



CGA FINAL REPORT

Part 1 - Summary Details

Please use your TAB key to complete Parts 1 & 2.

CRDC Project Number: CGA1901

CGA: Upper Namoi Cotton Growers Association

Project Title: Assist Upper Namoi Cotton Growers to investigate efficiency and productivity of on-farm irrigation water use and management, through organising field trip to visit Macquarie Cotton Growers whom have successfully modernised their on farm irrigation infrastructure.

Project Commencement Date: 23/11/2018

Project Completion Date: 29/03/2019

Part 2 – Contact Details

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Part 3 – Final Report

(The points below are to be used as a guideline when completing your final report.)

Background

1. Outline the background to the project.

The Upper Namoi Cotton Growers CGA showed particular interest in the water savings and water efficiency infrastructure available. The project involved exploring their potential implementation, in order to use less water and produce higher yields in their cotton production.

Furthermore, the CGA facilitated a bus trip to visit for growers in the Upper Namoi Valley to the Macquarie cotton, to explore how these innovations have improved their operational efficiencies, as well as more efficient water use.

The bus trip was completed on the 5-6th March 2019. Upper Namoi Cotton Growers had 15 growers attend, visiting Auscott Warren, Quigley Farms, Billy & Lucy Ferguson at Dunedin

Farming, and Ian & Anthony Corderoy at Narromine. The trip exposed the cohort to many ideas and new innovative farming methods, such as provoking thought for implementing strip tilling, groundcover and water application rates.

Objectives

2. List the project objectives (from the application) and the extent to which these have been achieved.

Our project objectives were to assist the Upper Namoi Cotton Growers to investigate efficiency and productivity of on farm irrigation water use and management.

Through organising and facilitating a field trip to visit the Macquarie Cotton Growers whom may successfully modernised their on farm irrigation infrastructure and technology, we were able to explore and learn more about these systems. The CGA organised the trip, and conducted the field days on Tuesday 5th and Wednesday 6th March, 2019.

Through visiting Quigley Farms at Nevertire, Bill & Lucy Ferguson at Trangie, Ian and Anthony Corderoy and Auscott Farms at Warren, we visited bankless channels, on farm irrigation improvements, overhead spray systems (lateral move, as well as centre pivots), as well as ancillary equipment which is necessary for upgraded irrigation systems to function.

The field visits also provided an opportunity to conduct a question and answer session with growers currently using the systems. The open communication provided a forum to investigate the effectiveness of implementing these water efficiency infrastructure, as well as the financial contribution required on farm for the possible returns.

Consequently, this assisted in encouraging local growers in the Upper Namoi into exploring potential opportunities with on farm infrastructure improvements, which in time, will subsequently provide long term water savings, improved efficiencies and also provide economic, environmental and social outcomes for the Upper Namoi regional communities and their farms.

Overall, the CGA has benefited from investigating and further exploring the implementation of lateral and pivot infrastructure in the Macquarie Valley, as well as how they can keep up with the water requirements of the cotton crop during summer.

The Upper Namoi will also subsequently deliver environmental benefits, in particular in water tight years, due to the increased water efficiencies, increased sustainability and conversation with knowledge and experience transfer between the valleys.

Socially, the project has facilitated building a relationship between growers from their respective valleys, as well as networking opportunities and information transfers in the future. This will subsequently, help build upon our already collaborative industry and strengthen the relationships already present. It also served as a wonderful opportunity to take a break and expand the participant's horizons, as due to the dry conditions and consecutive seasons, it has been extremely difficult socially and mentally for many in these regional and rural areas.

Methods

3. Detail the methodology and justify the methodology used. Include any discoveries in methods that may benefit other related projects.

- Cotton grown under overhead sprinklers (pivots & laterals) on conventional raised beds does not produce the best results and will consequently result in poor yield results and increased water use.
- Ground cover was highly recommended under lateral move irrigators. However, it does require specialised equipment to do so. This was an economic consideration for the Upper Namoi Cotton Growers, as this is a barrier to entry to employing their irrigation systems on farm.

