

# SOIL CRC

## FINAL PROJECT REPORT

Building farmer innovation capability

Project 1.4.002



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The author(s) confirm(s) that this document has been reviewed and approved by the project's steering committee and by its program leader. These reviewers evaluated its:

- originality
- methodology
- rigour
- compliance with ethical guidelines
- conclusions against results
- conformity with the principles of the [Australian Code for the Responsible Conduct of Research](#) (NHMRC 2007), and provided constructive feedback which was considered and addressed by the author(s).

## PROJECT PARTICIPANTS



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## EXECUTIVE SUMMARY

The current project's purpose was to commence the development of a partnership model designed to build innovation systems, capability and culture in farmer groups associated with soil stewardship.

The project constituted one iterative cycle of a Systems Innovation Intervention Framework (SIIF) previously used by Pitt and Nelle (2008) to develop an innovation partnership program targeted at large agribusinesses.

Applying the principles of Action Research methodology, the current project applied the Pitt and Nell (2008) partnership program approach to five participating farmer groups and through a cyclical process of 'plan, act, observe and reflect' revised and adapted the approach for further application (phase two).

## OBJECTIVES

Build innovation systems, capability and culture in participating farmer groups.

Develop an innovation strategy for each participating farmer group.

Implement, refine and adapt a partnership approach to increasing farmer group innovation capability associated with soil stewardship.

## RESULTS

Five 'Innovation Managers' (one from each farmer group) were trained formally and experientially in innovation and entrepreneurialism.

Innovation strategies were developed and documented for each of the five participating farmer groups.

The partnership approach was refined and adapted for phase two, based on key learnings from the current project.

## NEXT STEPS

At the time of writing the phase two had been approved by the Soil CRC for 18 months from 2020 – 2021.

## TIMING

Commencing July 2020

# INTRODUCTION

The overall purpose of the project was to implement, refine and adapt an Innovation Capability partnership model previously developed by Pitt & Nelle (2008) for large agribusiness, and build the innovation capability, systems and culture of farmers (initially through five farmer groups), the benefits of which would extend well beyond the life of the Soil CRC.

The current project provided the basis for subsequent revision of the initial (phase one) partnership program to be extended (phase two) to other farmer groups participating in the Soil CRC and answer more critical questions associated with reducing barriers to farmer adoption of technologies and practices.

Building the capability, systems and culture of traditional end users of research and development, mitigates the risk of failure of adoption of practices and technologies for improved soil management.

# METHODOLOGY

The methodology for the current project was based on Pitt and Nelle's (2008) Systems Innovation Intervention Framework (SIIF), a Participatory Action Research approach through which the innovation capability partnership program was reflexively refined and adapted as it was applied to the context of each participating farmer group and the group of participants as a whole.

SIIF more specifically involves iterative cycles of: planning and acting through mapping system failures and designing new interventions; observing through participant feedback and initial impacts; and reflecting on personal learning. These iterative cycles are usually conducted over several years. Given the time constraints of the current project (12 months), a single cycle (plan, act, observe, reflect) using a Participatory Action Research approach was used to adapt and refine the model developed by Pitt & Nelle (2008) for large agribusinesses, to the context of the five participating farmer groups. Learnings derived from this project formed the basis of a subsequent (phase two) approach to extending innovation capability to other Soil CRC end user participants.

The project supported five Innovation Managers (IM), one from each farmer group, in a part time capacity to review, design and document an innovation strategy to develop and imbed an innovation system and capability within their farmer group and/or farmer members businesses and simultaneously develop the organisational culture and capability required for continuous innovation. The five IM's were considered a 'cohort' for the purposes of peer to peer support, a factor identified as critical in the original Pitt & Nelle (2008) model. The five participating farmer groups were selected following a call for expressions of interest from farmer groups participating in the Soil CRC.

The five IMs were trained formally and experientially in innovation systems design and implementation by the project team. The IMs came together 4 times over the 12 months of the project.

The IMs met at the Charles Sturt University (CSU) AgriTech Incubator twice. The first time (inception meeting) introduced them to the basics of; developing and implementing innovation systems within organisations, commercialisation and entrepreneurship. Following the inception meeting, IMs reviewed their farmer groups organisational/management structure and capacity with respect to innovation. The second visit to the CSU AgriTech incubator

provided further training in innovation, a peer review of each farmer groups innovation system, a start-up bootcamp with “Farmers to Founders”, field visits (ideation), and a debrief session.

Two further field trips were held in conjunction with further training in innovation systems and peer review of the IMs farmer group strategy development.

The first field trip (4 days) was too Far North Queensland hosted by the HCPSL farmer group IM. The field trip included ‘ideation’ activities associated with soil management practices including site visits to innovative HCPLS farmers, research trials and farmer support service providers. The group was exposed to HCPSL organisational structure and management associated with innovation which helped inform the further development of each IM’s farmer group innovation strategy.

The second and final field trip and IM group meeting was to the EvokeAg agritech innovation conference (2 days) in Melbourne. The field trip exposed the IMs to the greater Australian and International Agritech Innovation ecosystem to aid in the final development of their farmer group innovation strategies. The IMs presented their farmer group innovation strategies for peer review.

Throughout the 12 months, individual mentoring support was provided by the project team to each IM working within their farmer group.

In addition to the part-time IM salary support, some funding was provided to support ideation activities being conducted within each farmer groups as designed by the innovation manager and project team.

## RESULTS

At each of the four meetings of the IM team, formal training on theories of innovation and entrepreneurialism, peer review, reflection and identification of key learnings were used to inform the further development of each IM’s farmer group innovation strategy and draw out key learnings regarding the project as whole, as an approach to improving farmer group innovation systems and capability. Four key findings were derived which shaped the nature of the approach to phase two of the Soil CRC innovation capability partnership program proposed for 2020 – 2021.

