that major asset refurbishment in rural areas was essential, but that in general no adequate financial provision had been made for it. The report concluded that in the future, the cost of maintaining and replacing assets that had reached the end of their useful lives would ultimately have to be met by the IIOs themselves.

National policy was therefore that all IIOs had to move to full cost recovery for infrastructure (fixed charges) and volumetric water costs (variable charges). Even for those operators that have adopted a two-tier tariff structure – i.e. fixed and volumetric charges – the extent of recouping monies directed to future asset maintenance costs is often blurred in the configuration of those costs.

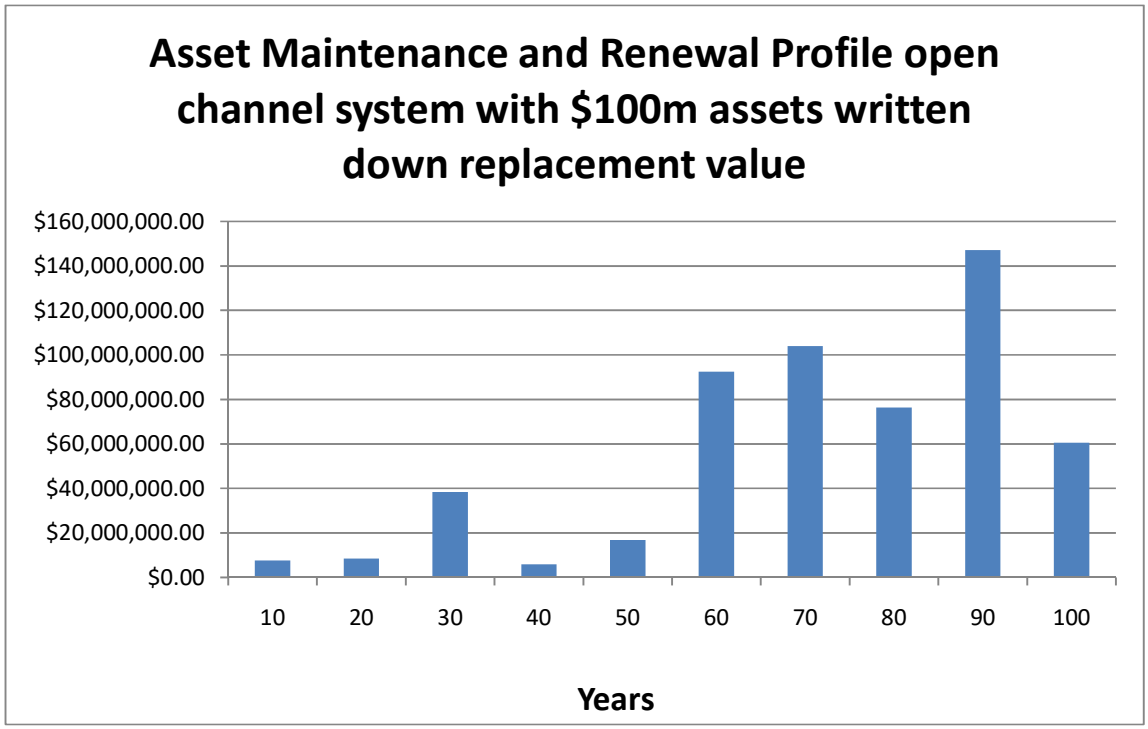
One of the problems was that the split between fixed and variable costs was distorted in some IIOs because of Government policy to weight the split in the costs towards the variable contributions for volumetric water entitlements and under charge for fixed assets. In theory the total should have been the same – but with the drop in volumetric use caused by drought the total fell short and only the reduced amount of fixed contributions were put aside for infrastructure renewals. In short, instead of properly pricing for asset maintenance and renewals and properly splitting the cost between asset maintenance renewals, volumetric and administration charges (which are usually split roughly 80% maintenance and renewals and 20% administration and volumetric charges) the split in some cases was driven by environmental arguments. The failure of sound economic policy has resulted in financial

instability, derelict assets and consequential environmental problems due to the failure to properly maintain the infrastructure assets.

The problems are further exacerbated by the fact that asset types installed at the same time reach the end of their useful lives around the same time. We have been involved in reviewing approximately 40 asset maintenance and renewal programs since 1994 and the forward projections for sinking fund requirements each time generated roughly the same profile for open channel systems - piped schemes also have similar profiles to one another.