- Sprinkler selection is another important consideration, as it strongly correlates with water usage and yield potential.
- Timing of irrigations was another discovery, as this is different to traditional cotton irrigation farming systems.
- Lateral and pivot irrigation systems also involve machine maintenance, and upkeep. This can also prevent breakdowns during crucial times, which is extremely important during the irrigation season.

Outcomes

4. Describe how the project's outputs will contribute to the planned outcomes identified in the project application. Describe the planned outcomes achieved to date.

The Upper Namoi CGA had 15 growers visit successfully farmers and businesses in the Macquarie Valley who have utilised new techniques, technologies and infrastructure to their cotton production systems.

The CGA gained a comprehensive understanding of the key elements that these growers in the Macquarie Valley have employed to produce more cotton with less water under sprinklers. This knowledge transfer has accelerated the learning and knowledge of the Upper Namoi Cotton Growers due to the Macquarie Valley knowledge transfer and willingness to share their experiences and skills.

Economic Benefits

The project facilitated the investigation of installing new irrigation technologies around the Gunnedah community and the greater region of the Upper Namoi. Consequently, the trip we anticipate will provide new business projects locally in the community by installing some of this equipment, and recent announcements by the Government to increase funding for irrigation efficiencies to reduce water used.

Furthermore, we believe this will positively affect employment opportunities in the area, as well as the local economy through its implementation, planning, investigation and project designs for irrigation systems around the Upper Namoi. Through improving water efficiencies and the environmental sustainability in our regional area, in time, this project will have a carry on effect in the local economy.

Environmental Benefits

The project has delivered effective information and knowledge transfer between the Macquarie Valley and the Upper Namoi Valley. This will indirectly improve the ecological health of our local water systems and rivers, as well as assist in more sustainable methods for the environment.

Growers whom are looking to implement this technology will consequently improve their water efficiencies on farm. Environmental works and innovative technology will enable better and improved environmental outcomes for those farmers implementing water efficiencies use schemes, as they will achieve a great reduction in water used, whilst yield will most likely not be compromised.

Social Benefits

Socially, the project provided a catalyst to get off farm and have a break from the current persistent dry conditions. Meeting with likeminded other farmers, aided in providing a social networking opportunities and an avenue for growers attend an educational trip to another Valley growing cotton extremely well.

The feedback we received was very positive, with many sentiments around the benefits of visiting another valley provides a different aspect and angle of looking at things, especially in terms of business production methods in relation to cotton production.

Meal times also provided excellent opportunities to communicate in an informal manner, and strengthen the relationship between cotton farmers across different regions. The project also provided a similar benefit to those participating from the Macquarie Valley, as they also were able to have a social outing with likeminded people, especially in this time of drought and hardship, as these times can have unmeasurable effects on mental health in their respective communities.

5. Please report on any: -

a) Feedback forms used and what the results were

Currently waiting to receive all the feedback forms from the participants whom attended. General comments from all participants were that the trip was extremely beneficial and enjoyable.

b) The highlights for participants or key learnings achieved

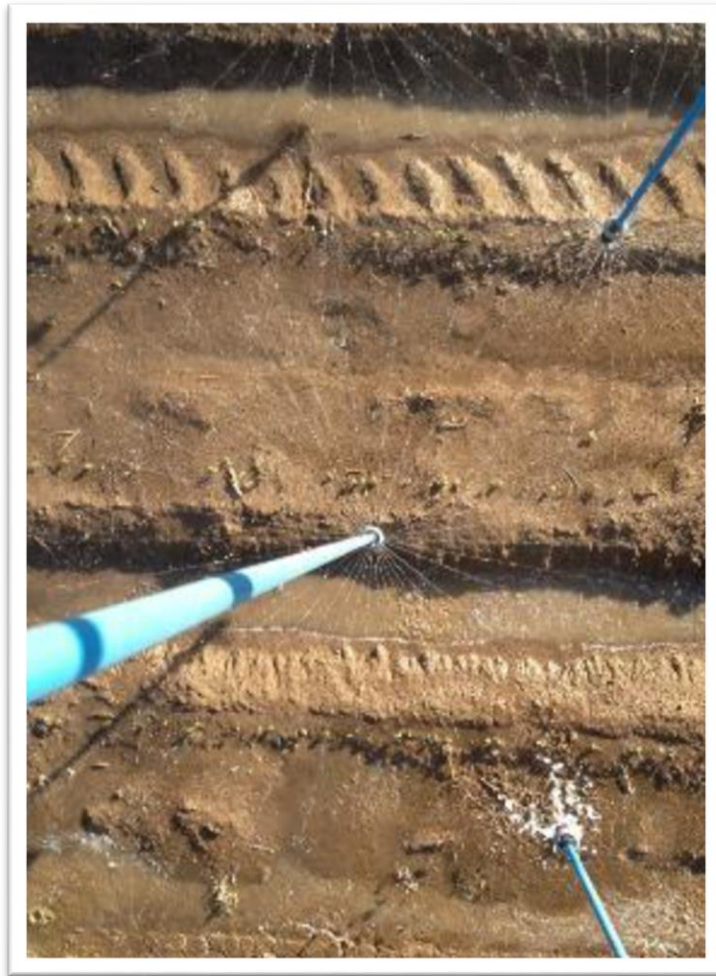
Auscott Farms at Warren was really educational and enlightening. Seeing cotton production on such an impressive scale was extremely interesting. The variety trials and row spacing of 60-inch cotton and 80-inch cotton was also of particular interest for many of the participants.

