final report

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RRNDfP – Mixed Farming – Scoping and Support

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Executive summary

Mixed farming operations contribute significantly to both grain and red meat production in southern Australia. Due to the complexity of these systems, better integration of cropping, pasture and livestock enterprises has the potential to improve productivity.

MLA recently funded a multidisciplinary mixed farming RD&A review (L.LSM.0006), led by Charles Sturt University, which identified several areas where further investment in either research or extension/adoption activities would be likely to have a significant impact on productivity from livestock/cropping farms. One of the key findings was that poor adoption by producers of past research was likely due to limited understanding of the complexity of mixed farming systems by both producers and advisors, with resultant failure to understand risks and impacts of management changes. An investment plan was developed, recommending $39.3m of investment over 10 years.

The purpose of the current project was to enable the engagement of a consultant, Cam Nicolson, Nicon Rural Services, to identify the core research questions suitable for a 3 year investment timeframe, and with stakeholder consultation, develop and submit an application for a Rural R&D for Profit (RRNDfP) grant.

Using the previous L.LSM.0006 review as a base, four key areas were identified for inclusion in the application:

1. Enhancing the delivery structures so farmers can learn from each other (peer learning).
2. Using communities of practice for independent advisors to research how to optimise their influence at the whole farm level.
3. Discovering new insights around recurring farming questions through data capture and analysis from operational mixed farms.
4. Filling specific research gaps.

Participants involved in the consultation and subsequently included in the submission were Charles Sturt University, University of Adelaide, University of Melbourne, Primary Industries Research SA (PIRSA), Federation University, Department of Agriculture and Food Western Australia (DAFWA), and 19 producer groups. Meat and Livestock Australia, Grains Research and Development Corporation and Australian Wool Innovation also committed cash to the proposal, along with the participants.

If successful, the outcome of the RRNDfP will be a number of multidisciplinary collaborative activities which lead to greater adoption of management changes which increase productivity and profit on mixed farms across southern Australia. It will include a legacy of improved structures and knowledge of superior methods for achieving producer adoption of mixed farming improvements.

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1 Background

Mixed farming, involving livestock and cropping on the same farm, covers approximately 47 million ha of farm land in Southern and Western Australia, and involves at least 16,000 farmers. While significant advances have been made in understanding the integration of livestock with cropping in past investment programs, there remain significant gaps and opportunities.

CSU have recently completed an MLA funded multidisciplinary mixed farming RD&A review (L.LSM.0006) identifying some of the key opportunities for impact and gaps for further research and or extension and adoption activities. Benchmarking data from this project suggests that if the current financial performance of the top 20% of mixed farmers could be emulated by the middle 60% across the entire mixed farming region in Southern and Western Australia, then the additional farm profit would be worth $2.8 billion per year, demonstrating a large opportunity.

This project was conducted to support and enable the development of a Rural R&D for Profit (RRNDfP) application focussed on Mixed Farming Systems, with a title of “Optimising whole farm business performance in mixed farming systems- researching how to discuss and adopt the opportunities, synergies and trade-offs from a crop and livestock system.”. The funding of this would allow the priority areas previously identified to be addressed, ultimately improving the profitability of the mixed farming industries.

2 Project objectives

1. Have identified a suitable candidate to lead the submission development. To be agreed with MLA.

2. Prepare, together with the consultant, and in consultation with MLA and other stakeholders a RRNDfP application. The application will be approved by MLA in the first instance before it is submitted to the Department of Agriculture and Water Resources.

3 Methodology

A suitable external consultant, Cam Nicolson (Nicon Rural Services), was identified to lead the RRNDfP submission process, and engaged by Charles Sturt University. The investment plan formulated from the previous L.LSM.0006 project was used as the base from which broad priorities were chosen. Stakeholders who had been involved in the identification of gaps and opportunities in the development of the investment plan, so therefore had an understanding and interest in solving the issues, were consulted, as well as new players. The organisations included in the final submission were Charles Sturt University, University of Adelaide, University of Melbourne, Federation University, DAFWA, PIRSA, MLA, GRDC, 19 producer groups and private consultants. CSIRO, UWA and NSW DPI were also consulted but not included in the final submission. A series of 6 producer group engagement meetings were held to ensure producer needs and expectations would be addressed in the submission. A consensus on key project themes and activity areas with participants was reached, and the RRND4P application written and submitted.

4 Results

The 10 year investment plan resulting from project L.LSM.0006 identified six key areas of opportunity for investment to increase profitability on mixed farms. These areas, and the recommended investment distribution, are shown in Fig. 1.