A $100 million dollar new open channel system has the following asset maintenance and renewal profile using a very low 2% CPI figure:

Figure 1



If you review the profile you can see where your open channel irrigation scheme would sit on using a multiple or a percentage based on the replacement value of your scheme. Most schemes were built either after World War 1 or in the early 1970s – so most are in the 40 year or 90 year band width. These figures also assume of course that the maintenance and renewals were undertaken in the previous decades, otherwise the costs accumulate.

When the irrigator owned schemes were privatised in the last 15 years they were required to undertake forward projections of their asset maintenance and renewals. State governments encouraged the belief that when the time came the irrigator owned IIOs could apply to the bank for a loan to cover the expenditure spikes. But while banks may lend on the cash flow accruing from irrigation assets, the assets themselves are generally not sufficient security for a loan. In fact in 1995 an honest and in retrospect very helpful Commonwealth Bank Manager told me banks don't lend on 'a hole in the ground.' It crystallised the importance in 1995 of establishing properly provisioned asset maintenance and renewal funds for irrigator owned schemes.

Not all irrigator owned schemes were conscious of the banks view on "holes in the ground", alternatively they believed they could simply raise the funds from irrigators when the time came (presumably on the basis they had not done properly costed asset life projections). The lessons here are that irrigator owned IIOs must think outside the credit environment when planning for the future and also understand that the magnitude of the funds needed make it impossible to simply "hand around the hat".

There is another overwhelming misconception amongst many IIOs: that government grants will be available to support the up-keep of their infrastructure assets. Quite simply, whilst there are grants available at the present time from the Commonwealth they come at a cost – a cost that is paid for in water entitlements. It is also fair to assume there will be no funds available after the current program of environmental buy backs is finalised.

2.1 COAG solution: move to 'full cost recovery'

The Council of Australian Governments 1994 – Background to pricing and imposing charges in the water industry

The 1993 Report set the agenda for reform. At its meeting in 1994, the COAG accepted the report's recommendations and laid down principles enabling State governments and locally-owned IIOs to charge prices based on the principles of 'full cost recovery'.

What is 'full cost recovery'?

The principle of full cost recovery was introduced by the COAG and later defined in the pricing guidelines issued by the Standing Committee on Agriculture and Resource Management. The purpose of full cost recovery is to enable IIOs to price their services so as

to recover all the costs associated with the provision of those services. Furthermore, the principle is particularly important to the maintenance, replacement, refurbishment and up-keep of irrigation assets.

Full cost recovery operates at two levels: 'lower bound pricing (LBP)' and 'upper bound pricing'. Lower bound pricing means that IIOs may charge a price that ensures their *viability* in being able to recover operating, maintenance and administration expenses, externalities, taxes, dividends, the interest cost of debt and also the costs associated with future asset refurbishment. Most irrigator owned IIOs, as well as some government-owned corporations, operate on lower bound full cost recovery.

On the other end of the spectrum is upper bound pricing, which allows government owned IIOs to charge prices that will recover a risk-adjusted return on assets and provide for the cost of asset consumption (calculated using a weighted average cost of capital), in addition to all of the LBP recoverables. That is the IIO may return a dividend to their Government owners. The one proviso is that the prices charged must not include a monopoly rent.

IIO's such as SunWater in Queensland who are currently employing a lower bound pricing recovery are now moving towards an upper bound pricing model. Future charges under consideration by SunWater, include charging a rate return (dividend to Government) on existing dams and weirs as well as any new infrastructure, such as channel systems..

The principle established by COAG requires both irrigator owned and Government owned IIOs to recover the LBP full cost of providing their services – and this includes the costs associated with asset maintenance and replacement.

Not all current Government Policy take into account the full cost recovery approach – ACCC Water Charges

Charges relating to water in the Murray-Darling Basin are regulated by the Commonwealth Minister for Climate Change and Water who has the power to make water charge rules. Entities regulated under the charge rules must conform to the requirements of those rules. The charge rules relate to regulated water charges, which includes access charges to the operator's irrigation network, bulk water charges, water planning and management charges,

charges relating to water service infrastructure relating to the Murray Darling Basin water resources.

