Case Study: Mark and Peter Winter, Moree

May 2012

Location

Approximately 15 km northwest of Moree.

Water Sources

Three general security river licences totalling 4,860 ML plus a 600 ML bore licence and 262 ML supplementary bore licence that will be reduced over the next 4 years.

Soil type

The soil types vary from grey cracking clays to red clays.

Enterprises

Cotton, wheat and pulse crops.

Irrigation System

Furrow irrigation.

Area Irrigated

Total area of 5000 ha with 1300 ha developed for irrigation.

Background

Mark and Peter Winter are Owner Managers of the Inglewood Forest Pastoral Company. The Winter family has been farming in the Moree district for 140 years.

Description of the Project

The project included a new recirculation channel to enable the transfer of water between the two properties 'Bethel' and 'LM'. This is important for recycling irrigation water as well as being able to transfer water between water storages on both properties.

Mark and Peter Winter with the pipe to be part of their recycling works. Image: S. Bray

The project also included sealing a storage on 'LM' to limit seepage so it can be used as a primary storage.

This part of the project involved:

- Investigation of the storage floor using electro-magnetic induction technology (EM) to identify the major seepage zones.
- The identification of suitable clays for sealing the storage.
- Earthworks to fill and compact the identified seepage zone.

The Benefits

The potential water savings for the entire project are in the vicinity of 546 ML in an average year.

However, the main benefit of the works completed is the capture and use of 'dead' water which in the past has been unable to be recycled because of the farm layout. Now this water can be returned and used through the irrigation system.

The treated storage on 'LM' has reduced seepage losses and provided a storage alternative with a reduced surface area to reduce evaporation losses.

The Winters believe the improvement to their on-farm infrastructure will also provide greater flexibility in timing irrigations and increase the ability to recycle water between farms. Ultimately these improvements will lead to greater efficiencies.

Landholders experience

Peter Winter said they applied for the funding because his accounting of water at the beginning and end of the season showed there were significant losses that were worth investigating and recovering.

"We have invested a lot in developing our properties to improve irrigation efficiencies through land levelling, storage development, tailwater return systems and more recently redesigning head ditches to improve application efficiencies."

"This work just builds on that and I estimate the improvements we are making through receiving this funding will reduce our losses by around 40%," Mr Winter said.

The Winters worked with their Approved Irrigation Consultant to identify on-farm water loss hotspots, quantify the water losses, and to develop irrigation modernisation plans.

What aspect of the project proved most challenging?

The Winters found estimating the potential water savings difficult and it will be another season before they will be able to compare actual savings to those estimated. Only then will they know the true value of the incentive they received for the water entitlement surrendered.

Peter Winter said the weather was also a problem.

"We had a very wet end to the year and it was difficult with some of the pipe laying and soil removal."

"Completing the works on time with the wet conditions in 2010 was very challenging," he said.

What advice would you give other irrigators?

The Winters would recommend this approach to other irrigators. They believe that undertaking thorough on-farm water management assessments is critical to identifying the most cost effective opportunities to reduce losses over the whole system.

They think there is scope for other irrigators to look at their recirculation systems and storages as a way of minimising seepage and evaporation losses.

Peter Winter at one of the channels on their property. Image: J.Easey

Control structures previously installed in the head ditches to maintain a constant water level during irrigation and help reduce erosion. Image: J. Montgomery

What are your thoughts on the Border Rivers-Gwydir project?

Mr Winter said the time constraints posed a problem because it was a bit rushed to complete investigations, then work through the options and make a decision about giving up water.

"The best thing about this initiative is that we will achieve water savings from an idea that we have had for a while and the on-farm water assessments proved we were on the right track."

"This provided us the confidence to implement our plan and instead of paying for the entire project we just had to substitute a reasonable amount of water for it," Mr Winter said.

The Australian Government is providing $83 million to this project through its *Water for the Future* initiative.

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