



Extension summary

The extension officer role in the Resilient EP project helped raise awareness of the project in the region, extended results, worked with growers and advisors on how they could evaluate and implement practice changes and then facilitated discussion groups, so that the key learnings could be worked through in a dynamic group format with peer-to-peer learning. The role also helped form a conduit to bring the various components working on the project together as well as coordinating and facilitating on-ground activities when needed. To achieve these outcomes the regional innovators group (RIG) provided feedback on the levels of current grower knowledge and potential gaps, as well as how, where, and when to best engage with growers.

1. Raising awareness

To create wider grower engagement, listen to grower and advisor feedback that could be incorporated into the project, the extension officer spent considerable time in the first two years of the project, raising awareness of the project through attending and speaking at grower field days workshops and seminars.

Events

- 290 growers were presented to, with the project at seven different Ag Bureau sticky beak days in 2020.
- In 2021, 115 growers were presented to across eight different trial report meetings on the upper Eyre Peninsula.
- 410 growers and consultants were presented to at ten different agricultural bureau days in 2021.
- In 2022, 100 growers were presented to across eight different trial report meetings on the upper Eyre Peninsula.

2. Evaluation and implementation of practice change

The extension officer was immersed in the collection of data (grower harvest yields, soil samples from focus paddocks). This provided them tremendous insights on the changes in soil type, and grain yield and how these factors were be inter-related. This enabled them to discuss management

and production implications with landholders and then help to devise on-farm trials/ demonstration where questions remained, or extra confidence was needed to achieve practice change.

Throughout the project ten (eight forming the mainstay) different paddocks covering the major agro-ecological environments and soil types of Eyre Peninsula were utilized as focus paddocks. These were tested extensively and used for various project activities including paddock demonstrations and formed the context for discussion groups.

This occurred through:

- Each year eight (nine in 2022) focus paddocks were sampled, monitored and evaluated.
- Liaison with growers hosting each of the focus paddocks including collection of harvester yield data and paddock inputs.
- 20 discussion groups held across 2021 and 2022. with
- Liaison, collaboration and assistance with data collection for CSIRO.
- Liaison, fact checking, and data collection with Square V to help create soil moisture probe web interface.
- Consultation and extension occurred on the 24 field trials and paddock demonstrations that occurred over the three years.

3. Discussion Groups

From 2021 growers and advisors came together in eight different discussion groups, using the core data developed by each of the focus paddocks as the basis for discussion. The discussion groups gave the opportunity for neighbouring growers and their advisors to come together to discuss how the measurement of soil moisture, a good understanding of soil characteristics and environmental conditions can affect their production and risk profile and how they can use that information to become more resilient and more profitable. Each group was generally about 10-15 people. The value of peer-to-peer learning when discussing potentially complex decisions was evident through the number of growers returning for each meeting and the size of the groups generally growing. The key focus paddock owners were leading, well respected growers in the area which also assisted in the groups dynamics. Groups were held twice a year in 2021 and 2022, once in April prior to seeding and the other in June/ July. Having groups situated in the paddock in winter gained greater interest and had growers interacting and contributing to discussion.

Through the discussion groups growers using soil moisture probes as a tool to help predict yield potential and then adjusted inputs accordingly. The accumulation of yield data and protein data was able to be presented at discussion groups and trial report meetings. These data also were able to demonstrate to growers that in parts of paddocks yield was being sacrificed through under-fertilisation. This incited the use of variable rate experiments within the project. The end result showed how nitrogen use efficiency and therefore yield, and profitability could be increased within a paddock. Within the scope of the Resilient Eyre Peninsula project, four out of the eight focus paddock growers have begun to

use variable rate application of nitrogen. One who didn't change already did prior to the project. This change is closely followed by other early adopters within a farming community or area. Upon asking what the RIG think they got the most out of in regard to the project one grower stated that;

'Zoned application of N is very important to getting a profitable response on most central and western EP farming systems.'

Another agronomist in the Regional Innovators Group recognised that;

'For me I think the farmers I work with gained an improved understanding on how to establish yield targets and target nitrogen based on a range of variables including soil water.'

'I also feel that Gus in particular has improved his approach to variable rate in the sense of a willingness to attempt to drive higher production zones further.'

Most if not all agronomists in the regional innovators group now use soil moisture probes as an indicator of yield potential when predicting fertiliser input requirements earlier in the season, even prior to.

Conclusions:

The key farmer learnings from the resilient EP project were:

1. How to understand and interpret soil moisture probe data to use as a tool on farm. This has led to more accurate yield predictions.
2. Using soil moisture probes as a tool to make better grain marketing decisions.
3. A greater understanding, leading to uptake of yield potential and the required inputs to achieve this has been developed within discussion groups and surrounding farming communities to increase accuracy of inputs and therefore business profitability and sustainability.
4. An understanding of soil variability, the associated yield differences and therefore input differences required.
5. An influence on good farming practice to maximise water use efficiency.
6. Increase in knowledge of interpretation of climatic drivers that influence the rainfall on the Eyre Peninsula.
7. How to understand and interpret long-term rainfall forecast.

Successes of approach

The peer-to-peer learning that occurred through the discussion groups helped drive practice change at a local level through a creating a deep understanding of complex decisions. This approach may not have been so successful if simpler decisions were the outcome.

Limitations

The value of the discussion groups was limited to the attendees and were not able to capture a wider audience. Because of the complex nature of the decisions being discussed and their specificity to the local area general extension messages to a wider audience were more difficult.

