final report

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Coordination of participatory R&D for the Feedbase Investment Plan in Victoria

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Abstract

In 2013, MLA committed to using participatory R&D as a way of testing Feedbase Investment Plan (FIP) research, with on farm trials across the southern Feedbase. The MLA objective was to involve "leading" beef/sheep meat producers to speed up adoption of new research findings.

The Victorian participatory R&D team successfully identified, established, coordinated and monitored the implementation of seven Producer Research Site (PRS) projects. These seven Victorian producer groups involved 58 producers directly in the participatory R&D, adding value to the existing FIP research topics and contributing to new research findings. The PRS program also provided a platform for extension activities into the wider community.

Effective facilitation was a key ingredient in the success of the program. Facilitation successfully obtained agreement between researchers and producer groups on research activities that were issues to the group and would add value to the FIP research. Evaluation showed that producers involved in groups improved knowledge, confidence and skills in using the new research and were therefore more likely to adopt.

In addition, the Victorian participatory R&D team also established processes that enabled and ensured effective communication between producers and researchers, as well as providing strategic direction to the MLA FIP program manager, and assisted in the development of processes/products that allowed the delivery of the PRS program across the Southern Feedbase. These activities included coordination of a National PRS Producer's Symposium to harvest the new research for key extension messages to establish the FIP messages into the wider producer/adviser community.

Executive summary

Participatory R&D involves collaborative relationships between researchers and producers and has been found to be an effective way for shaping research and improved extension and adoption outcomes. In 2013, Meat and Livestock Australia (MLA) committed to participatory R&D as a way of testing Feedbase Investment Plan (FIP) research outcomes across the southern Feedbase. The objective was to involve "leading" beef and sheep meat producers in on farm trials, with the view to quicker adoption of the new research findings. Involving producers early in the research cycle was aimed at identifying how best the new research could fit into an existing farming system, and where required, modify to ensure its business suitability and on property adoption.

State-wide coordination and facilitation for participatory R&D was awarded to Southern Farming Systems (SFS). Cam Nicholson, a consultant with Nicon Rural Services, provided strategic direction and facilitation, and Lisa Miller, research and extension officer for SFS, assisted with the identification, establishment and running of the seven producer groups engaged in participatory R&D projects in Victoria. The Victorian participatory R&D team also assisted the MLA FIP program manager with the development of products and processes that allowed the delivery of the PRS program across the Southern Feedbase.

Effective facilitation was a key ingredient in the successfully obtained agreement between FIP researchers and producer groups on research activities. An objective of the participatory R&D program was for the producer groups to add value to the existing FIP research topics. This was achieved by running initial planning workshops to explore the FIP research topic area and find common ground between what the producers felt were issues that needed to be addressed and what value they could add to the FIP research project. Annual review workshops, another key feature of the program, provided an opportunity for researchers and producers to actively communicate and share interpretation (and feedback) of results.

In Victoria the seven selected producer groups involved 58 producers directly in the participatory R&D. Evaluation of this union showed that producers involved in the group improved knowledge, confidence and skills in using the technology. The PRS program provided a platform for extension activities, with a total of 1500 producers participating in extension activities through the running of 102 events and production of 63 extension products. Group research plans were developed and implemented in on-farm trials, with joint monitoring and reporting provided by researchers – and the participating producers. Key extension research messages were "harvested" through producer roundtable discussions, with an extension brief developed to include the design of value propositions to attract producer interest in the research. A national PRS producer symposium was held that involved 25 producers, 14 group PRS coordinators and 8 researchers who all contributed to further building of producer and researcher relationships and updating producers/researchers across PRS and associated FIP research results.

Arising from the Victorian coordination of PRS, there is now an established program of resources and processes available that can be used in future research projects, as well as learnings on important ingredients for successful future participatory R&D programs. All groups contributed to the new research and added value to the FIP topic areas. Key messages from the new research and PRS/ FIP extension messages has been used to develop project proposals to develop new (or rejuvenate existing) extension products and processes which will drive the expansion of FIP extension messages to the wider producer/adviser community.

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1 Background

A review of participatory research and development (R&D) (MLA Project Number – B.FDP.0008) highlighted key points related to the success of these sites, in shaping R&D and providing opportunities for the adoption of new technology by producers. Building on from this success, Participatory Research was identified as a worthwhile method to obtain southern beef and sheep producers input into MLA's Feedbase Investment Plan (FIP).

Participatory R&D involved a collaborative relationship between farmer groups and researchers which included on-farm trials to test early outcomes from FIP research. The FIP had been developed in response to the feedbase priorities identified in the National R D&E strategies for the beef and sheep meat industries. The FIP aims to enable pasture improvements that will add $25m per year on-farm value by 2020, with the quantity of meat produced per hectare increasing by 2.5%, with no decline in sustainability indicators.

Objectives for participatory R&D was to add value to seven research topics through the input of leading producers throughout the research and development phase and with the ultimate goal of accelerating the adoption of project outcomes.

This project coordinated Producer Research and Development for Victoria as part of the Feedbase Investment Plan (FIP) and the project provided assistance to the MLA project manager with national coordination of the Participatory Research program. Roll out of the new program occurred from June 2013 until December 2017 and as it was a new approach; statewide facilitators played an important role in assisting the Program manager develop resources and processes to implement the project. During the course of the project the name of the program was changed from Participatory Research Sites to Producer Research Sites (PRS).

The Producer R&D goal was achieved through effective facilitation by coordinators between researchers and leading producers (mainly in existing producer groups) providing benefit for the research activity and for farm businesses. In this project Cam Nicholson, Nicon Rural Services, Agricultural Consultant, provided expertise in facilitation and strategic direction for the project, and Lisa Miller, SFS research and extension officer, provided national coordination and day to day running of the seven Victorian groups.

For the purposes of the FIP, leading producers included producers who are "information seeking" and wish to engage in research at an early stage. The Producer R&D sites had an element of risk because the activities were expected to generate new information rather than confirming known research outcomes, thus quite different from MLA's Producer Demonstration Sites (PDS). This process involved joint planning, shared learning and shared interpretation of results between the producer group and the researchers. Decisions regarding the research questions within the nominated topic and rigour of trial methodology required agreement between producers and researchers.

2 Project objectives

This project forms part of MLA's Producer Research Site program that is part of the southern Feedbase Investment Plan.

The project objectives were to:

1. As part of a National call managed by MLA, identify, coordinate and liaise with farmer groups in Victoria who wish to participate in Participatory R&D projects
2. Facilitate seven workshops with relevant farmer groups and FIP researchers by November 2014 as part of the establishment of Participatory R&D sites
3. Establish, monitor, evaluate and report on seven Participatory R&D sites in operation throughout the agro-ecological zones of Victoria
4. Assist the MLA project manager with national coordination of the Participatory Research program
5. Organise, in collaboration with MLA, a national event for farmers, facilitators and researchers which allow for networking between farmers from different Participatory R&D sites.

3 Methodology

3.1 Identify, coordinate and liaise with farmer groups

This objective was about connecting with farmer groups with the purpose of recruiting suitable groups in the first phase of the project. This involved the following steps.

Developing project information for producers

Following the first statewide co-ordinator's meeting in Sydney in June 2013, one line value propositions for the different research topics that would appeal to producers were developed by Cam Nicholson and a document drafted called "Participatory Research & Development Project - Producer groups shaping pasture research." The document outlined the background of the PRS program, its objectives, research topics and contact details for EOI forms. Other statewide co-ordinators contributed by developing producer information for different topics and working with the researchers to improve readability. The Victorian PRS coordinators wrote background information on soil borne diseases and pasture establishment and persistence.

The value propositions were used for media releases by MLA to advertise the project through Friday feedback and Rural Press in August 2013. The newly developed producer pack of information containing the background information on the Participatory Research & Development Project and EOI forms were then sent to interested producer groups and coordinators.