While the ACCC in its development of the water charge rules strives for full cost recovery to achieve water sustainability, there is no requirement for them to do so. However there have been instances such as the grant of government funding which inhibits full cost recovery in bulk water charging because the government funding replaces the charges in which the IIO would otherwise charge to recover the bulk water costs.

While discretion has been afforded to IIO's to charge prices, independent bodies, such as the Independent Pricing and Regulatory tribunal (IPART - NSW), and Essential Services Commission (VIC) oversee prices charged in line with the National Water Initiative (NWI). In NSW, IPART oversees the maximum prices that can be charged by government utilities with respect to metropolitan and bulk water. IPART's approach while appealing to full cost recovery fundamentally, concentrates on using a 'building block approach' by fixing prices based on obtaining revenue requirements derived from underlying cost requirements.

3. HOW CAN IIOs SUCCESSFULLY IMPLEMENT 'FULL COST RECOVERY' AND ENSURE THE FUNDS ARE AVAILABLE WHEN NEEDED?

3.1 Problems

So where did it go wrong for some?

Despite the movement towards full cost recovery, many IIOs have nevertheless found themselves in difficulty. Why?

There are two main reasons. Firstly, IIOs that impose levies in a one-off instance and bundle costs are not using the best structure to deal with future asset refurbishment. Secondly, some IIOs, do not adequately determine lower bound pricing because they are unsure which of the many asset valuation methods to use or do not correctly split the variable and fixed costs. Also local irrigators have been reluctant to pay the higher prices, particularly in light of the fluctuating climate conditions affecting their incomes – resulting in serious consequences for the financial viability of their Government or locally owned irrigations schemes.

3.2 Solutions/recommendations

How to make Irrigator Owned IIOs go right

A properly funded Asset Maintenance and Renewal Fund for irrigator owned IIOs puts the irrigation scheme and irrigators in a much more secure position in the future. In this structure, the IIO levies a regular incremental charge in order to build an asset and renewable fund or a "sinking fund" that can be used directly, transparently and exclusively for future asset maintenance and renewal. The fund operates like a superannuation fund making sure that funding is available when infrastructure renewals spike. An example of irrigator owned IIOs employing this structure include the Ord Irrigation, Harvey Water, Gascoyne Water and Coleambally.

Why Government Should not transfer Irrigator Fixed Charges to Treasury

Government owned irrigation schemes will always struggle to retain significant fixed charges for asset maintenance and renewals due to Government tendencies to transfer these funds to Consolidated Revenue. A well known example of this was the NSW Government transferring the entire Government owned Coleambally Irrigation sinking fund of over $17million to Consolidated Revenue (NSW Treasury) in 1996. Irrigator fixed charges are then merged as part of consolidated revenue and schemes must apply to have the irrigator raised funds returned to undertake the necessary infrastructure works. The decision as to whether to return these irrigator funds then rests with Government as these funds are seen as "Government funds" not an irrigator funded asset maintenance and renewal fund.

CoAG only required Government to charge full cost recovery it did not require them to spend the funds for the purposes for which those funds they had been raised.

How an Asset Maintenance and Renewal Fund can help Irrigator Owned Schemes

An asset maintenance and renewal fund is set up for the purposes of covering the cost of expenses arising in the future. These may include replacing, maintaining or updating an asset. In essence, the fund acts as a mechanism for covering the future costs of the asset maintenance and renewals as and when the costs full due. Irrigators operate on a pay as you go so the contributions cover the wear and tear on the scheme of the irrigator's use of the

infrastructure. Using this “PAYG” basis current members do not leave a legacy of a rundown scheme with little or no capacity to fund critical infrastructure needs to the next generation.

Money accrued in the fund will earn interest (usually invested in cash, subject to the tax rules), accumulating capital that can later be used for asset maintenance. If the entities running the sinking fund are set up correctly, member contributions to the sinking fund may also have a favourable tax status

Where to from here?

It’s plain to see that the viability of irrigation infrastructure operators is contingent on the future maintenance and up-keep of assets. Government must make the decision to require Government owned schemes to properly charge lower bound full cost recovery and for those funds to be retained by the Government IIO. Irrigator owned IIOS must accept that banks will not provide loans against the security of ‘a hole in the ground’ and that handing around the hat at the last minute is not is not responsible management of infrastructure they have been entrusted to maintain. All IIOs both Government and irrigator owned must actively adopt strategies and structures in order to insure themselves and the next generation for the future.