Quigley Farms through the bank pipes and overhead lateral irrigation provided a side by side comparison, and subsequently provided many findings through seeing such a clear comparison just metres away from one another.

Dunedin Farming have invested in bankless channels on their flood irrigation. The Fergusons were extremely open and honest with their knowledge and experience of the system. They even had their agronomist David Klare from Landmark Warren attend. Which was extremely valuable as he was able to provide great insight into the agronomy of growing cotton in bankless channels and challenges they have experienced through switching to this kind of irrigation lay out.

c) The number of people participating and any comments on level of participation

The trip had 15 growers attend from the Upper Namoi Valley, and also had participants locally from the Macquarie Valley also attend such as local agronomists, cotton merchants, cotton growers, Auscott Farm managers.



Above: Lateral irrigation system watering furrows (Photo: Tom Quigley)

Conclusion

6. Provide an assessment of the likely impact of the results and conclusions of the research project for the cotton industry. What are the take home messages?

In conclusion, this project was extremely beneficial and rewarding to attend. The trip facilitated and delivered upon environmental, economic and social terms, whilst also has open many doors to further explore possible irrigation efficiency works.

In future, the Upper Namoi CGA would like to return the favour to the Macquarie Cotton growers, by hosting them on their properties. The Macquarie Valley growers provided an opportunity and ability to first hand see and enquire about these water efficiencies implement on their farm first hand, and take on their feedback to better implement and learn from their challenges. Many participants felt energised and ready to now improve their on farm water efficiencies and sustainability for the future. Especially with consecutive dry periods currently.

Networking between the Valleys facilitated stronger relationships, and also built connections for the future.



Above and Below: At Auscott Warren, with the Farm Manager Bill Tyrwitt.





Above: Through the bank pipe irrigation layout at Quigley Farms, with Rich and Tom Quigley.
Below: Quigley Farm overhead irrigation lateral.





Above: Cotton Australia's Alec Macintosh checking out through the bank pipes in action at Quigley Farms.

Below: Bankless Channels at Bill and Lucy Ferguson, Trangie.





Above: Auscott Warren, comparison of varieties trials.
Below: The trusty field trip bus.



Extension Opportunities

7. Detail a plan for the activities or other steps that may be taken:

(a) To tell other CGAs/growers/regions about your project.

We've had great feedback and enthusiasm to run an exchange between the valleys. The Upper Namoi Growers who attended the bus field trip were keen to return the favour and host a bus load of Macquarie Cotton Growers in their region.

The size of the cohort made the communication really open and honest between growers. This consequently resulted in more freedom in asking questions and more intimate conversation between the attendees and the hosts.

Moving forward, we would like to work with the Macquarie CGA and find a time (and funding if available) to have the information and knowledge exchange between the valleys in the form of another bus trip and field day.

It would be extremely beneficial for all participants, as there is so much to learn and build upon from the field trip to the Macquarie.

Please email your completed report to research@crdc.com.au