Seeking Expressions of Interest

Information packs were sent to 28 groups and some established group co-ordinators. Presentations of the program were also given at the request of groups which included SFS and Perennial Pasture Systems group, which both groups ended up successfully applying for sites.

Following closure of the EOI, DEDJTR (Department of Economic Development, Jobs, Transport and Resources) asked if they could submit EOI on behalf of groups which were accepted.

Group Selection

Groups were selected based on a ranking system that was developed by Victorian coordinators to rank the producer groups against selection criteria (Table 1).

From this ranking system, groups that had the highest scores were put forward to MLA and researchers for possible selection. The success of the PRS program relied on involving good producer groups and so the groups were chosen regardless of their topic of choice. A number of groups also expressed interest in multiple topics.

All high ranking state groups were compiled into a spreadsheet (Table 2) and sent to the researchers who had the final say in which groups they would like to support. For example there was a group in Victoria that researchers in the new legume project could not support due to unsuitable alkaline soil types for the legumes of interest. However, the tropical pastures project in Victoria was agreed to be supported by Paul Sanford, researcher from WA even though the FIP research project on tropical was based in WA and NSW.

Based on this process seven groups were chosen which addressed the following topics.

- Perennial Pasture Systems – Establishment and persistence
- South West Prime lamb group - Establishment and persistence
- Central Ranges Grassland Society branch – Phosphorus efficiency/Soil borne diseases
- SFS Hamilton branch/ Cavendish BWBL group – Dual purpose crops
- Kelly gang BWBL group – Use of optical sensors to measure biomass
- Virtual Group (group created from BWBL groups under Meridian Ag coordination – Use of optical sensors to measure biomass
- SFS Gippsland branch/BetterBeef group – Tropical pasture management

These groups were notified of their success and the topic they were selected for. Unsuccessful groups were also notified offered feedback as to why their application was unsuccessful.

3.2 Facilitation of seven workshops by November 2014

3.2.1 Process used in the MLA participatory R&D site planning workshop

The objectives of the initial planning workshop were to:

1. To scope an agreement between producers and researchers on participatory R&D activities. This required:
    a. Researchers to understand the producer questions around the chosen topic
    b. Producers to understand the cutting edge research that would be conducted with MLA funding in this topic
    c. Agreement on what research questions to investigate, how these questions would be answered and who would undertake the measurement and analysis.

2. To complete the baseline survey (for evaluation purposes).

Workshop dates were arranged with the producer group coordinator and researcher with the following specifications made:

- request that a minimum of seven producers be in attendance.

- producer group organise a time and location that best suits them so that producers can attend.

The process used in the two to three hour workshop is outlined below:

Introductions – *Cam Nicholson, PRS facilitator*
This agenda item was designed for everyone to feel comfortable about the workshop knowing who was there and what the intended outcome of the day was.

Background Information – *Lisa Miller, PRS Coordinator*
PowerPoint presentation developed that was checked by MLA which covered the following points:

- Summary of what is the MLA FIP, MLA funded FIP research projects and objectives of participatory R&D projects.
- How the participatory R&D projects were envisaged to operate. (The roles & responsibilities of the producers, researcher and state coordinator).
- What other participatory producer groups were doing.
- What were the principles this collaboration would follow. (Rules of engagement).
- Baseline Survey - producers completed survey statistics.

Producer expectations – *Cam Nicholson, PRS Facilitator*
Cam Nicholson undertook a facilitated discussion based around using the following questions to explore the topic starting from a broad perspective and narrowing down the focus.

- What is your understanding of the topic (what the topic is about)?
- Why this topic was chosen (Motivation e.g. - relevance, fit and opportunity in the farming system)?
- What is your current thinking about the practice (attitude)?
- What are the unknowns or uncertainties about the practice (knowledge gaps)?
- What skills and expertise are required to successfully adopt the practice and which do we already have (ability/confidence)?
- What tools are required to successfully adopt the practice and which do we already have (technologies)?
- What do you currently see as potential risks with adopting the practice (risk)?

It was decided to have this section before the researcher's presentation so as not to influence the producers and to provide the researcher with an understanding of the topic from a producer's perspective. Producer's answers were recorded on butcher's papers so that the group could build on what was written.

Researcher Presentation – *Researcher*
The researcher assigned to support the group gave a 30 minute presentation of the research work they were undertaking.

- Presentation on their MLA FIP research project.
- What research questions they are addressing and why?
- Where the research was up to and presents any relevant findings to date.
- Summarise any other relevant MLA research within their national team.
- Answer questions from producers.

DEDJTR offer – Martin Dunstan, Farming Systems Demonstration leader
At the workshops, Martin Dunstan spoke to the producer group with an offer of additional funding if the group wanted to increase the scope of the project.

Reflection on the producer expectations and researcher presentation – *Cam Nicholson PRS Facilitator*

Cam Nicholson facilitated discussion to get producers and researchers to agree on the research question, what the project might measure and who could be involved to help develop up a project plan for MLA approval. Key questions asked included:

- What were key insights from the presentation?
- Where was there commonality in the reasons for doing it, the thinking, knowledge and expertise about how to do it, the potential benefits and risks etc.?
- Where were the gaps that need addressing? (Frame the agreed research questions)
- How could we address these gaps? What are some possible approaches? (Frame the possible methods).
- What do we need to measure to fill the gaps? I.e. What information would convince you that it could work for you? (Frame what needs to be measured)
- Who could undertake these measurements? (Frame who would take responsibility to do what.)

Wrap up – *Lisa Miller PRS Coordinator*

Lisa Miller concluded the session with the key points:

- Reiterating what was decided
- MLA PRS project plan application would be filled out by the group coordinator and state coordinator.
- Initial workshop notes would be written up and circulated to the group and researcher.

3.2.2 Baseline survey questions

Cam Nicholson designed baseline survey questions for the PRS program to help collect quantitative data on understanding producers involved in the project and qualitative data on their knowledge, skills and attitude towards the research topic and their attitudes towards MLA. These questions were planned to be repeated at the final review and are shown below:

Farm statistics

1. Area farmed (ha) owned and leased:
2. Enterprise mix (ha): Cropping, Grazing:
3. Livestock numbers: Adult sheep, Lambs / hoggets (< 2 years old), Adult cattle, Calves /weaners (< 2 years old):

Research project questions (0 = no potential, 5 = great potential)

4. How would you rate the potential of (INSERT THE RESEARCH IDEA) to improve the productivity of your farming business?
5. How would you rate your current knowledge about (INSERT THE RESEARCH IDEA) and its place in your farming business?
6. How would you rate your skills and expertise in adopting (INSERT RESEARCH IDEA) in your farming business?
7. How would you rate your confidence in adopting (INSERT THE RESEARCH IDEA) in your farming business?

Program questions

8. How applicable is current MLA research (as outlined in the Feed Investment Plan, FIP) to your farming business?
9. How involved have you been in the current research and development projects funded by MLA?
10. How would you rate your influence on research projects funded by MLA?

3.3 Establish, monitor, evaluate and report on seven PRS sites

3.3.1 Project plans and implementation

Following the first workshop, groups were then required to complete formal applications to MLA and fill out Part 1 Participatory R&D group information and Part 2. Participatory R&D Project plan. From this information, MLA drew up contracts with each group. The PRS coordinator took a lead role in writing Part 2 with the assistance of each group's coordinator. All project plans were submitted between January and April 2014.

The dual purpose crop group started implementing their plan in early January 2014 to capture 2013 spring sown canola production and the last group to start was in Gippsland with the preparation and sowing of tropical pastures in spring.

3.3.2 Annual and final reviews with researcher

In each year of the project, research results were shared with the producer group and researcher in a 2 to 3 hour workshop. Objectives would change each year depending on the stage of the project. Appendices 9.1, 9.2 and 9.3 contain workshop objectives and reflection questions.

