

Water Matters...

Series supported by Valmont

Overhead irrigation: Smarter water use in north west NSW

■ By Claire Norris¹ and Meg Strang²

THE NSW Sustaining the Basin Irrigated Farm Modernisation (STBIFM) program is working with irrigators to upgrade equipment and irrigation systems to use water more efficiently. In March STBIFM teamed up with Tocal College and CottonInfo to take farmers thirsty for knowledge on a tour of some innovative irrigation businesses in the Gunnedah region.

The tour showcased three properties in North West NSW that are using overhead irrigation systems to optimise crop

performance – ‘Mirrabinda’ Boggabri, ‘The Willows’ at Gunnedah, and ‘Jangaree’ near Breeza.

The clear message from the Gunnedah tour was that upgrading to overhead systems can deliver real benefits such as greater flexibility, improved operational efficiencies, and increased yields, as well as more efficient water use.

Irrigators in the Lower Namoi and Border Rivers regions of NSW may be eligible for funding to both help work out how they



The NW bus tour looked at three different overhead systems.

The Leader in Precision Irrigation.



The Leader in Precision Irrigation

**CENTRE PIVOT and
LATERAL MOVE IRRIGATION**

AS SOLID AS THE GROUND IT STANDS ON.

valleyirrigation.com



VALLEY® STANDS THE TEST OF TIME.

Great ground deserves great irrigation. That way, you get the most out of your investment. Hands down, Valley® is the name successful growers depend on. Easy to use. And reliable as sun-up tomorrow. Get quality. Get service. Get ahead. You can count on that with Valley.

VALLEY 

The Leader in Precision Irrigation.

Ph: 1800 VALLEY



could modernise their irrigation system and then fund the best option for their property.

The water saved by implementing an irrigation modernisation project is then shared between the irrigator and the environment, supporting more productive agriculture while putting more water back into the Murray Darling Basin.

The program also provides support for irrigators to access training to help plan, install, run and maintain their irrigation systems more efficiently.

'Mirrabinda', Boggabri – James Barlow

Area under overhead irrigation: 650 hectares

Area under flood irrigation: 50 hectares

First stop on the Overhead Irrigation bus tour was James Barlow's property, 'Mirrabinda', where he's operating nine fully automated centre pivots and one manually operated machine.

The first pivot was installed in 2010. It reduced labour, allowed more flexibility in crop selection and was very reliable.

James received STBIFM funding to install a further eight pivots and upgrade his pumps, storages and power supply, enabling more crop to be irrigated with less water.

With the assistance from STBIFM James was able to look at the property holistically, plan and reorganise the irrigation layout across the whole farm.

James left the old channels in place to assist with drainage and catch water from rain events, which has been especially useful in dry times.

The key benefits of modernisation for James have been reduced labour costs and greater flexibility. The new system can be operated remotely and has the capability to irrigate the whole farm using a flow rate of up to 50 megalitres a day.



James Barlow in front of his new river pumping station.

"Growing cotton under flood irrigation was very labour intensive. With the pivots I can grow cotton more efficiently and double crop back into wheat"

"I'm enjoying farming now. I can run the whole system and water the whole farm while sitting on the tractor"

'The Willows', Gunnedah – Mark Hamblin

Area under overhead irrigation: 480 hectares

Area under flood irrigation: 100 hectares

Mark Hamblin changed from flood to lateral move irrigation in 2007 to improve water use efficiency on 'The Willows', west of Gunnedah.



Mark Hamblin and his lateral move with drag hoses fitted.



Mark Hamblin explaining the benefits of low energy precision application drag hoses.

Padman Stops

Innovative Irrigation Solutions



FREECALL
1800 254 594

Working with farmers to develop outstanding results in irrigation
for a smarter future in farming.



Bankless Channel

We can provide Drop Boxes to suit any size layout. From 30-120mg/day.



Through the Bank

Pipe Ends come with downstream bubblers for optimum coverage.