- 1) **Farmer group ideation:** Innovation systems typically comprise four distinct stages; 1) brainstorming or ‘ideation’, 2) project definition, design, evaluation and selection, 3) project implementation, and 4) scale up, commercialisation and adoption.

Following initial training, each of the IM’s reviewed their farmer groups operations with respect to the existence of any or all of a typical innovation systems stages.

All of the farmer groups had clear structures and processes to accommodate stages 2 and 3, and depending on the nature of their projects as commissioned by their various funders, stage 4. Most managed a portfolio of projects (stage 3) funded by external funding bodies. However, in four of the five farmer groups, ideation activities were limited to non-existent. It became apparent that in pursuit of funding to maintain a viable scale of operations, the farmer groups had to varying degrees become Research, Development or Extension service providers – effectively undertaking phase 3 or 4 of funding agencies innovation systems, rather than being facilitators of their own farmer led innovation. As a result, 4 of the 5 farmer group’s innovation strategies utilised funding from the current project to undertake ideation activities with their farmer group members to begin to build a culture of farmer lead innovation, and

identified strategies to build the ideation stage of their innovation system to be recurrent and ongoing.

- 2) ***Focussing innovation to priority areas:*** Pitt & Nelle's (2008) Innovation Capability partnership model upon which the current project was based, was developed to service large agribusiness which had a clear and direct motive to improve profitability, sustainability and shareholder value, and the shareholders were easily identifiable. Directing innovation towards these agribusinesses strategic business imperatives was facilitated by the agribusiness initiating ideation activities specific to priority areas of the businesses operations. In the one farmer group where numerous ideation activities involving its farmer members were already undertaken, some were funded externally with the ideation activity directed toward the funding body's strategic imperatives, e.g. soil and environmental management. Although funded by the Soil CRC, in the current project where the status of participating farmer groups innovation systems and capability was unknown, funding to farmer groups to develop their innovation systems and capability was not restricted to areas specific to soil stewardship, although much of the experiential learning activities were associated directly with soils. The opportunity to focus farmer led innovation towards specific areas of farm management (such as soil stewardship) could be facilitated by funding bodies directly supporting farmer group ideation activities earlier and independent of the commissioning of R&D projects.
- 3) ***Adoption of the innovation strategy:*** In Pitt & Nelle's (2008) Innovation Capability partnership model, IMs were full-time and half funded by the participating agribusiness. The partnerships were 3 to 5 years in duration and the agribusiness was expected to commit significant resources to the implementation of the innovation strategy over the life of the partnership. The innovation strategy was required to be approved at 12 months by the agribusinesses Chief Executive Officer for the partnership to continue. In the current project, the IM's position within their respective farmer groups varied. In two farmer groups, an external part-time position was appointed specific to the project, in one farmer group an existing senior manager was appointed to the role, in two groups existing staff operating at a project management level were appointed as IMs. The current project did not stipulate the innovation strategy be presented and adopted formally by the farmer group Executive and with no commitment of resources to the partnership beyond the 12 month project, there was no imperative for the farmer group Executive to do so. The senior manager IM did present and have adopted by their Board their innovation strategy and it was apparent their position supporting its implementation would be ongoing beyond the current project. One of the existing project manager IMs presented their strategy to their Board and although the outcome is unknown, with their position ongoing their training in innovations systems could be expected to continue to build the farmer groups innovation system and capability, as would the other existing project manager IM.
- 4) ***Building a culture conducive to innovation:*** Organisational culture conducive to innovation is built up over time as a result of taking [increasing] risks and investment in an environment of uncertainty and change. The 12 month duration of the current project did not enable any of the farmer groups to implement a full cycle of their innovation system and/or where ideation activities were undertaken (stage one) during the course of the project, progress these through to stage two (project definition, design, evaluation and selection).

# RECOMMENDATIONS

Methodologically, the current project constituted a single iterative cycle consistent with Pitt and Nelle's (2008) Systems Innovation Intervention Framework (SIIF). Each of the key learnings derived from the current project informed the development of the phase two Innovation Capability building partnership program, which at the time of writing had been approved for funding by the Soil CRC for 18 months from 2020 to 2021. The key adaptations applied to the phase two project from the key learnings from phase one were:

- 1) Farmer group innovation, in particular ideation activities could be directed towards soil stewardship by supporting partnerships in phase two, between Soil CRC participating farmer groups and research providers (or other businesses already engaged in the development and commercialisation of soil associated innovations) including those already participating in the Soil CRC.
- 2) Supporting farmer group and research provider partnerships would potentially engage the farmer group with the research provider at stage two or three of the farmer group innovation system increasing the likelihood of some full cycles of their innovation system to be completed within the life of the phase two project.
- 3) Similarly, farmer groups participating in phase one could also participate in phase two, providing continuity and building on their farmer group's innovation strategy, system and capability developed in phase one.
- 4) Phase two was extended to 18 months to enable longer engagement and support of the participating farmer group to increase the likelihood of undertaking full cycles of their innovation system and embedding a culture of innovation.
- 5) Peer to peer learning was a significant factor supporting the IM's professional development in phase one, in part facilitated by the range of IMs appointed with respect to their level of management and or experience in innovation systems. The inclusion of; 1) farmer groups from phase one, and 2) research providers, is expected to strengthen the peer to peer learning achieved through the phase two project.

# REFERENCE

Pitt, C., & Nelle, S. (2008). Applying a Sectoral System of Innovation (SSI) Approach to the Australian Red Meat Industry with Implications for Improving Innovation and Entrepreneurship in the Australian Agrifood Industry. *International Food and Agribusiness Management Review*, 11(4).

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