The following format was generally followed for each review:

- Introductions – *Producer Group Co-ordinator*
- Researcher Presentation – *Researcher*
- Producer group update & results – *Producer Group Co-ordinator*
- Reflection on the projects – *Facilitated by Lisa Miller, PRS coordinator*
- Other upcoming MLA events– *Lisa Miller, PRS Group Coordinator*
- Wrap up – *Lisa Miller PRS Group Coordinator*

3.3.3 Reporting, milestones and final reports

The PRS coordinator liaised with groups to complete their milestone reports on time, outlined expectations of what they should include and proof read them prior to submission. Each group submitted two milestone reports each year of the project following planned major work periods.

In addition to annual reviews, groups often contained sub committees to discuss project plans and the PRS co-ordinator was invited to and took part in the following activities:

- PPS group – two phone conferences, three meetings (one with regards to planning, two in relation to writing final report), 2017 conference
- SWPL – one phone conference , three additional project meetings, one additional workshop
- CRGSSA – one field day, one pasture update

- SFS/Cavendish BWBL group – one field day
- SFS/BB Gippsland – one research tour of sites with Paul Sanford

The final report template was first sent in October 2016 to give groups plenty of warnings that the reports were due in 2017. Templates for metadata collection and accompanying information were also sent to groups.

3.3.4 PRS group extension products and outputs

Although the project was mainly research based, there was a component of extension where results could be extended given researcher agreement.

The PRS co-ordinator worked with groups and MLA to assist in the development of a number of extension products aimed at increasing awareness, these included:

- seven Snapshots – one page fact sheets that were compiled in 2014 and updated in 2017.
- six Victorian PRS topic media releases with their value proposition – written by Cam Nicholson and checked by PRS coordinator.
- MLA Friday feedback articles
    - Producers and researchers unite to improve the estimation of pasture mass 2015
    - West meets east to boost summer productivity in Gippsland 2015
    - Paul Mibus – A view from my veranda 2015
    - Persistent ryegrass pastures 2017
    - Follow the farmer – nominated farmers in 2017
- Gate signs for four groups – organised with group, sign writer and DEDTJR.

3.4 Assistance with national co-ordination

In the original 2013 contract, national coordination was not originally contracted, but it became apparent the FIP program leader needed further assistance to set up the program. Lisa Miller, SFS unofficially took on this role for the establishment phase of the project and then the role was included in a variation to the contract in 2016.

There were a number of processes and resources that the Victorian PRS coordinators assisted in the development with MLA which are shown in Table 10. One process initiated and developed was as an objective method for selecting groups. The selection criteria for groups are shown in Table 1.

One of the processes that have not been previously outlined in this report or initially included in the coordinator's project specifications for was PRS extension extraction of key research messages and development of extension products. The Victorian coordinators developed objectives for this process which could then be applied to other states. These objectives included to:

1. Use producer round table discussions to:
    - Identify what key project findings are suitable for extension purposes.
    - Develop extension messages by understanding audience, WIFM, adoption barriers.
    - Identify effective extension materials/activities for delivery of messages.
2. Use information to produce a draft Victorian extension brief.

This statewide extraction then evolved to include a Southern Feedbase extension brief and to think broader than just FIP research topics.

3.4.1 Round table discussions

The coordinator arranged with each group coordinator to hold a meeting which would involve themselves, two producers and DEDJTR staff member to discuss the project and potential extension messages. Seven meetings took place from December 2016 until February 2017. All meetings were face to face except the SFS/BB Gippsland group which requested a phone conference. The biomass group information was combined into one topic and took place after or as part of the annual reviews.

In preparation for the meeting, the PRS coordinator collected relevant resources (PRS notes, annual reviews, milestone reports) to pre-answer questions which could be tested with the group and identify specific group issues.

The roundtable discussions took approximately two hours to complete and were a facilitated discussion led by the PRS coordinator who also recorded key points on butcher's paper. Key questions used in this process were developed with the decision making cycle in mind. Questions 1, 2 and 3 collected information; Questions 4 and 5 were designed to make sense of the information and narrow the perspective and Question 6 was to decide on what actions to take.

1. Describe the practice or action the research findings have led to.

   Examples: Early sowing of canola with winter habit is providing…… or Factors that appear to influence phalaris persistence …….

2. What are the key research findings we want farmers to adopt?
   Taken from PRS Notes and test with group to check we have it right and limit to about 3.

3. What is in it for the PRS group farmer to adopt?
   What's in it for the neighbour (a different target audience) to adopt?
   Check we have it right for two different audiences. The value proposition is about what the research offers so they can meet their aspirations.

4. What are knowledge, skills, attitude and capacity does someone need to successfully adopt the practices on their farm?

5. What needs to be done to address the knowledge, skills, capacity (potential barriers to adoption) in Question 4?

   Test with the two target audiences, PRS type farmers who are currently involved and their thoughts on audiences not as interested.

6. What are the actionable extension messages and most effective extension methods/materials to result in adoption of the practice/action?
   This was the group's perspective and reflected those involved in the meeting.

The PRS coordinator wrote up the meeting notes and circulated the notes to the group. These notes were then summarised into one document which were presented at the Victorian extension extraction meeting.

3.4.2 Interpretation of extraction material and development of extension brief

In mid-February 2017, Irene Sobotta (former MLA FIP manager), Cam Nicholson, Lisa Miller and DEDJTR representatives, Martin Dunstan and Bindi Hunter, met at Attwood for a two day workshop. The objectives of this workshop were to develop an extension brief that outlines regional messages and identifies extension methods/products for different market segments that will lead to adoption.

The PRS coordinator provided the team with pre-reading including the Producer Group's extension extraction notes and information on temperament typing and value propositions.

The objectives of the extension brief development was to interpret information collected from groups from roundtable discussions and produce a draft extension brief that:

- Outlined value propositions.
- Identified extension methods/products for different market segments that will lead to adoption.
- Outlined how we might achieve it.
- Identified who might do it.

The PRS coordinator chaired the meeting. The following process was used.

<u>Temperament discussion and value proposition – Cam</u>
Cam Nicholson gave a quick overview of the four producer temperament types and recapped on what a value proposition was.

<u>Presentation of research topic quantitative/qualitative information</u>
A summary document was presented on each research topic which contained an overview of results (facts) and enough detail/evidence for the team to get an understanding of the benefits, barriers and mindsets. It captured the facts and figures plus also the farmer reactions and included different sources of information including producer group roundtable discussions, FIP producer workshop in June and from data collected at annual reviews.

The PRS coordinator summarised what all the data was saying, identified key points of content, where there was commonality, conflict and areas of concern like mindset barriers and drew attention to these highlighted in the document.

The group was also asked to contribute any information that added to the story. For example: DEDJTR complementary work or findings.

Step 2: Made sense of the data – Group discussion

The group worked through each topic and:

- Identified what the group thought was the value proposition or hook for the producer (WIFM).
- Decided what products/activities suited different temperament types.

Step 3: Decided which options to pursue - Group discussion

The group then decided what activities/products that were worth pursuing and identified the following actions:

- Assigned names and time frames.
- Others who should be involved.
- Developed potential approach.
- How we might pilot test ideas.

The workshop results were developed into an extension brief and circulated to the group members.

