

Final report

Forewarned is Forearmed (FWFA): Managing the Impacts of Extreme Climate Events - Community of Practice (CoP)

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Abstract

The Forewarned is Forearmed (FWFA): managing the impacts of extreme climate events project is a long-term collaborative project funded by the Australian Government Department of Agriculture and Water Resources as part of its Rural R&D for Profit program along with contributions from several Rural Development Corporations. It is focused on improving the forecasting of extreme events and equipping farmers with the information and tools needed so that they can be forewarned and prepared.

As a part of project activities, a Community of Practice (CoP) was established in 2018 to allow for members of the project team and beyond to come together, share research outcomes, tools, services etc. that relate to extreme events, gain an increased understanding as to producer needs in forecasting extreme events. It was also set up to provide the Bureau of Meteorology (BoM) and other project partners with feedback for the newly developed forecast tools and provide training for members of the CoP so they can help facilitate the adoption of the new products amongst their networks.

Fifty monthly online meetings were held with an average attendance per meeting of 16 researchers, extension officers, consultants, industry representatives and producers representing over 20 different organisations. In conjunction with these meetings monthly BoM webinars were also held to help build seasonal climate forecasting and extreme event knowledge amongst the climate community.

Executive summary

Background

The CoP was established to keep relevant stakeholder groups i.e. research groups, regional and industry-specific reference groups and agribusiness supply chains from dairy, beef, sheep, grains, wine, pork, rice and sugar industries, connected throughout the lifetime of the project and foster an environment for collaboration in the development of the new forecasts for extreme events as well as provide training for their application.

Objectives

Four communication objectives were developed for the project, which centred around extending research undertaken by the project and providing training to members of the CoP for new climate products. The key outputs were:

- identify and implement CoP activities as prioritised by members
- reports documenting the CoP feedback on the experimental products
- conduct training for new climate products through the CoP
- deliver extension material through the CoP

The results section contains of a summary of how each of these were achieved.

Methodology

Over the course of the FWFA project the established CoP that was set up inside the Round One project in the RR&D for Profit program continued under the management of BCG. The continuation of the CoP was to ensure dialogue between parties in this project working in disparate regions of Australia and across the four work packages could remain connected via regular online meetings.

Results/key findings

The FWFA CoP was an effective mechanism to encourage collaboration amongst climate science community with existing relationship strengthen and new connections made. It also proved to be an important channel to gather feedback and provide training to CoP members for the new extreme products developed in the FWFA project.

Benefits to industry

- Relationships and contacts made through the CoP flow into other projects and opportunities
- Increased understanding of agricultural user needs
- Informed people able to promote the new extreme products to the broader agricultural industry
- Increased uptake of seasonal prediction products of extreme events

Future research and recommendations

Based on the outputs and outcomes of this project, BCG would recommend that future research/project work:

- Have a high level of interaction with end users from a variety of locations, industries and knowledge bases to support the research/product development so that it is firstly fixing a real problem and secondly user friendly. The FWFA project has been a good example of this.
- Invest time in a few 'early adopter producers' to use them as case studies to aid extension activities and help increase the adoption of research outcomes/products.

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1. Background

Australia farmers and agribusinesses operate in one of the most variable climates in the world, with extreme events and climate variability the largest drivers of fluctuations in annual agricultural income and production. The Forewarned is Forearmed project aims to deliver direct value to farmers through providing forecasts of extreme events and equipping farmers with the information and tools to be forewarned and prepared.

To aid in the development and adoption of new tools for extreme events a CoP was established to keep the relevant stakeholder groups i.e. research groups, regional and industry-specific reference groups and agribusiness supply chains from dairy, beef, sheep, grains, wine, pork, rice and sugar industries connected so ideas could be shared, feedback gathered and relationships created/strengthened.

2. Objectives

The objectives of the FWFA CoP were to:

- Identify and implement CoP activities as prioritised by members
- Reports documenting the CoP feedback on the experimental products
- Conduct training for new climate products through the CoP
- Deliver extension material through the CoP

The results section contains of a summary of how each of these were achieved.

3. Methodology

Over the course of the FWFA project the established CoP that was set up inside the Round One project in the RR&D for Profit program continued under the management of BCG. The continuation of the CoP was to ensure dialogue between parties in this project working in disparate regions of Australia and across the four work packages could remain connected via monthly online meetings. It was also set up to be an important channel to gather feedback and provide training for the new extreme products developed in the project.

4. Results

During the lifetime of this project 50 online CoP meetings were held with an average of 16 people per meeting and a total of 167 members signed up to the CoP. In addition, there were 38 online BoM Catch Up webinars, averaging 28 people per webinar and a total of 119 members on the email list.

4.1 Objective 1

Identify and implement CoP activities as prioritised by members.

Topics and opportunities were identified through regular engagement with IRG and CoP members. For example, at each CoP meeting, members were asked if they have topics or issues they want to discuss. Any topics or opportunities raised were refined and extended through the CoP as well as if appropriate via Climate Kelpie's communication channels.