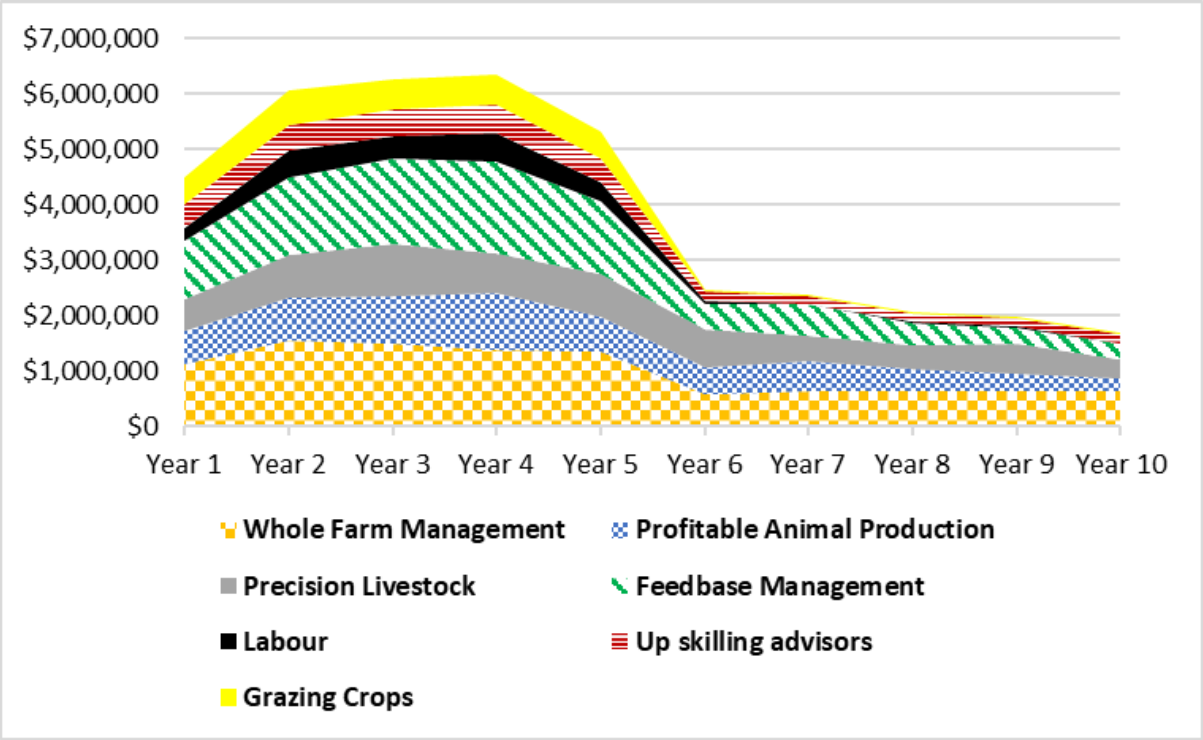

Fig. 1. Areas of opportunity and proposed amount invested in each by year.

The RRNDfP process suits activities with a 3 year timeline. Fig. 2 shows that many of the activities identified in project L.LSM.0006 could be achieved within this timeframe. The bulk of opportunity identified focussed on supporting adoption to achieve on-farm use of existing knowledge, rather than generation of new research.

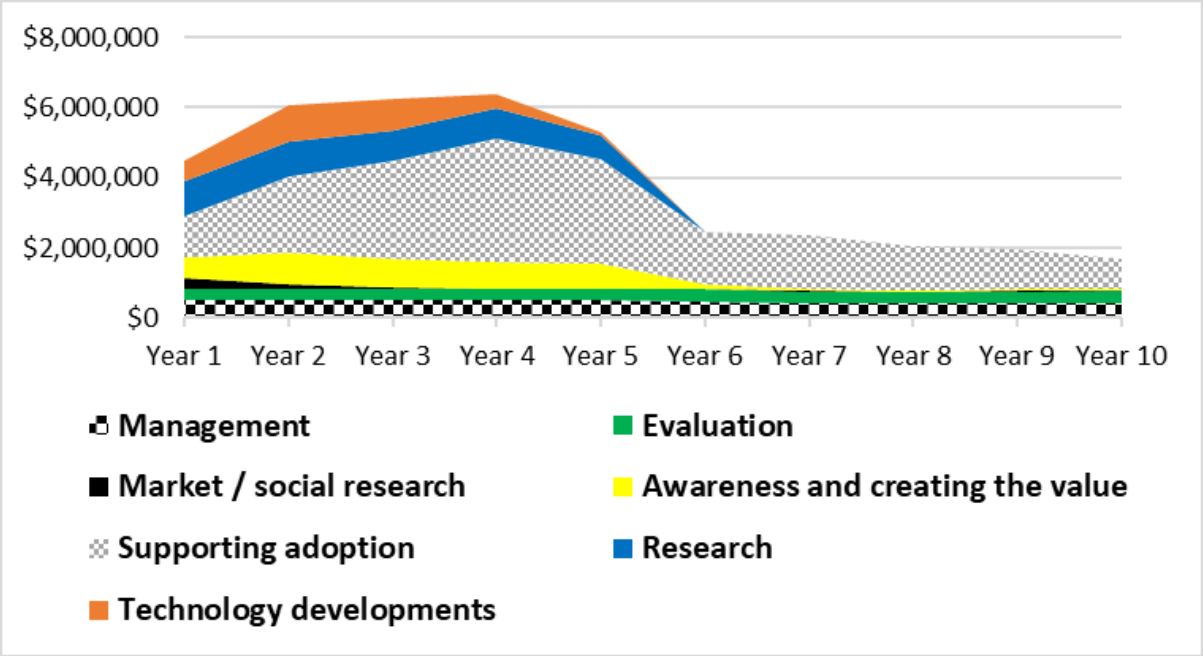

Fig. 2. Amount invested in each component activity by year.