3.4.3 National extension extraction meeting

It was decided that a Southern Feedbase extension brief needed to be developed and Mel Rae, a Senior Consultant with Macquarie Franklin, took the lead role in developing the agenda for the national extension workshop. The Victorian PRS coordinator and facilitator contributed to the process at the two day workshop held in Sydney in the following ways:

- Provided a draft agenda process based on the Victorian extension workshop.
- Took part in a phone conference with Irene Sobotta, Mel Rae to discuss the workshop.
- Contributed to a presentation developed by Cat Nichols, Communication consultant on extension resources and gaps.
- Contributed to document developed by Cat Nichols, "I want to… " summary of tips, tools, resources & opportunities and links to temperament types
- Sent Victorian snapshots of each group for circulation.
- Developed up Victorian one page summary sheets for 6 research topics and presented these at the meeting as they contained value propositions.
- Cam Nicholson assisted in facilitation in the second day.
- Victorian PRS coordinator wrote up butcher's paper notes from facilitated Day 2 session.

From this workshop a number of project concepts were then developed for MLA consideration.

Table 1. Ranking system used for groups against selection criteria

Group Name	Addressed EOI, Outlined priority areas clearly, have thought about topic & have strong focus area	Demon-stration of individual &/or the group's ability to be tactical strategic & innovative	How does the project add value to MLA project area	Engage-ment process for enabling access & involve-ment of the broader industry to the project	Group producers demonstrate commit-ment and approach to being effectively engaged in the project	Total rank	Record if strongly farmer written and driven OR. Not so Farmer driven	Likeli-ness of being farmer driven in 3 years	Confidence level that we have innovative leading producers involved	Has the group been formed to look and research this topic?	Topic most likely to go ahead with this group	Com-ments
	Rank 1-5 (with 5 highest, 1 lowest)	*Rank 1-5*	*Rank 1-5*	*Rank 1-5*	*Rank 1-5*		*Farmer driven or Not So*	*High, Medium or Low*	*High, Medium or Low*	*Yes or No*		

Table 2. Information relevant researchers received

Group Name	Researcher	Topic Priority given in EOI	State	MLA Region	Location	Specific issue of interest	Group Admin Contact	Producer Contact	Member-ship base	Coordinator assessment regarding likelihood of project being 'farmer- driven' in 3 years' time -	Coordinator comment (include reason for group support)
										High, Medium or Low	

3.5 Organise with MLA a national event

In early 2016 a regional event was planned where Victorian groups would come together for a networking event and to learn from each other. This concept was expanded to involve other States and a one day workshop was held followed by a dinner in June 2016. This event was originally planned to precede a National FIP Researcher forum and transfer producer input on possible knowledge gaps as well as PRS results into this event, but this event was cancelled and rescheduled for November 2016.

The objectives developed by Victorian PRS coordinators and MLA were:

- For researchers to update producers on their most recent findings from their feedbase topics.
- For PRS groups to provide an update on their project results to other producers, researchers and MLA.
- To commence the 'harvesting' of insights from the PRS work, primarily the
    - Implications to a farming system (pros and cons, to build the extension story).
    - Possible knowledge gaps (to feed into a research symposium futuring exercise).
- To continue building a collegiate producer / researcher team built on information sharing and mutual respect.

3.5.1 Workshop methodology

Cam Nicholson developed a workshop agenda with input from Irene Sobotta and, MLA, PRS coordinator and facilitated the workshop.

Background pre-reading
Each producer group was asked to fill out a one page Project template designed by Victorian PRS Coordinators. Template is shown in appendix 9.4.

Researcher presentations
Researchers gave a 10 min researcher presentation focussing on:

a. What did we do (brief)
b. How did we do it (brief)
c. What are the results (main focus)

There were 7 topic areas across 3 themes which were presented by FIP researchers.

Mixed farming

1. Alternative legumes in mixed farming – Belinda Hackney, Charles Sturt University
2. Dual purpose crops – Cesar Pinares, CSIRO

Sub-tropical pastures

1. Sub-tropical pastures – Paul Sanford, DAFWA

Temperate pasture systems

2. Pasture persistence and establishment – Lisa Miller, SFS (Kevin Smith, University of Melbourne was unavailable)
3. Phosphorous efficient legume systems – Richard Simpson, CSIRO
4. Soil borne root disease – Martin Barbetti, University of WA
5. Real time biomass- Mark Trotter, UNE

Produce panel discussions

After the presentation one producer from each group working on this topic was asked to come forward to participate in a facilitated panel discussion to seek clarification and to add farming system context to what the researchers had presented.

The groups had an opportunity to prepare the answers to the questions beforehand in discussion with their groups. The facilitator first asked the panel for clarification on anything the researchers had said and then moved to the following questions. Responses were captured on butcher's paper:

a. What additional results have come from your PRS work?
b. What is the relevance / fit / implications of this work for your farm (how significant, where are the benefits etc.)?
c. What might be some of the pitfalls / challenges producers should be aware of with this idea (to identify the down side / risks / skill required)?
d. What (if anything) is required in the future to further develop this idea (new knowledge, product development, skills development, testing in other environments etc.)?

It was planned if there was time left the facilitator would ask for inputs from other producers on the floor around relevant/fit, pitfalls/challenges and future requirements. Time was not available and so the facilitator invited others to write the inputs on the bottom of the butcher's paper at the next break.

At the completion of topic presentations and panel discussions an evaluation process took place of the PRS workshop and the PRS program. Dinner was held that night which added further networking opportunities.

3.5.2 PRS workshop evaluation

For the PRS workshop a simple evaluation was developed with participants scoring their satisfaction from 1 to 5 (5 having the highest satisfaction and 1 the lowest) by placing a sticker dot on a scatter graph. The X axis of the graph was the opportunity to explore each research area and the Y axis was to learn about the latest research findings (Fig. 1).

A midterm evaluation of how the process of the PRS program was going was completed at the workshop. The evaluation focused on what value the PRS added to MLA investment and the processes about how it does that and what can be done to improve desirable outcomes. The evaluation focussed on only one of the project objectives which were for the PRS to add value to the existing FIP new research.

Eight groups of participants were given butcher's paper to answer three questions. One group contained researchers and seven groups contained producers and group co-ordinators that were working on the same FIP topic. Each group had four to seven members. The questions asked are shown below:

1. What value has PRS added value to the MLA research investment? Provide tangible examples.
2. How has the Producer R&D program added value to the MLA research investment?
3. If you could add one thing to the Producer R&D program, what would that be?

4 Results

4.1 Identify, coordinate and liaise with farmer groups

As part of the national call for PRS projects, 19 Victorian group applications were received. Seven Victorian groups were selected following ranking against selection criteria and consultation with researchers. Originally the number of PRS groups planned for Victoria was six, but seven very good producer groups were chosen due to a NSW shortfall in the proposed ten applications. This was primarily due to researcher support for these groups.

Results from the national call up of projects were:

- The Victorian coordinator initiated contact with 28 different producer group coordinators and had repeat follow up with eight different coordinators.
- Eleven additional enquiries were received from MLA advertising via Friday Feedback and via personal communication from Linda Hygate, former FIP program manager.
- The most interest and enquires was in the Dual Purpose crop topic which was advertised as tactics for grazing crops.
- The majority of applications were made by paid co-ordinators of groups (ten), Department of Agriculture staff (five), consultants (three) and one producer.

Table 3. Type of groups that applied

Type of group & their interest	**Who applied**	**Numbers**
Grassland Society Branch	Consultant	1
Consultancy groups	Consultants	2
Better Beef Group	DEDJTR, Producer	3
BestWool/BestLamb Group	Coordinator, DEDJTR	3
Lamb production groups	Coordinator	2
Mixed farming groups, emphasis crops	Coordinator	5
Landcare groups	Coordinator	1
Grazing systems group/Grazing group	Coordinator, DEDJTR	2
Total		19

Reasons collected as to why groups may not have applied were collated during discussions and were found to be primarily administrative constraints or their area of interest was not included:

<u>Administrative reasons given for not submitting an EOI</u>

- There was interest from a consultancy group in the research topic of measuring biomass which they felt that was a critical area but did not apply as they felt their costs could not be covered.
- A cropping board had concerns that only a few members get the benefits by being involved in the project and they suggested that for projects they should receive funding to extend the project back to the wider group which had happed with Grain and Graze.
- GSSA member – bad timing with Grassland Society as just changed over central committee and were reorganising structures.
- Beef Cattle Club – concerned about the level of work. “Have done PDS stuff before and always more work than you anticipate, especially from an admin point of view.”