Maxi-flow culverts

Our Culverts unique design provides high strength and maximum flow.



Labour Savers

We have a full range of portable and affordable automation.

Check out the Padman Stops website for a full range of our products

www.padmanstops.com.au

Mark estimates he's achieved a 30 per cent water saving per hectare and a significant reduction in diesel costs when using ground water as less water needs to be pumped. He has also seen an increase in bales of cotton produced per megalitre.

The biggest water savings have been achieved early in the crop's growth. Sprinklers are used for germination, followed by a switch mid-season to Low Energy Precision Application (LEPA) hoses which are dragged along the ground between rows delivering water with minimum evaporation and surface wetting. The technique also keeps wheel tracks dry, eliminating the risk of bogging, and helps control the soil-borne fungal pathogen *Verticillium* wilt.

According to Mark, laser levelling fields is essential when changing to overhead irrigation to ensure there are no low spots that could become waterlogged and cause wheel track and plant health issues, and no high spots where water will run off too quickly.

'Jangaree', Breeza – Andrew and Ross Riordan

Area under overhead irrigation: 140 hectares

Area under flood irrigation: 170 hectares

When brothers Andrew and Ross Riordan purchased their Breeza property, 'Jangaree', it came with a 1020 metre lateral move irrigator, with 1200 hoses spaced 30 inches apart.

Operation and maintenance with an overhead can be challenging. But the brothers believe the system makes it much easier to manage rainfall events effectively.

"It's particularly beneficial during the first irrigation when you can better match water application to the crop's needs," said Andrew.



Andrew and Ross Riordan in front of their lateral move system.

Standout messages from the Overhead Irrigators Tour

- Replacing outdated systems with overhead systems can result in improved water use efficiency and can achieve water savings of up to 30 per cent.
- Yield is not always higher but can be maintained using less water.
- Moisture probes and other scheduling tools are an essential tool to monitor crop water needs and adjust application accordingly.
- The risk of a system running off track can be addressed through automation and telemetry.
- The capacity to add fertiliser through the overhead system is an advantage.
- Overhead systems result in significant labour savings.
- Wheel track management is a challenge but each grower has developed methods to counter problems.
- An independent system performance evaluation is well worth the expense as research has shown a large percentage of overheads are not running to specifications.

Changing from traditional irrigation practices to overhead centre pivot or lateral move systems can be enticing. But installing overheads requires a large amount of capital investment and may not suit all farming situations.

It is important that irrigators make informed financial decisions and always get specialist advice before embarking on a modernisation project.

The Commonwealth Government has invested \$111 million into the STBIFM program. The program is funded through the Sustainable Rural Water Use and Infrastructure Program as part of the implementation of the Murray Darling Basin Plan and is delivered by NSW Department of Primary Industries.

¹MERI and Communications Coordinator, Sustaining the Basin, NSW DPI.
²NSW LLS.



STBIFM KEY ACHIEVEMENTS

Since June 2012 the STBIFM program has committed nearly \$70 million to the completion of 108 modernisation projects.

Approved projects have resulted in 32 GL of water savings with 10 GL being retained on-farm for additional productive use.

The program has delivered 85 training and capacity building events attended by 895 participants.

FUNDING OPPORTUNITIES

STBIFM infrastructure funding is now available for irrigators with eligible entitlements in the NSW Border Rivers and Lower Namoi catchments. Applications close June 30, 2017.

A \$2000 grant is also available for the preparation of Irrigated Farm Water Use Efficiency Assessments (IFWUEA) for irrigators with eligible entitlements in the NSW Border Rivers, Gwydir, Namoi/Peel, Macquarie/Cudgegong and Barwon-Darling water management areas.

An IFWUEA helps locate and quantify on-farm water losses allowing irrigators to make informed decisions about ways to improve their irrigation systems.

For further information on funding opportunities, visit the STBIFM website or contact your local project officer Peter Verwey (Narrabri), 0409 812 497 or Bill Williamson (Dubbo), 0427 660 618