Consultation with stakeholders prioritised themes for the RRNDfP submission. It was considered that the reason for poor adoption by mixed farming producers of previous research was due to an inability of farmers and advisers to engage around the complex issues involved, inconsistent messages from advisors, and both farmers and advisors not understanding the potential risks associated with adoption at the whole farm level. To address these concerns, and so improve adoption of more productive and profitable technologies, the key objective of the RRNDfP submission was to develop, test and demonstrate the value of new structures, approaches and collaborations that will ultimately realise the large gains possible. Improving the transfer of information would allow farmers to make more informed decisions about whole-farm management, through a better understanding of the synergies, trade-offs, antogonisms and opportunities in mixed farming systems.

Four key components were identified for inclusion in the RRNDfP submission. They were:

1. Enhancing the delivery structures so farmers can learn from each other.

    a. By creating a co-ordinating team led by key producer groups in each state, better opportunities for farmer to farmer learning are enabled.
    b. Implement farmer to farmer learning examples within each organisation (group), with agreed activities
    c. Evaluation of farmer to farmer learning approaches by the co-ordinating team so that better approaches are identified.

2. Using communities of practice for independent advisors to research how to optimise their influence at the whole farm level.

    Three regional communities of practice will be established to organise and facilitate events for farmers and advisors. These events provide research and learning and evaluation opportunity for advisors to increase skill development and capability in

delivering mixed farming advice. Many advisors currently provide enterprise specific advice which may not optimise whole-farm profitability. These activities are aimed at giving advisors a greater appreciation of the whole farm implications of their advice, greater confidence to refer clients to others for specific information, and so improve the quality of advice.

3. Discovering new insights around recurring mixed farming questions through data capture and analysis from operational mixed farms.

   Most recurring questions around mixed farming concern how to better integrate different factors. The objective of this activity is to develop and evaluate a new integrated approach to using big data from multiple commercial farms in order to answer recurring questions about mixed farms. If proven effective, this may overcome some of the adoption issues from use of alternative methods such as modelling, where the perception can be that they don't reflect the farmers own property so the results are not relevant.

4. Filling specific research gaps.

   a. While there are many production areas of opportunity for R&D investment identified in Fig.1, the consensus was that much of this was due to failure of adoption of existing knowledge. However, several specific areas were identified for research projects, including the the use of supplementation to minimise animal health issues from winter crops; and the need to understand the labour barriers to running more stock on mixed farms.

The RRNDfP submission was completed and submitted for MLA approval in November 2018 followed by submission to the Department of Agriculture and Water Resources in November 2018.

5 Discussion

5.1 Objective 1.

Objective : Have identified a suitable candidate to lead the submission development. To be agreed with MLA.

This objective was successfully completed with the engagement of Mr Cam Nicolson (Nicon Rural Services). Cam is a highly experienced consultant who also had a key role in the background L.LSM.0006 project.

5.2 Objective 2.

Objective: Prepare, together with the consultant, and in consultation with MLA and it's other stakeholders a RRNDfP application. The application will be approved by MLA in the first instance before it is submitted to the Department of Agriculture and Water Resources.

This objective has been successfully completed with submission of the application to DAWR. The consultation and development process has identified key reasons for the poor adoption of previous research findings on mixed farming properties, but importantly, has devised novel strategies to improve behaviours and research methods. If successful, the RRNDfP submission will provide the

structures and opportunity for both producers and advisors to more effectively achieve knowledge transfer which is appropriate for whole-farm, rather than single enterprise profitability. It will also provide the opportunity for research to generate knowledge which has been identified as a limitation to productivity, which is also a necessary activity for the industry to continue to move forward. It is intended to leave a legacy of improved skills for producers, advisors and researchers, to effectuate more effective transfer of information between groups with the same intent of increasing the profitability of mixed farms.

6 Conclusions/recommendations

This project highlights the need for extension messages to be placed in context of the whole-farm, particularly on mixed livestock/cropping farms where there may be unintended consequences of change. There is a large need to find improved methods of information transfer to ensure red meat producers have the opportunity to make informed decisions to improve whole-farm profitability using existing and future research findings.

7 Key messages

Producers need to seek the best information and consider whole-farm, rather than enterprise specific impacts, in order to optimise whole-farm profitability and manage risk.

8 Appendix

RRNDfP application as submitted to MLA (please note the actual submission was made online through the Governments Grant Connect system, as per requirements, by MLA).