- Producer from Streatham – was concerned about committing due to potential time involved and was already involved in committees.

Topic areas the groups were interested in

New legumes

- Mallee Sustainable Farming group were interested if the soil borne diseases could extend to looking at medics.
- Persistence of sub clover in Gippsland with false breaks. Also seemed an issue near Stawell and looking at alternative legumes for those areas.

Dual purpose crops

- Oats as a dual purpose crops.
- Summer growing wheats.
- Herbicide resistance in certified grass seed
- Pasture rotations to control ryegrass.

Persistence of pastures

- Endophyte research for persistence but also looking at potential penalties for animal production. Also interested in quantifying the animal production benefits of reducing carcass damage by from having improved pastures versus unimproved pastures (barley grass, erodium).

Phosphorus efficiency

- Tapping into fixed P.

4.2 Facilitation of seven workshops by November 2014

4.2.1 Workshop results

All seven workshops were successfully completed between December 2013 and April 2014. Agreements were scoped with between the researcher and the producer group and baseline surveys completed (Table 5). Research questions and basic methodology and location of sites was determined which enabled program plans to be commenced and further developed. Notes were compiled for each workshop as a record which was used by the producer groups in writing PRS final reports.

One of the main objectives of the PRS process was for the producer group to add value to the FIP research project. Table 4 shows the agreed value that the producer group could assist the researcher with.

Table 4. Agreed value for FIP research project between the researcher and each group

PRS Group	**Main agreed value for the FIP research project between the researcher and the group**
Perennial Pasture Systems	Identify key reasons why phalaris persists/does not persist
South West Prime lamb group	Testing interventions to prolong the life of perennial ryegrass
Central Ranges Grassland Society branch	Testing production/adaptation of phosphorus efficient serradellas
SFS Hamilton branch & Cavendish BWBL group	Spring sown canola production
Kelly gang BWBL group	Calibration and testing of GreenSeeker
Virtual Group	Calibration and testing of GreenSeeker
SFS Gippsland branch & BetterBeef group	Feed quality tests of tropical grasses

4.2.2 Baseline survey results

Baseline survey results collected in 2014 are shown in Tables 5 and 6. They showed that the producers thought the research had potential and they had some knowledge on the topic. Producer groups mainly rated their previous involvement or influence with MLA as reasonably low.

Table 5. Farm statistic results collected from different PRS groups in 2014.

Groups	**Farm Statistics**		**Enterprise Mix**		**Livestock Numbers**				
	Number of producers	**Area farmed**	**Cropping**	**Grazing**	**Adult sheep**	**Lambs, hoggets**	**Adult cattle**	**Calves, weaners**	**Total No**
SFS/BWBL	12	13398	2550	10590	65550	29920	170	900	96540
Kelly gang	7	6216	0	6216	33500	15800	1550	1550	52400
CR GSSA	8	4398	55	4327	15750	6545	740	960	23995
PPS	9	10580	5170	5410	26100	15820	92	40	42052
SWPL	8	5912	400	5382	27600	8850	340	968	37758
SFS/BB	7	38600	7750	24700	27800	6450	4324	3510	42084
Virtual	7	11820	1900	9520	20400	12900	3260	1280	37840
Total	58	90,924	17,825	66,145	21,6700	96,285	10,476	9,208	332,669

Table 6. Baseline survey results collected from different PRS groups in 2014.

Groups	Research Project Questions				Program MLA Questions		
	Potential Q4	Knowledge Q5	Skills Q6	Confidence Q7	Applicability Q8	Involved Q9	Influence Q10
SFS/BWBL	3.4	1.8	-	2.9	3.6	1.7	1.2
Kelly gang	4.1	0.8	0.9	2.6	3.8	1.6	1.8
CR GSSA	4.1	2.1	2.1	2.4	3.0	1.1	0.9
PPS	3.3	3.2	3.2	3.7	3.8	2.6	2.1
SWPL	3.7	3.3	2.9	3.3	3.1	1.9	2.6
SFS/BB	3.9	2.3	2.7	3.3	3.2	0.4	0.8
Virtual	4.0	1.8	2.0	3.1	4.0	2.1	1.7
Average	3.8	2.2	2.3	3.0	3.5	1.6	1.6

These questions were also repeated at the final review except for the farm statistics. Only three groups completed the final survey due to either running out of time to complete or insufficient numbers at the workshop to compare to the initial survey.

Table 7. Final survey responses from 22 producers across three different groups in 2017.

Groups	Research Project Questions				Program MLA Questions		
	Potential Q4	Knowledge Q5	Skills Q6	Confidence Q7	Applicability Q8	Involved Q9	Influence Q10
SFS/BWBL	3.0	3.8		3.3	3.4	3.1	2.0
PPS	4.3	4.1	4.1	4.4	4.1	3.1	3.0
SWPL	4.0	3.6	3.5	3.9	4.3	2.3	2.5
Average	3.8	3.9	3.8	3.9	3.9	2.8	2.5

4.3 Establish, monitor, evaluate and report on seven PRS sites

By May 2014, 58 producers were actively engaged in PRS sites across seven different groups. All project applications (Part 1 and Part 2) were completed between January and August 2014 and used by MLA to develop contracts with producer groups. The SWPL group further amended their plans following further thought after a second producer workshop. Most groups began implementation of their plans in 2014.

The main issues that interfered with achieving successful research results were with groups that had to establish pasture. Both CRGSSA and SFS/BB Gippsland groups struggled with establishment of pastures at their research sites with prior weed control being the main reason. Timelines prevented weed seed reduction from occurring in the year prior to establishment and to reduce risk of failure, pastures should have followed a summer or winter crop where weed seed pressure would have been depleted. There were also dry conditions in 2014 winter and spring which delayed the start of the SWPL group project.

In 2015 and 2016 annual review workshops were held with all groups with researchers present. At the final review, PPS group, CRGSSA and SFS/BB groups were unable to secure researcher attendance due to last minute illness, unavailability due to overseas travel or workloads.

Table 8. Attendance of producers and researchers at workshops and annual reviews over time.

Group	**2014**	**2015**	**2016**	**2017**
SFS/BWBL				
No of producers	12	12	4	6
Researcher attended	Yes	Yes	Yes	No
Kelly gang				
No of producers	7	7	5	8
Researcher attended	Yes	Yes	Yes	Yes
CR GSSA				
No of producers	8	7	35 field day	30 seminar
Researcher attended	Yes	Yes	Yes	No
PPS				
No of producers	9	16	16	16
Researcher attended	Yes	Yes	Yes	No
SWPL				
No of producers	8	Not held due to	18	16
Researcher attended	Yes	no results	yes	Yes
SFS/BB				
No of producers	7	7	5	2
Researcher attended	Yes	Yes (via phone)	Yes	Yes (via phone)
Virtual				
No of producers	7	3	1	0
Researcher attended	Yes	Yes	Yes	Yes

The number of producers engaged through the PRS is likely to approximately 1500 or 65% of the total figures recorded over 102 events. Media articles, Facebook sites, project updates, snapshots totalled 63 across the four years of the project.

Table 9. Attendance numbers at events and numbers of extension days run and extension products produced

Groups	Number at event	Number of field days/seminars	Number of extension products produced
SFS/BWBL	388	15	23
Kelly gang	124	5	4
CR GSSA	435	15	5
PPS	746	29	8
SWPL	238	13	6
SFS/BB	312	19	10
Virtual	53	6	7
Total	2,296	102	63

Each group submitted approximately two milestone reports due each year of the project following planned major work periods.