Examples include:

- Presentation on Stratospheric Warming
- Demonstration of the Local Climate Tool developed by Agriculture Victoria
- Update on results generated from various projects under the Northern Australia Climate Program

4.2 Objective 2

Reports documenting the CoP feedback on the experimental products.

The first set of FWFA experimental products, Products 1 & 2, were presented to CoP members in March 2019 via an online forum. Recordings of the mini feedback session and the CoP feedback session (attended by 9 CoP Members) were provided to the BoM, with the permission sort from attendees. Feedback and comments from these sessions were also included into the FWFA Project product feedback excel file in the Google Docs Drive created by BoM.

For the second set of FWFA experimental products, Product 3, a slightly different approach was adopted in order to gain feedback about the experimental products. At the October 2019 CoP meeting a presentation about the products was given followed by a Q&A session. Fifteen CoP members attended this meeting and any feedback generated was again passed onto the BoM.

The third and final set of FWFA experimental products, Products 4 & 5 was presented in an online meeting to the CoP in April 2021. Twenty-nine CoP members were in attendance and were given plenty of time to raise questions about the products and provide feedback in an informal way. All feedback was collated and provided back to the BoM including results from the online poll to help determine Product 5 (pie charts vs. burst graph).

4.3 Objective 3

Conduct training for new climate products through the CoP.

Whilst no dedicated training sessions were created to educate CoP members, there were ample opportunities for CoP members to gain a better understanding of the products, ask questions as well as see examples of how the products could be practically applied by agricultural users throughout the various activities in the CoP. This approach was taken due to delays in the Products being officially launched on the BoM website however still wanting CoP members to have enough knowledge so that when they are operational, they can help facilitate their uptake in their respective industries and locations.

Examples include:

- Inclusion of Products 1 & 2 in the monthly catch-up with BoM webinars which showed attendees how to incorporate these forecasts when looking at the seasonal outlooks from the BoM. These webinars typically attract 28 attendees per webinar and those that are unable to make it have access to a private Slack group to view the recordings.
- A presentation from Tom Bowditch, a member of the CoP, on how he has been applying the FWFA experimental forecasts to control Witchweed in the MacKay region. This meeting attracted 26 attendees.
- Presentations on each of the five products – what they will look like, how to interpret the information, key features on each product over the course of 2020 and 2021.

4.4 Objective 4

Deliver extension material through the CoP.

Through collaboration with the Managing Climate Variability program as well as other climate programs i.e. Northern Australia Climate Program a wide range of research projects relating to extreme events and seasonal climate forecasting have had their results and key outcomes extended through the FWFA CoP. These delivered many key messages for CoP members to be able to share through their networks. Examples include:

- A report into producer requirements for weather and seasonal climate forecasting
- Why was Australia not wet during spring 2020 despite a La Nina
- The WA Extreme Weather Events tool
- BoM's new multi week weather outlooks
- New Forecasts4Profit website and local climate tool
- Lessons learnt from the QLD Flood in 2018
- Communicating climate model statistics and probabilities
- Producer discussion on the use of forecast information to make decisions on-farm

5. Conclusion

The FWFA CoP has achieved against all the objectives as outlined in the contract.

It has fostered an environment for collaboration between project partners, industry representatives and anyone interested in extreme events and seasonal climate forecasting and members have appreciated its existence.

"I was really impressed with the CoP and how it all works" – Karla

"Thank you for all your work in keeping these sessions going" - David

CoP members were actively involved in shaping activities within the CoP as well as providing feedback towards the development of the new extreme event forecast products. They gained a better understanding of the new products and will be able to help facilitate the products adoption through their networks.

5.1 Key findings

The FWFA CoP was an effective mechanism to encourage collaboration amongst climate science community. It was also an important channel to gather feedback and provide training for the new extreme products developed in the FWFA project.

5.2 Benefits to industry

- Relationships and contacts made through the FWFA CoP will flow into other projects and opportunities
- An increased understanding of agricultural user needs by CoP members, many of whom are in positions of influence
- Promotion of new extreme products to the broader agricultural industry from CoP members who have had been involved in the design, extension and training
- Increased uptake of seasonal prediction products of extreme events developed by the Bureau of Meteorology

6. Future research and recommendations

Increase interaction with end users. In addition to the consultation with IRG for feedback and idea generation it was at CoP meetings where producers came on board and spoke about how they are currently using seasonal climate forecasting/ managing for extreme events and where they see information gaps that was highly beneficial to the project. It is therefore strongly encouraged that any future projects have a high level of engagement with end users.

Exploit the experience of early users of new research/products as this would greatly aid in their uptake. The best 'training' session for the new extreme products was not just hearing about them but getting a firsthand account of how end users may use them. It is therefore encouraged that where appropriate early user experiences are capture and used in extension and training activities.

7. References

Not applicable as this was not a research project.