All final reports were submitted from April until December 2017. The majority of final reports were late except for PPS and Virtual group mainly due to the underestimation of the work involved by groups to complete them. Groups would ask for an extension which was given but then they didn't meet the extension timeline.

4.4 Assistance with national co-ordination

There were a number of processes and resources that needed to be developed for the new PRS program. The Victorian PRS coordinator and facilitator assisted with a number of processes, either providing strategic direction, developing products or processes and communicating resources with other statewide coordinators and MLA. These are outlined in Table 10.

Table 10. Products and processes that had a national focus which Victorian PRS coordinators assisted MLA with.

Product Type/Process	**Products/processes that Victorian PRS Coordinator & Facilitator contributed to the national programs.**
Project applications	Developed EOI for PRS groups to register their interest Adapted Part 1 Participatory R&D group information for PRS application Designed Part 2. Participatory R&D Project plan for project application
Group selection	Developed ranking system for objective selection of groups Collation of national group selections for researchers to select groups Point of contact for researchers to feedback group selection
Initial program workshop	Developed PRS program overview PowerPoint presentation Designed initial workshop process Developed baseline survey questions
Evaluation	Mid-term design and review of PRS program at the National event
Extension extraction	Designed roundtable discussion process Designed Victorian group extraction process Assisted with national workshop development
Final reviews	Facilitated the final reviews for two SA groups in the absence of a contracted coordinator
Final report	Adapted final report template for PRS process Assisted with editing and comments of reports for two SA groups in the absence of a contracted coordinator
Meta Data	Adapted an example Metadata spreadsheet for PRS groups. Provided input into guidelines for R&D metadata collection
Sharing of resources	All resources mentioned above were shared with statewide co-ordinators and feedback requested so that documents could be updated.
Communication role	Link for the researchers and statewide coordinators in the initial setting up phase of the project.

4.5 Organise with MLA a national event

The Producer Research Site workshop was held on 1 June 2016 at Attwood, Victoria. The workshop was attended by:

- 25 producers
- 14 PRS group co-ordinators
- 2 MLA project leaders (Irene Sobotta and Cameron Allen)
- 8 researchers representing 6 FIP research topics
- 4 statewide PRS co-ordinators (Lisa Miller, Doug Alcock, Dee Heinus, Ed Riggall)
- 3 communication co-ordinators (Kat Nicholls, Mel Rae and David Harbison coordinators)
- 1 DEDJTR representative (Martin Dunstan)
- 1 workshop facilitator (Cam Nicholson)

Producers representing different research topics and taking part in panel discussions is shown in Table 11.

Table 11. Producer group representation in the panel discussions

	PRS sites					
	NSW	**VIC**	**TAS**	**SA**	**WA**	**Total**
Mixed farming system						
B.PSP.0013 – Alternative legumes in mixed farming	1				2	3
B.GSM.0008 – Dual-purpose crops		1			1	2
						5
Temperate pasture system						
B.PSP.0005 – Soil borne root disease				2	1	3
B.PUE.0104 – Phosphorus efficient legume systems	1	1	1		1	4
B.PBE.0030 – Pasture persistence & establishment					1	1
B.GSM.0010 – Real time biomass	1	2	1		1	5
B.PBE.0038 – Pre-breeding phalaris		2				2
						15
Sub-tropical pastures						
B.PSP.0001 – Sub-tropical pastures	2	1			2	5
						5
TOTAL	**5**	**5**	**2**	**2**	**9**	**25**

At the workshop, gaps in research of topic areas were identified or queried and are located in MLA PRS National workshop researcher write up notes.

The evaluation of the PRS workshop showed the majority of participants (33/36), scored the workshop above three for both learning the latest research results and exploration of each research area (Fig. 1). Approximately half the participants scored four or above as an opportunity to exploring research areas but less scored four for learning about the latest research results. This could be because they knew some of what they heard or that there wasn't enough time to explore research results through questions in open floor discussion. Each researcher presented for ten minutes and producer groups also had limits on presentation time to contribute additional results and answer questions.

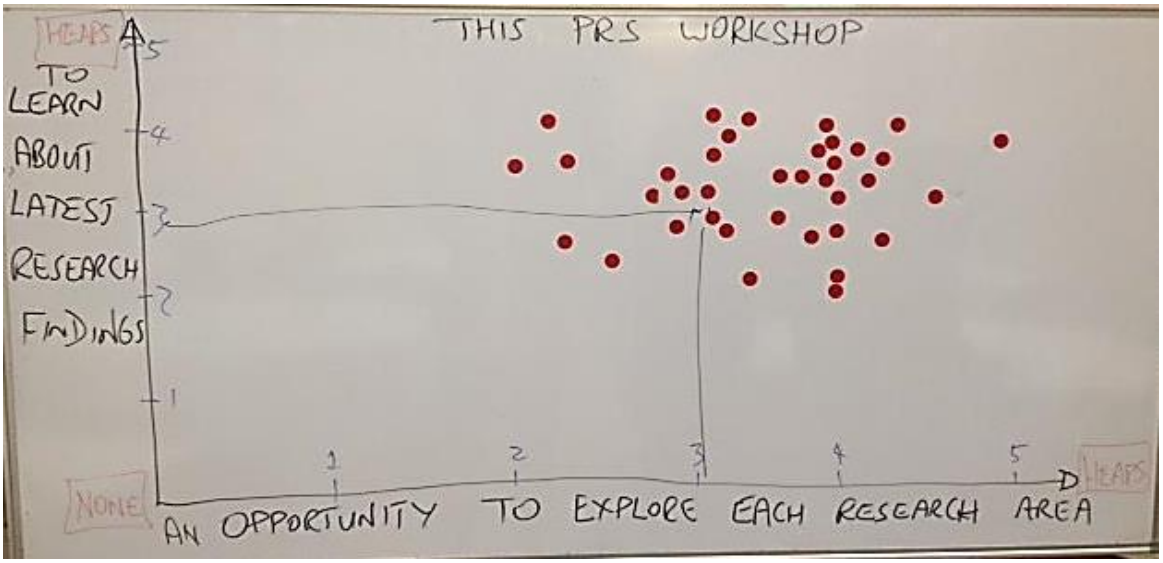

Fig. 1 The PRS workshop evaluation results.

At the workshop there was also a mid-term review of the PRS program. Results of both producers and researchers thoughts are shown in Table 12. to 14.

N.B Further results are available from the MLA National symposium evaluation report.

Table 12. Producer and Researcher thoughts on what value PRS adds to MLA research investment

Producer thoughts	**Researcher Thoughts**
• Stretching geographic area so that local differences and opportunities can be accounted for. • Providing additional data and knowledge. • Connecting researchers and producers together improves research projects and PRS projects particularly by making research more practical and fit better into farm systems. • Increasing extension of research. • Speeding up adoption. • Guiding future MLA investment. • Allowing MLA to be seen to be investing. • Cost effective way of doing research.	• Stretches geographic area. • Data from trial. • Connects researchers with producers. • Producer perspective, issues and solution. • Helps producers to understand research process

Table 13. Producer and Researcher thoughts on how PRS has added value to research investment

Producer thoughts	**Researcher Thoughts**
• Enables communication and feedback opportunities between producers and researchers. • Early and effective communication improves research planning. • Having producers involved improves research outcomes through their knowledge and allows research to occur on farms. • PRS can be used as a platform for extension activities. • Having a strong committed group with skilled people. • Good Systems in place.	• By having a strong committed group. • Advisors involved. • Producers tell researchers their issues / needs and context. • Find sites/Field days • New knowledge added. • Formed a partnership from start.

Table 14. Producer and Researcher thoughts on what could be added to improve PRS

Producer thoughts	Researcher Thoughts
• Increase scale of the program • Flexibility to increase length of project • Improve communication between topics to identify commonality and promote linkages • Group Support involving resources and skilled people and researcher support • Research project alignment with PRS topic needs to be identified early and the group enthusiastic • Clearer processes and expectations	• Build PRS into research contracts, dollars and process to implement. • Build in skilled people (e.g. Vet/ Project Manager) to help answer questions/Agro process/action. • Seek more geographical support and local support. • Consultant and state group leader is important. • Better match farmer groups to research projects.

5 Discussion

5.1 Identify, coordinate and liaise with farmer groups

The primary objective of the program was to identify, coordinate and liaise with farmer groups in Victoria who wished to participate in Participatory R&D projects.

Victoria had the highest number of groups apply of any state. The good group interest was due to the interest created by advertising and the PRS coordinators and also because of the wide network of groups which occur in Victoria.

It was evident that producer groups with paid support mainly applied. A key selection criterion for groups was that they were to be producer driven, which was difficult to assess. Groups could be producer driven but still have a paid coordinator. It was evident that some facilitators applied but possibly only one farmer had been consulted with.

Another key selection criterion was for the group to have innovative leading producers involved. Groups chosen were regarded as meeting this criteria, however, one group (Virtual group) failed to maintain producer interest. This failure may have been due to the fact that the project was not producing new and positive research findings (failing to keep participants engaged) or because it was a group newly created for the project objectives only. Thus, the group had no reason to get together other than through this project. The lack of strong producer relationships within the group, the wide geographic spread of participants also increased the difficulty. Whilst it was originally planned for members of this group to be able to use remote access to attend meetings, at the first meeting, one producer kept losing connection and did not consequently attend another meeting. The group also contained four farm managers and three of them left to manage other properties and were no longer able to support the project.

The best groups were those that also had an enthusiastic and committed co-ordinator. Although much emphasis is placed on selection of the producers, a skilled group coordinator was highly valued by the producers, researcher and the PRS coordinator as it made implementation and reporting of the project much easier.

5.2 Facilitation of seven workshops by November 2014

Objective 2 was to facilitate seven workshops with relevant farmer groups and FIP researchers by November 2014 as part of the establishment of Participatory R&D sites. The seven workshops were all successfully completed in 2014, workshop objectives were met and all groups were able to use the results to further plan. The process used in the workshops worked well and was shared with the other state-wide coordinators.

In the mid-year review of PRS program at the Producer Symposium it was identified that having these early interactions between group and researcher allowed research modifications to be made in both producers and researcher's research plans and resulted in better research outcomes. These initial planning workshop and annual reviews were also identified to create communication opportunities between producers, advisors and researchers which allowed relationships to be built that further improved R&D.

To run successful workshops there were many important factors but three factors stood out:

- A skilled facilitator was needed
- Identification of common value between the group and researcher.
- Opportunity for producers to contribute

The challenge was to find commonality between what the group wanted to do and what value the group could add to the existing research project. Therefore some background information needed to be collected prior to get an understanding of the FIP research and the direction the group were interested in taking.

With the measuring biomass project the research project was quite specific regarding testing optical sensors and so the process was relatively straight forward. However, the Central Ranges Grassland Society branch, wanted to do phosphorus (P) mapping and use variable rate application to improve phosphorus use efficiency which was in contrast to the FIP research project in terms of testing P efficient clovers. There was some compromise that had to be agreed to, with the group testing new clovers but also doing extractive trials to identify constraints to pasture production which the group also had interest in.

In the group focussing on the topic of dual purpose crops there difficulty coming to agreement with the researcher regarding the methodology whilst the producers were keen to investigate spring sown canola with and without drainage to see if drainage would be necessary, the researcher felt that it was unnecessary as it was already proven that canola wouldn't cope with waterlogging.

For the two groups focussing on pasture persistence, as there was no FIP research project, this process only needed to be vetted by the researcher to see that this research would offer something new to the topic area.

5.3 Establish, monitor, evaluate and report on seven PRS groups

Objective 3 was to establish, monitor, evaluate and report on seven Participatory R&D sites in operation throughout the agro-ecological zones of Victoria.

This objective was met through overseeing milestone reports, annual reviews and keeping in regular contact with the groups and offering support when needed and keeping groups focussed

on implementing their plans. Some groups would get excited with results and want to do more trials rather than focussing on those they needed to do.

The PRS coordinator took a lead role in helping the producer group develop a plan as not all groups had research skills and there was urgency in getting the group's contracted. However the group and group coordinator still needed to have ownership of the project. On reflection this was not always achieved with some groups not seeming to have an awareness of what was in the plan. Other groups executed the plans precisely and took an active interest in the project planning component. It was apparent that groups all operated quite differently and what worked with one group, didn't necessarily work with another and so the facilitator needed to identify the different group's strengths/needs and had to be adaptable so they could assist them.

Having skilled producer group coordinators was an important ingredient in the producer group. Whilst producers are often a focus for programs, the group coordinators contribution can be undervalued. The PRS mid-term evaluation recognised that tor the PRS to work well, it needed to have a strong group made up of competent committed people with different skill sets (researcher, producer and advisors) and that the researchers valued the contribution of skilled people to draw on to also support groups when needed.

This particularly became apparent in the groups writing the final reports. Most seem adept at collecting lots of data but then some were completely overwhelmed with how to pull it together for report writing. Also where groups bought in expertise, such as statisticians or economists, the groups then had difficulty in interpreting results. Both the researcher and coordinator were needed to provide technical and interpretation assistance.

Some researchers were often critical of the research done by the group and this was to be expected as most group coordinators were generally not skilled researchers and having to learn as they went along. From a producer's perspective, some of the small trials proposed by the researchers where not on a scale they saw value in.

The mid PRS evaluation showed that the PRS program had added value to the MLA research investment. Researchers and producers were in agreement that PRS had allowed expansion of research into more geographic areas and that it had enabled additional data to be collected and therefore more proof. This more localised approach to research was successful because it identified region/enterprise specific issues and what technology or product worked and what didn't. The PRS program highlighted the potential restrictive nature that one research site offers where issues or opportunities would be missed. By having more research sites, it has also allowed more extension opportunities.

A summary of each group's main contribution to "new research findings" and what value they added to FIP is made below. Complete research findings can be found in producer group final reports.

- Perennial Pasture Systems: found that a key reason to affect phalaris persistence was paddock size which had previously not been identified and this is likely to do with a reduction in quality in both grazing and pasture management areas with increasing paddock size.

- South West Prime lamb group: Modified an existing perennial ryegrass recruitment method to thicken up pastures that reduced the spelling time required of pastures.

- Central Ranges Grassland Society branch: Found both the establishment and adaptation of serradellas (more P efficient legumes) difficult to establish and regenerate. Found also the existence of soil borne diseases and responses to susceptible sub clovers cultivars to the application of fungicide.

- SFS Hamilton branch & Cavendish BWBL group: Discovered grazing spring sown canola appeared to make it more susceptible to waterlogging by creating a larger root system rather than grazed canola dewatering the soil profile and reducing the risk of waterlogging over winter.

- Kelly gang BWBL group and Virtual Group: Found that producer visual estimation of biomass was consistently inaccurate and the GreenSeeker optical sensor was not as accurate as just recording height as a predictor of green biomass in Victoria.

- SFS Gippsland branch & BetterBeef group: Found that existing kikuyu grass and continental fescue (summer active) were the most persistent and productive of the grasses trialled in different soil types in Gippsland and the best fit for a permanent pasture to provide summer feed and ground protection.

Better FIP and PRS research outcomes were achieved by assisting effective communication between producers and researchers at workshops and annual reviews. Producer contributions allowed research to have practical solutions that fitted their farm systems and issues. Researchers offered producers access to new research and their expertise and a chance for producers to ask questions.

Not all groups were repeat surveyed at the final review but from feedback collected, producer's improved knowledge, skills and confidence by being involved in the PRS program. Producers also rated their influence on research projects more highly than in the initial survey. Producer feedback at the mid-year review indicated that they saw PRS as a way for them to guide future MLA investment and that it allowed MLA to be seen by producers to be investing in local research. This was partly by the existence of PRS sites which provided a platform for extension of results, a local focus for producers and opportunities for field days which both researchers and producers felt valuable.

It became difficult to maintain engagement in some topic areas where the research had stalled. For example, in the biomass project the pioneer type producers would want to move on to another issue was notable, which was difficult for the Virtual group (a single issue group). Additionally, some groups combined their final review with another event because of the difficulty in getting producers together without new findings or information on offer.

5.4 Assistance with national coordination

Objective 4 was to assist the MLA project manager with national coordination of the Participatory Research program.

This objective was met particularly through the development phase of the project. Once groups were established, there was less need for assistance, although the PRS extension extraction process emerged as an opportunity for assistance to MLA.

Most of the products worked well except for the final reporting template. Most groups found it to be confusing and felt it was repetitive. The groups could have done with access to a good final report example to show them what was expected. Part of the issue for the final report was that it was a both a mix of a standard research report and an extension report. Producer groups were finding themselves trying to report on practice changes relating to participation in extension activities, the effectiveness of PRS program and their research activities.

The majority of products/processes could be used again to run a new phase of participatory research without any major changes needing to occur.

5.5 Organise with MLA a national event

Objective 5 was to organise in collaboration with MLA, a national event for farmers, facilitators and researchers which allow for networking between farmers from different Participatory R&D sites. This objective was met in early June 2016 with a successful one day being held at Attwood with 58 participants.

The evaluation showed that 33 of 36 participants (largely producers and coordinators) scored the workshop above average for providing opportunities to explore research areas and to learn about the latest research findings from FIP researchers on seven key topic areas.

Facilitated notes from the researchers and panel discussions captured potential gaps in the research that could be considered by MLA for future funding. Harvesting of insights from the PRS work on farming implications also commenced which was further built on with the extension extraction process.

The one day event meant that the program was full and so there was no time from interaction from the floor or follow up producer's concerns about potential issues/gaps in knowledge that had been written on butcher's papers. This could be a consideration for future events, where a process could be put in place to get the researchers to provide verification of whether the gap in knowledge exists or not.

The producers in the panel discussions did not always seem to be the lead producers. This may have been due to the timing of the event (early June 2016), where some mixed farmers were still sowing. Some also did not seem well prepared to speak in the group. Perhaps the most impressive panel discussion was that of the measuring biomass group who spoke passionately about the need to have an easy to use mobile device.

The workshop provided lots of opportunities for networking and discussing projects which was appreciated by coordinators and producers who were keen to find out how other projects were progressing.

It was planned for groups to have access to one page PRS site information and key findings prior to the event as background reading and to assist in groups networking. However, time did not permit the editing and compilation of all PRS group notes.

6 Conclusions/recommendations

The conclusions from coordination of participatory R&D for the Feedbase investment plan in Victoria are that:

- Proactive groundwork in identifying and liaising with producer groups ensured that 19 quality groups expressed interest in being involved in the project.
- Coordinators established seven successful participatory R&D groups involving six different FIP research topics - whilst engaging 58 producers in PRS sites.
- The seven groups all contributed to "new research" and provided agreed value into FIP research projects.
- Assistance to MLA FIP program manager was actively provided to ensure resources were available for a successful PRS program to be implemented nationally.
- A national producer symposium attended by 58 participants effectively allowed networking and sharing of knowledge between researchers and producers on the most recent findings of FIP and producer research.
- The PRS program allowed "harvesting" of research key messages and developed potential future extension products based on market research information collected from groups.

Recommendations as a result of the project are:

- For the Producer Research Sites to work well they need a skilled committed team involving:
    - Good producer group coordinator to lead the project with support from leading producers willing to share their expertise.
    - Researcher that has producer research site outputs within their existing project that are resourced.
    - Support of a PRS coordinator and facilitator to ensure effective communication and implementation of agreed projects.

- Future R&D should use participatory research methodology which involves communication between producers and researchers early and throughout the research project to improve the outcomes of research projects.

- For future PRS type projects, producer group coordinators having ready access to examples of research methodology for common research projects and researcher approved on-farm paddock trial protocols would ease burdens on researchers and PRS coordinator to provide support and ensure quality research is implemented.

7 Key messages

Key messages from coordination of participatory R&D are:

- PRS is a way of involving more "leading/pioneering" type producers in R&D which is a market segment that have often not been successfully catered for.
- The PRS program has been a useful way to extend the geographic spread of R&D and has provided a platform for extension opportunities.
- Creating two way communication opportunities for producers and researchers is a key element to the success of participatory R&D and was achieved through facilitated planning workshops and annual reviews that enabled sharing of expertise and interpretation of research results in the context of local farm systems.

8 Bibliography

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9 Appendix

9.1 Annual review year two - objectives and key reflection questions

Objectives in year two

- To identify if the project is adequately answering the research or key questions posed by the producer group and if any adjustments to the research were needed.
- For producers and researchers to share in the interpretation of the results and identify the key learnings to date
- Identify if the results indicate that the research/innovation fits within farm systems or if it still needs to be modified.
- To check if producer confidence in adopting the research has improved.

Key reflection questions

1. What are your reactions about the results you have heard today? (*What surprised you, disappointed you, or pleased you, were they better or worse than what you expected?)*

2. What do you think (farmers, Researcher) has been the key learnings or insights so far from the results?

3. With the results we have to date, where do you see the research fitting into the farm system or does it need further modification to make it fit?

4. Based on the results are you confident in applying the research on your own farms. If not why not? (*May not have enough knowledge, too early, results inconclusive*).

5. What do you think has worked well in the trials and what hasn't?

6. What if any changes do you think we need to make to improve on what's being done?

9.2 Annual review year three - objectives and key reflection questions

Objectives in year three

- To identify if the project is adequately answering the research or key questions posed by the producer group and if any adjustments to the project is needed.
- For producers and researchers share in the interpretation of the results and identify the implications of the research to a farm business.

Key reflection questions

1. What can you see as the benefits / positives / impacts from this research to your farm business?

2. What might be some downsides / negatives / challenges of adopting the research findings to your farm business?

3. On balance how much of an impact do you think it will have to your business if adopted? *(NB: closed type question so expect 1 word answers)*

4. If you had to describe what's in this research for another producer (your neighbour), what would you tell them (positive and negative)?

9.3 Final review - objectives and key reflection questions

Objectives final review

- To identify if the project has adequately answered the key objectives posed by the producer group.
- For producers and researchers share in the interpretation of the results and identify the implications of the research to a farm business
- Use the farmer group to test the direction of the new research and:
    - How likely it is for them to adopt?
    - What could be done to make this easier?

Key questions

1. What are your reactions about the results you have heard today?

2. What knowledge, attitudes or skill changes have occurred for you as a result of being involved in the project?

3. What will you do differently? What will you change? (*Determine likelihood of Practice change).*

4. How easy will it be to adopt the research practices?

5. What might need to be put in place to make changing practices easier?

9.4 National MLA FIP Producer symposium workshop

Project Title (topic) ……

Group and location ……..

1. What are the aims of your research project? *(Note: It can be found in project application)*

2. What are the **most important results** producers, advisors and researchers should know about?

3. What **opportunities or benefits** will this research provide for farms in your area?

4. What **pitfalls/challenges** do you believe other producers should be aware of around adoption of this research in a farming system?

5. What (if anything) is **required in the future** to further develop this idea? (new knowledge, product development, skills development, testing in other environments etc.)